Northampton Community College

2010-2011 COLLEGE CATALOG

catalog.northampton.edu

A searchable electronic version of the 2010-2011 College Catalog
is available at **catalog.northampton.edu**

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Accreditations

Northampton Community College is accredited by the Middle States Commission on Higher Education. The association can be contacted at 267-284-5000 or at 3624 Market Street, Philadelphia, PA 19104. The College is also approved and registered by the Pennsylvania Department of Education. The College is authorized to award the associate in arts, associate in science, and associate in applied science degrees.

- **Accounting, Business Administration, and Business Management:** The Accounting, Business Administration and Business Management programs are fully accredited by the Association of Collegiate Business Schools and Programs (ACBSP). The Association can be contacted at 913-339-9356 or at 7007 College Boulevard, Suite 420, Overland Park, KS 66211.
- **Dental Hygiene:** The program in dental hygiene is accredited by the Commission on Dental Accreditation. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at 312-440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678 www.ada.org.
- **Diagnostic Medical Sonography:** The Diagnostic Medical Sonography program is accredited by the Commission on Accreditation of Allied Health Educations Programs (CAAHEP) in collaboration with the Joint Review Committee on Education in Diagnostic Medical Sonography. The JRC-DMS can be contacted at 443-973-3251 or 6021 University Blvd., Suite 500 Ellicott City, Md 21043.
- **Early Childhood Education:** The Early Childhood Associate Degree, including its online program, is accredited by the National Association for the Education of Young Children (NAEYC). The Association can be contacted at 1313 L St. N.W. Suite 500, Washington DC 20005 202- 232-8777 or www.naeyc.org.
- **Funeral Service Education:** Northampton Community College is a member of the University Mortuary Science Education Association, and is accredited by the American Board of Funeral Service Education (ABFSE), 3414 Ashland Ave., Suite G, St. Joseph, MO 64506, 816-233-3747. The annual passage rate of first-time takers on the National Board Examination (NBE) for the most recent three-year period for this institution and all ABFSE accredited funeral service education programs is posted on the ABFSE web site (www.abfse.org).
- **Nursing:** The Practical and Associate Degree Nursing programs are approved by the Pennsylvania State Board of Nursing and accredited by the National League for Nursing Accrediting Commission, Inc., 3343 Peachtree Rd., NE Suite 500, Atlanta, GA 30326, 404-975-5000 or www.nlnac.org .
- **Paralegal:** The Paralegal program has been approved by the American Bar Association. Information on ABA approval can be obtained from the American Bar Association, Standing Committee on Paralegals, 321 N. Clark Street, Mail Stop 19.1, Chicago, IL 60610-4714 or at http://www.abaparalegals.org
- **Radiography:** The Radiography program is fully accredited by the Joint Review Committee on Education in Radiologic Technology (JRCERT) 20 North Wacker Drive, Suite 2850, Chicago, Illinois 60606-3182, www.jrcert.org. 312-704-5300
- **Surgical Technology:** The Surgical Technology Program is accredited by the Commission on Accreditation of Allied Health Programs (CAAHEP) upon recommendation of the Accreditation Review Committee on Education in Surgical Technology. They can be contacted at 303-694-9262 or 6 West Dry Creek Circle, Littleton, CO 80120.
- **Veterinary Technology:** The Veterinary Technician program is accredited by the American Veterinary Medical Association (AVMA) and the Committee on Veterinary Technician Education and Activities (CVTEA) since 1999. The AVMA / CVTEA can be contacted at 847-925-8070 or at 1931 North Meacham Road, Suite 100, Schaumburg, IL 60173.

Admissions Policy

In keeping with its philosophy and objectives, the College will admit all applicants who are high school graduates, General Educational Development (GED) recipients, and home schooled students who have completed senior-level curriculum. Also, those who give evidence, through previous academic, field work, and/or personal qualifications that they are capable of achieving success in their chosen program of study will be admitted.

In addition, adults who are not high school graduates will be admitted if they are 18 years of age or older and give evidence of being able to benefit from a course offered by the College. However, federal legislation requires that students who are not high school graduates or recipients of a GED must prove their ability to benefit (by specific testing) in order to be eligible to receive funding for their college education.

When you are accepted to the College you are not ensured admission to all of our programs. The College reserves the right to limit enrollment in college parallel and career curricula. Students who do not meet the College's academic standards or those who do not meet special admissions requirements will not be accepted into selective programs. Once formally accepted, you should take placement tests prior to registration. After you complete your placement testing, you will receive registration dates and will receive help in selecting your courses.

Students who apply early and follow the correct admission procedure will be able to take full advantage of all advising

services. They will also have a greater selection of courses from which they can choose. Graduation rates, transfer out rates and campus crime data required by the Student Right to Know and Campus Security Act are available upon request from the Admissions Office, 610-861-5500 or online at www.northampton.edu.

How to start . . .

Below are the items that must be completed if you intend to earn a degree, certificate or specialized diploma on a full- or part-time basis.

1. Submit a completed application form or apply online at www.northampton.edu and include a $25 non-refundable application fee in the form of a check or money order made payable to NCC; or VISA, MasterCard, American Express or Discover card.

2. Official high school, GED, home school record, and college transcripts (if applicable) are required if you are applying for a selective program and/or if you are applying for financial aid.

3. To receive transfer credits, an official college transcript must be submitted. Credits for which a student received a grade of C or better, and which apply to a student's program, will be accepted as transfer credits. Only credits from institutions that have regional accreditation or are recognized by the American Council on Education (ACE) are acceptable.

4. Special requirements for certain programs are listed within this catalog, or under "Selective Admissions Programs" on the Admissions page of the NCC Web site.

5. Students who wish to audit a course must submit a completed application form.

Tuition Deposit

Full-time students, excluding Allied Health students who pay a $200 fee, must pay a $50 admission tuition deposit fee. Part-time students in selected programs will also be charged the fee, which will be applied to tuition and fees.

- If you are entering in the fall semester, the deposit will be payable within 15 days of acceptance and refundable to June 1; deposits paid after June 1 will not be refundable.
- If you apply after June 1, deposits will be payable within 15 days of acceptance or at the time of registration, whichever is earlier, and the deposit will not be refundable.
- If you are entering in the spring semester, the deposit will be payable within 15 days of acceptance and refundable to December 1; deposits paid after December 1 will not be refundable.
- If you apply after December 1, deposits will be payable within 15 days of acceptance or at the time of registration, whichever is earlier, and the deposit will not be refundable.

Concurrent and Dual Enrollment for High School and Home School Students

Dual enrollment students from participating high schools may enroll in College courses during the high school day as specified by each high school. Enrollment eligibility requirements vary from school to school and are available in each high school guidance office and NCC's admissions office.

Concurrent enrollment students may enroll in one or two classes at NCC if they are seniors in high school or in the last year of a home school curriculum and have demonstrated the academic ability to benefit from course offerings at the College. All students must have approval of their school districts. Final decision to admit a concurrent enrollment student rests with the College.

Students who are in academic difficulty or have been expelled or dropped out of high school are not eligible for concurrent enrollment. Such students will fall under the regular College admissions policy, which requires students to be 18 years of age and give evidence of being able to benefit from courses offered by the College.

All requests for concurrent and dual enrollment are processed through the NCC Admissions Office.

International Students

Any student who is or intends to be in the United States on a student (F1) visa is considered an international student. Before acceptance to NCC can be granted or the I-20 visa form can be issued, the following must be submitted to the Admissions Office:

1. NCC application with $25 application fee

2. All official transcripts in English from high school and/or college

3. Certification of Finance (obtained from Admissions) along with a bank statement verifying that $15,000 (if room and board is needed by the student) is available for educational purposes.

Preferred deadline to apply for Fall - July 1st, and for Spring - November 15th

For more information or to request an international student packet, contact the Admissions Office. The application is available online at www.northampton.edu.

Special Programs with Additional Admissions Requirements

More complete information is mailed to all applicants in these programs.

Dental Hygiene (preferred deadline Feb. 1 - Fall start only)

- *Before Admission:*
  - High school Chemistry and Biology with lab, with B or better, overall grade point average of 3.0. (college courses may be substituted for missing high school requirements)For those with more than 12 college credits - college level Chemistry and Biology courses can be a B - or better, minimum 2.67 overall and program science specific grade point average
  - Career Assessment Form
- *After Admission:*
  - Medical form
  - CPR certification
  - Health Insurance
  - First Aid Certification
  - Criminal Background Check
  - PA Child & Elder Abuse History

Diagnostic Medical Sonography (Associate in Applied Science - AAS; preferred deadline February 1 - Fall start only)

- *Before Admission:*
  - High school Algebra I and II with "Cs" or better, high school Biology with lab with a "B" or better (college courses may be substituted), at least 3.0 GPA, submission of Career Assessment Form, visit to an affiliated hospital, interview by invitation
- *After Admission:*
  - Medical Form
  - Health Insurance
  - Drug Screen
  - State and Federal Criminal Background Checks
  - CPR Certification for the Health Care Provider
  - Written verification that the Essential Functions/ Technical Standards can be met (form provided after admission)

Diagnostic Medical Sonography Diploma (Diploma Program; preferred deadline February 1 of previous year - Spring start only)

- *Before Admission:*
  - Completion of high school or equivalent courses at a post-secondary institution
  - Minimum overall GPA of 3.0
  - Allied Health background
  - MATH 140 (College Algebra)
  - Interview by invitation
  - DMSG 101 (Fundamentals of Sonography)
  - DMSG 103 (Introduction to Acoustical Physics)
  - Human Anatomy & Physiology I and II (BIOS 204 & BIOS 254)
  - Communication Skills (ENGL 101, English I; and CMTH 102, Speech Communication)
  - CISC 101 (Introduction to Computers) or three one-credit courses through OE/OE (OFAD 141, 142, 143)
- *After Admission:*
  - Medical Form
  - Health Insurance
  - Drug Screen
  - State and Federal Criminal Background Checks
  - CPR Certification for the Health Care Provider
  - Written verification that the Essential Functions/ Technical Standards can be met (form provided after admission)

Dietary Management Diploma

- *Before Admission:*
  - High school diploma or GED
  - Currently working at least 20 hours in healthcare food service industry

Funeral Service Education (preferred deadline Feb. 1 - Fall start only)

- *Before Admission:*
  - High school Chemistry and Biology with labs with Cs or better, overall grade point average of 2.5 (college courses can be substituted for missing high school requirements)
  - or Accelerated Program - completion of all general education credits with an overall college grade point average of 2.5
- *After Admission:*
  - Medical form
  - Student Trainee form
  - Health Insurance

Medical Assistant (Diploma Program; preferred deadline February 1 - Fall start only)

- *Before Admission:*
  - High school diploma or GED, high school biology with a lab with a C or better, high school Algebra I with a C or better (college courses can be substituted for missing high school requirements), placement into college level English
- *After Admission:*
  - State and Federal Criminal Background Checks
  - Physical examination forms
  - Immunization history
  - Documentation of recent hepatitis B vaccination or relevant titer

Nursing (preferred deadline Feb. 1 for Fall start and Sept. 15 for Spring start)

- *Before Admission:*

    - RN - high school Chemistry and Biology with lab with B or better, two years of Algebra with a C or better (college courses can be substituted for missing high school requirements), placement test into college level English and Math, overall college grade point average of 3.0.
    - Advanced Placement RN - RN requirements above, 3.0 in college level courses applicable to the program, completed specified RN general education core with C or better, current LPN license, passed the required Excelsior exams
    - LPN (Fall start only) - high school Algebra I and Biology with C or better (college courses can be substituted for missing high school requirements), overall college grade point average of 2.5
- *After Admission:*
    - CPR certification
    - State and Federal Criminal Background Checks
    - Health insurance
    - Child Abuse Background Check
    - Felony statement
    - Medical form

Radiography (preferred deadline Feb. 1 - Fall start only)

- *Before Admission:*
    - Completion of high school diploma or equivalent
    - High school biology with lab with "C" or better (Or BIOS 115 with "C' or better) and two units of Algebra (Or MATH 022 and MATH 026, Or MATH 028) with "C" or better
    - Minimum overall GPA of 2.5
    - Shadow at an affiliated hospital with signed HIPAA statement in-hand
    - Complete Career Assessment Form (CAF) post-shadowing
    - Information session and interview for competitive applicants
- *After Admission*:
    - Medical forms
    - State and Federal Criminal Background Checks
    - Health insurance
    - CPR certification for Health Care Provider
    - Written verification that the Essential Functions Technical Support Standards can be met

Sports Medicine: Athletic Training (preferred deadline Feb. 1 - Fall start only)

- *Before Admission:*
    - Completion of high school diploma or equivalent
    - High school Chemistry with lab with "B" or better (or CHEM 135 with "B" or better), high school Biology with lab with "C" or better (or BIOS 115 with "C" or better), one year of high school Algebra with a "C" or better (or MATH 022 with a "C" or better, and eligibility to take English I.
- *After Admission:*
    - State and Federal Criminal Background Checks
    - Medical forms and vaccinations

Surgical Technology (preferred deadline Feb. 1 - Fall start only)

- *Before Admission:*
    - High school Biology with lab with "C" or better, high school Algebra I with "C" or better (college courses may be substituted), 2.5 GPA, strong science background, interview by invitation
- *After Admission:*
    - Health insurance
    - Lab tests and immunizations
    - Physical examinations
    - Career Assessment Forms
    - Basic Life Support for Health Care Providers certificate
    - State and Federal Criminal Background Checks
    - Child and Elder Abuse History Clearance

Veterinary Technician (preferred deadline Feb. 1 - Fall start only)

- *Before Admission:*
    - High school Biology with lab with B or better, Algebra I and II with C or better (college courses can be substituted for missing high school requirements)
    - Interview (qualified applicants will be notified of date)
- *After Admission:*
    - Medical form

Other Requirements

- *Before Admission:*
    - Culinary Arts - Placement into English I by testing or transfer course
    - Theatre - Audition
- *After Admission:*
    - Automotive - Auto dealership sponsorship, valid driver's license, meeting with program director
    - Early Childhood Education - Medical form, Child abuse background check, 2 letters of reference
    - Culinary Arts - Medical form

Residency Policy

Tuition and fees at Northampton Community College are based on a student's permanent place of residence.

Students who have a permanent place of residence and meet all of the requirements as defined in the Northampton County or Monroe County Residency Policies are eligible to receive the applicable residency tuition and fee rate.

Residency is determined by the Admissions Office during the Admissions Application process and communicated to the student in the student's Letter of Acceptance. Changes in a student's residency which occur after a student is accepted to NCC are processed by the Registrar's Office.

Residency

To receive the in-district tuition rate, a student 21 years of age or older must meet all of the following requirements:

1. Be a U.S. citizen, permanent resident, H visa holder, or refugee.

2. Maintain a legal residence* in one of the eight sponsoring school districts** for at least 90 consecutive days prior to start of the semester for which they are applying.

*A legal residence is a student's permanent place of residence and one they have moved into for reasons other than attending college. Students living with in-district relatives do not qualify as legal residents.

**Bangor, Bethlehem, Easton, Nazareth, Northampton, Pen Argyl, Saucon Valley, or Wilson

3. Provide two proofs of residency **dated 90 days before a semester begins** from the list below:

- A PA driver's license with current address
- per capita (school district) tax receipt for the current year
- valid PA Depart. Of Transportation ID card
- lease (per capita tax bill or receipt or a utility bill needs to be the 2nd proof)
- utility bill (is accepted as 2nd form of proof for lease only)
- deed - home ownership is exempt from the 90 day rule

A student under the age of 21 retains the residency of his/her parents.

Families moving into a sponsoring school district (see ** above) must submit a Change of Information form and show proof of parents' residence with the required documents listed above to the Admissions Office (for new students) or the Records Office (for returning students).

A student under 21 not living with parents may be eligible for in-district rates if he/she proves independence. He/she must submit documentation proving independent status.

The definition of an independent student is one who is 1) a veteran, 2) married, 3) an orphan or ward of the court, 4) has legal dependents for whom he/she provides at least 50% of the support, or is 5) a full time, permanent, benefits eligible employee who pays local or per capita tax in-district.

If proof of one of the above cannot be given, the student maintains parents' residence.

IMPORTANT NOTES:

1. Students must document their residency before the first day of the semester in order to receive in-district rates for that semester. Students who qualify for residency after the beginning of a semester will be granted the appropriate tuition rates for the following semester. The college will not make retroactive changes to residency status.

2. Veterans retain the residency they had at the time they entered the military. They can qualify for in-district tuition as stated above.

3. If a student can not provide any of the documents listed above, please contact Admissions or Records for further guidance.

4. The documents will be reviewed and decided upon by the Residence Committee. Appeals of committee decisions will be reviewed by the Vice President of Student Affairs.

5. The College reserves the right to request additional information when appropriate. Until this residency documentation is received, student tuition will be assessed at the out-of-district or out-of-state rate. Falsification of records will result in immediate and retroactive residence change to out-of-county or out-of-state, and could result in disciplinary action.

6. NCC's decision to approve in-district residency may be challenged by the school district if their records do not reflect proper residency status. Out-of-county (those not residing within the eight sponsoring school districts) and out-of-state students will be charged non-resident fees.

Residency - Monroe County

To receive the Monroe County tuition rate, a student 21 years of age or older must meet all of the following requirements:

1. Be a U.S. citizen, permanent resident, H visa holder, or refugee.

2. Maintain a legal residence* in Monroe County** for at least 90 consecutive days prior to start of the semester for which they are applying.

*A legal residence is a student's permanent place of residence and one they have moved into for reasons other than attending college. Students living with in-district relatives do not qualify as legal residents.

**East Stroudsburg, Pleasant Valley, Pocono Mountain, Stroudsburg (residents of these school districts are considered Monroe County residency rates)

3. Provide two proofs of residency dated 90 days before a semester begins from the list below:

PA driver's license or valid PA Dept. of Transportation ID card showing current address

- apartment lease in your name
- per capita (school district) tax receipt; copy of federal return; or local real estate tax bill for the current year
- item mailed to your residence - only bank statement; pay stub; bills from utilities, credit card or phone
- deed - home ownership is exempt from the 90 day rule

A student under the age of 21 retains the residency of his/her parents.

Families moving into Monroe County (see ** above) must submit a Change of Information form and show proof of parents' residence with the required documents listed above to the Enrollment Office.

A student under 21 not living with parents may be eligible for Monroe residency rates if he/she proves independence. He/she must submit documentation proving independent status.

The definition of an independent student is one who is 1) a veteran, 2) married, 3) an orphan or ward of the court, 4) has legal dependents for whom he/she provides at least 50% of the support, or is 5) a full time, permanent, benefits eligible employee who pays local or per capita tax in Monroe County.

If proof of one of the above cannot be given, the student maintains parents' residence.

IMPORTANT NOTES:

1. Students must document their residency before the first day of the semester in order to receive Monroe rates for that semester. Students who qualify for residency after the beginning of a semester will be granted the appropriate tuition rates for the following semester. The College will not make retroactive changes to residency status.

2. Veterans retain the residency they had at the time they entered the military. They can qualify for in-district tuition as stated above.

3. If a student can not provide any of the documents listed above, please contact the Monroe Enrollment Office manager for further guidance.

4. The documents will be reviewed and decided upon by the Residence Committee. Appeals of committee decisions will be reviewed by the Vice President for Student Affairs.

5. The College reserves the right to request additional information when appropriate. Until this residency documentation is received, student tuition will be assessed at the out-of-PA county or out-of-state rate. Falsification of records will result in immediate and retroactive residence change to out-of-county or out-of-state, and could result in disciplinary action. Out-of-PA county (those not residing in Monroe County **) and out-of-state students will be charged non-resident fees.

Northampton Sponsoring School Districts

- Bangor Area
- Northampton Area
- Bethlehem Area
- Pen Argyl Area
- Easton Area
- Saucon Valley
- Nazareth Area
- Wilson Area

Placement Testing Policy

The college uses placement tests to assess skills in reading, writing, mathematics and English as a second language (ESL).* The results are used to place students into courses where they will have the best opportunity to succeed. Courses are available for students who need developmental work as determined by placement testing.

Before registering for credit courses, students must take the placement tests (or provide other evidence of English or Math eligibility). If students need developmental work, they must begin that work in their first semester at the college and continue until the requirements are completed (which may take several semesters). Students who test into both developmental writing and reading are required to enroll in the corresponding Counseling (COUN---) course as outlined in the Placement Guidelines. Developmental course work does not count toward degree requirements. Students who place into developmental courses can retest once before starting those courses. Students may not take the test while enrolled in a developmental course.

Some students may be placed into English or Mathematics courses as a result of PSSA, ACT, or SAT scores, or previous degrees or courses. Students must furnish the appropriate evidence of previous testing or experience before registering for courses. If they do not furnish evidence, they must take the placement test before registering.

* Students whose first language is not English should contact the ESL department for testing and placement. If students have low reading or writing scores on the English Placement Test and their first language is not English, they will be referred to the ESL department for ESL testing and placement.

Requests for accommodated testing must be submitted through the Office of Disability Services.

PLACEMENT GUIDELINES: English, Counseling, & Mathematics

ENGLISH

English I (ENGL101):

- Competence as determined by the English placement test
- Combined Reading and Writing 11th grade PSSA score of at least 2650 (with neither Reading nor Writing score below 1200).
- Score of 500 or higher on both the SAT Writing and Critical Reading exams (2005 and beyond).
- Evidence of a score of 21 or higher on the ACT English Exam.
- Completion of required developmental courses.

Writing Skills I (ENGL025), Writing Skills II (ENGL026), Reading Fundamentals (READ016), Critical Reading(READ017):

- Placement as determined by the English placement test

English as a Second Language:

- English language competence as determined by ESL department

COUNSELING

Special Studies: College Study Skills (COUN092):

- Required for students needing both Writing Skills I (ENGL025) and Reading Fundamentals (READ016); all three should be taken in the same semester

College Seminar: Applied Strategies for Academic Success (COUN150):

- Required for students needing both Writing Skills II (ENGL026) and Critical Reading (READ017); all three should be taken in the same semester

MATHEMATICS

Prealgebra (MATH 020), Applications in Math (MATH103):

- Open enrollment; no placement or pre-requisites needed

Elementary Algebra (MATH 022), Intermediate Algebra (MATH 026):

- Competence as determined by the mathematics placement test
- Completion of required developmental courses with a C or better

Elementary and Intermediate Algebra Combined (MATH 028):

- Competence as determined by the mathematics placement test

Foundations of Mathematics I (MATH118), Foundations of Mathematics II (MATH119), The Nature of Mathematics (MATH120), College Algebra (MATH140), Introductory Statistics (MATH150):

- Competence as determined by the mathematics placement test
- 11th grade PSSA math score of 1300 or higher
- Score of 500 or higher on the SAT mathematics exam
- Completion of required developmental courses with a C or better

For all other MATH classes, refer to course prerequisites in each course description.

Transferring

Transferring In

Northampton Community College will accept credits when transferring from another institution when:

1. Credits earned at U.S. colleges and universities are accredited by the following regional associations:

- Middle States Association of Colleges and Schools
- New England Association of Schools and Colleges
- North Central Association of Colleges and Schools
- Northwest Association of Schools and Colleges
- Southern Association of Colleges and Schools
- Western Association of Schools and Colleges

2. Credits earned from a foreign institution are evaluated by an evaluation agency such as World Education Services Inc. or Educational Credential Evaluators Inc. and a copy of the evaluation sent directly to NCC. For more information concerning WES, please contact the NCC Admissions or Records Office;

3. Courses taken through the military are provided to the College on the official DD295 form or AARTS transcript;

4. The course grade is C or better. Courses taken on a pass/fail basis may be accepted only if the official transcript states that a "pass" grade is equivalent to a C or above;

5. The course content is equivalent to a Northampton course;

6. The course is applicable to the student's Northampton program;

7. Transcript is official (sealed, delivered directly to the Northampton Admissions Office).

A maximum of 45 credits with up to 75% of total program credits may be transferred to Northampton toward an associate's degree (maximum of 50% may be credit by exam).

Admissions determines transferability of credits for new students and change of majors into the allied health majors; the Registrar determines all other transferability of credits.

Transferred credits are added to a student's record upon final verification of enrollment (after the refund period of a student's first semester). Grades do not transfer (no effect on NCC GPA).

Transfer with a Bachelor's degree

A student possessing a baccalaureate degree from a regionally accredited college or university and enrolling at Northampton in an Associate's degree program shall be considered to have completed the general education core requirements except for required courses identified by the program faculty. Check with Admissions Office for approved list of general education courses transferrable into each program.

Transferring Out

More than half of the students at Northampton are enrolled in transfer programs. The College will recommend for transfer those students whose personal qualities and academic achievement indicate that they will succeed at other institutions. Although a C average is usually considered minimal for transfer, the specific average required varies with the selective admissions policy established by each individual institution.

The transfer of specific courses normally depends upon appropriateness of completed work to the intended transfer program. Generally, courses completed with a grade of C or better receive transfer credit. The maximum amount of transfer credit varies by college, but normally 60 to 70 credit hours of applicable course work can be transferred. The final decision regarding admission and the acceptability of transfer credit hours rests with the receiving institution.

A course-by-course reference guide is available for your use in the Northampton Advising and Transfer Office. The guide indicates how individual NCC courses transfer to many of the four-year institutions in eastern Pennsylvania. Some course guides are on the advising and transfer services web page.

The fact that freshman and sophomore requirements vary considerably among senior colleges suggests that students should discuss their transfer plans with both a faculty advisor and an advising specialist, who will help plan a program as near as possible to the requirements of the intended transfer program.

Unless there is no doubt that the student will transfer to a particular college, it is generally advisable to take courses at the College which are as close as possible to those offered at those colleges which might be considered for transfer.

Articulation Agreements

NCC has over 100 articulation agreements with more than 30 colleges and universities. Articulation agreements are signed by two institutions to make the transfer process easier for students. There are several types of articulation agreements that NCC has with various institutions. Most offer the greatest benefit to students who earn an associate degree then transfer to complete a baccalaureate degree. The most common types of agreements are explained below.

Dual Admissions agreements allow students to apply to both NCC and the partner four-year institution. Typically, students are provisionally accepted to the four-year institution provided they meet the admissions criteria outlined in the agreement. Admissions criteria usually require a student to earn an associate degree with a minimum grade point average. Dual admissions agreements are good for students who know before coming to NCC the four-year institution they want to attend.

Core-to Core agreements guarantee that credit earned by students who complete an A.A. or A.S. degree at NCC will be accepted towards the core requirements at the four-year institution. Core requirements are the general education portion of a baccalaureate degree. General education requirements vary among institutions. Students benefit from core-to-core agreements because all of the credit earned from the associate degree is applied to the four-year program without evaluating individual courses. Typically, there are also admissions criteria for transfer students outlined in the agreement.

Program-to-Program agreements are designed to map out the curriculum necessary for students to earn an associate degree at NCC and meet the requirements for a corresponding baccalaureate degree at a four-year institution. The agreements stipulate the exact major courses, general education courses, and electives students should take to make a seamless transfer.

Take your Credits with You Pennsylvania has an innovative statewide transfer system that allows up to 30 foundation credits to be transferred from one participating college or university to another, anywhere in the state. pacollegetransfer.com offers all the information you need to make full use of this transfer system.

List of Institutions with Agreements

- Albright College
- Bloomsburg University of PA
- Cabrini College
- Capella University
- Cedar Crest College
- Centenary College
- Central Pennsylvania College
- Champlain College
- College Misericordia
- DeSales University
- Dickinson College
- Drexel University
- East Stroudburg University of PA
- Eastern Kentucky
- Fairleigh Dickinson University
- Franklin University
- Immaculata University
- Jones International University
- Kaplan College
- Keystone College
- Kutztown University of PA
- Marlboro College
- Marywood University
- Misericordia University
- Moore College of Art and Design
- Moravian College
- Nova Southeastern University
- Old Dominion University
- Peirce College
- Pennsylvania College of Technology
- PSU Lehigh Valley
- St. Joseph's College of Maine

- SUNY College of Environmental Science and Forestry
- Temple University
- Thomas Jefferson University
- University of Delaware
- University of Illinois at Springfield
- University of Pittsburgh
- University of the Arts
- Upper Iowa University
- West Virginia University

Academic Passport

Academic Passport is an agreement between Pennsylvania Community Colleges and the State System of Higher Education (SSHE). It allows community college students who earn an A.A. or A.S. degree with a GPA of 2.0 or higher to be accepted to a SSHE university. It also guarantees the acceptance of up to 60 credits to be applied towards a Baccalaureate degree entitling a student to junior status. The first 45 credits will be used as general education requirements with the additional 15 credits applied to major requirements or electives. Although this agreement allows students to be accepted at the 14 SSHE universities it does not guarantee acceptance to selective admission or enrollment capped programs. Other criteria will be used for these programs.

Programs eligible for Academic Passport at NCC are: Biology, Business Administration, Chemistry, Communication Studies, Computer Science, Computer Information Systems, Education, Engineering, Fine Art, General Studies, Individual Transfer Studies, Journalism, Liberal Arts, Math/Physics, Social Work, Sport Management, and Theatre.

Universities in the PA State System of Higher Education are:

- Bloomsburg University of PA
- California University of PA
- Cheyney University of PA
- Clarion University of PA
- East Stroudsburg University of PA
- Edinboro University of PA
- Indiana University of PA
- Kutztown University of PA
- Lock Haven University of PA
- Mansfield University of PA
- Millersville University of PA
- Shippensburg University of PA
- Slippery Rock University of PA
- West Chester University of PA

Individualized Transfer Studies Program

The Individualized Transfer Studies program at Northampton is designed for students who have a clear intention to transfer to a specific baccalaureate college. The program is unique in that each student works with the four-year institution and designs a curriculum to meet the specific requirements for the major at the baccalaureate institution.

The program consists of a three-part curriculum which includes:

- The current general education core for the associate in arts (A.A.) programs;
- The addition of one Humanities and one Social Science to the general electives;
- The remaining credit hours will align with the requirements at the transfer institution.

The Individualized Transfer Program ensures that students take only those courses at NCC which are required by the four-year institution to which they intend to transfer. This option is intended for students who have identified their baccalaureate institution of choice. The student must meet with an advisor at the four-year institution to pre-plan a program of transferable courses. These Northampton courses will fulfill the general distribution requirements and other courses that are required at the four-year institution. This enables students to get a head start on their baccalaureate degree with an associate's degree from Northampton.

Program Information

All the academic programs within the College are designed to help you meet your goals. Northampton offers programs that will transfer to four-year colleges and universities, as well as those that prepare you to step right into today's competitive work force.

At Northampton, all curricula have a general education component that serves as a solid base for your education. In addition, in each academic program, you will find that the majority of courses give you specific skills and training designed to prepare you to meet your transfer or career objectives.

The College's faculty are specialists who make teaching their first priority. You'll gain knowledge in your chosen subject area from a combination of classroom lectures, group projects, and hands-on laboratory work. You will also benefit from the expertise of members of our advisory committees, composed of successful individuals from the region who advise the College about particular changes in the workplace.

General Education Core Curriculum

The General Education Core Curriculum is an essential component of all degree programs. Courses in the Core fall into two broad categories: Knowledge of Arts, Cultures and the Natural World, and Intellectual and Practical Skills. Students are exposed to a broad range of academic disciplines and fields of study in order to provide a strong foundation of content knowledge and intellectual skills. Certificate programs usually require six credits of general education courses.

Transfer Education

Many of Northampton's courses are designed to transfer to four-year institutions; that is, they contain roughly the same material as similar courses at those institutions. Students who intend to continue their education after Northampton should take as many transferable courses as possible within A.A. or A.S. degree programs. The receiving institution ultimately determines the transferability of courses. It is advisable that students consult early with the Admissions Office of the institution to which they plan to transfer.

Technical Education

Technical education or career education describes a category of courses designed to develop highly skilled graduates prepared for entry-level positions in a particular occupation or group of occupations. Northampton's career education programs, which prepare students for employment immediately upon graduation, usually contain a strong complement of technical education courses. These courses carry credit toward the associate in applied science and associate in general education degrees. They are not designed for transfer.

Developmental Education

Developmental education helps students learn the skills needed for success in college-level courses. These skills include the essentials of reading, writing, and mathematics, and proven strategies for achieving their academic goals.

Developmental education services are provided through these means:

- Placement testing in math, reading, and English determines the eligibility of students for developmental courses.
- Some courses numbered below 100 (0XX) are designed to allow students to remedy specific deficiencies in mathematics, reading, and writing. Among them are PreAlgebra, Elementary Algebra, Intermediate Algebra, Reading Fundamentals, Critical Reading, Basic English, and Chemical Calculations. NOTE: While courses below 100 each carry credit for determining student load and for financial aid, those credits may not be applied to any degree or certificate granted by the College.
- The Learning Center provides tutoring, workshops, and study skills support to promote the academic success of developmental students. Tutoring options include study groups, classroom tutors, Supplemental Instruction, individual appointments, walk-in hours, and online hours.

English as a Second Language

The College supports English language learners by offering courses for college credit through the English as a Second Language (ESL) Department. Students work toward proficiency in reading, writing, and speaking skills. Course work ranges from the beginner level through the advanced level and prepares students to succeed in other college courses or in communities of their choice. Students are supported with tutoring services, a computerized language lab, and academic advising, all with a special attention to the needs of English language learners. Higher levels of ESL can be taken at the same time as other college courses upon the recommendation of an ESL advisor. Students take an ESL placement test to assist with proper placement into classes.

Special Studies and Special Topics Courses

In some semesters the College offers special studies courses, of one to four credits, that are designed to give variety to the present curriculum and reflect current interests. Special studies courses are offered by almost all of the College's academic departments. The specific topic to be covered is announced at the time a special studies course is scheduled, along with any applicable enrollment requirements or prerequisites. Up to 12 credits of special studies courses may be applied to a student's program, insofar as they fit into the program requirements. (A special studies course may be repeated if a different specific topic is offered.) Special studies courses that are later approved as on-going courses in substantially the same form will not be counted toward the 12-credit limit.

Tuition Schedule

Part-time study - Less than 12 semester credits

Full-time study - 12 or more semester credits

1. Residents of sponsoring school districts

Tuition Per Credit Hour:	$79
College Comprehensive Fee:	$15
Technology Fee:	$15
Total Per Credit Hour:	$109

To calculate your tuition and fees cost for one semester multiply the number of credits you anticipate taking by $109.

2. Residents of Monroe County school districts

Tuition Per Credit Hour:	$134
College Comprehensive Fee:	$15
Capital Outlay Fee:	$15
Technology Fee:	$15
Total Per Credit Hour:	$179

To calculate your tuition and fees cost for one semester, multiply the number of credits you anticipate taking by $179.

3. Other Pennsylvania residents

Tuition Per Credit Hour:	$158
College Comprehensive Fee:	$15
Capital Outlay Fee:	$51
Technology Fee:	$15
Total Per Credit Hour:	$239

To calculate your tuition and fees cost for one semester, multiply the number of credits you anticipate taking by $239.

Pennsylvania residents attending Northampton Community College for a program not available at their home community college should ask their community college about the possibility of sponsorship. If approved, the tuition above would be reduced by the amount paid by the sponsor.

4. Out-of-state and foreign residents

Tuition Per Credit Hour:	$237
College Comprehensive Fee:	$15
Capital Outlay Fee:	$88
Technology Fee:	$15
Total Per Credit Hour:	$355

To calculate your tuition and fees cost for one semester, multiply the number of credits you anticipate taking by $355. Pennsylvania residents attending Northampton Community College for a program not available at their home community college should ask their community college about the possibility of sponsorship.

5. Online Education

Tuition and fees for students enrolled in the online courses are the same as for other students at the College. Some special rates apply to EARL and LIBT courses for out-of-county residents

Schedule of Fees

A. Application fee (non-refundable) $25

B. Transcript of academic record fee

Official Transcripts (security paper, signature, embossed seal)

- Three day service - standard U.S. mail service used or picked up by student - $2
- Three day with fax service - standard U.S. mail service usedunofficial copy faxed, official copy to follow by mail - $6
- Same day service - standard U.S. mail service used or picked up by student. 24 hour turnaround - $10
- Same day with fax service; standard U.S. mail service used unofficial copy faxed, official copy to follow by mail 24 hour turnaround - $16

C. College Challenge Examination:

50 percent of the in-county tuition per credit hour for each credit hour attempted and awarded - 50 percent of this fee will be refunded if examination is not passed.

D. The College may charge each student in a course a fee to cover the real cost of materials and services used. The fee must be published in the course schedule so that students may be aware of the fees to be assessed when they register. The fee must be approved by the President.

E. Returned check fee - $25

F. Academic fees

ARTA 151	$20
ARTA 161	$40
ARTA 162	$30
ARTA 261	$60
ARTA 282	$50
ARTA 284	$30
ASEP/AUTC 101/103/104/105/121/125/ 211/221/224/225/226	$10
AUTO all courses except 203	$10
CMTH 120/170/180/182/ 240/245/246/251/252	$50
CULA 145	$62

CULA 150	$115
DENH 103	$606
DENH 109	$20
DENH 150	$65
DENH 210	$277
DENH 250	$30
DMSG 103	$157
EARL 106/217/244 Online CDA Only	$147
ELEC 222	$95
EMGS 115/255	$13
FUNS 212/222 241/242	$45
FUNS 255	$85
HOSP 223/224	$50
MATH 022/026 All sections utilizing the Math Lab	$80
NURS 205/257	$37
PHED 117/217	$40
RADT 111/113/210	$15
SURG 101	$161
SURG 105	$115
SURG 110/115	$207
VETC 101/120/125/210/ 220/228	$15
VETC 225	$50

G. Malpractice liability insurance fee

DENH 103	$16
DIET 101	$13
FUNS 212/222/241/242	$30
EARL 126/128/208/216/ 218/253G	$10
MDAS 101	$13
NURS 101/257	$16
RADT 107/207	$14
SURG 101	$13
VETC 210/230	$70

I. Drug Screening Fee

DSMG 101/220	$32
MDAS 101	$32
NURS 101/223	$32
RADT 107/207	$32
SURG 101	$32

H. Payment Plan fees

Enrollment fee	$35
Late payment fee	$25

Waiver of Fees

The College's $25 application fee may be waived for those applicants who are unable to pay. Students should contact the Admissions Office regarding the waiver policy.

Northampton County residents, age 65 or older, are eligible to receive a tuition and fee waiver upon request and presentation of proof of age for credit courses.

Students in CULA 145 & 150 who are on the dining service meal plan may have their meal plan fee waived.

Course Withdrawal, Refunds, Class Changes, and Adjustments

Students who wish to withdraw from either a course or the College must receive official authorization from the Records Office. Failure to withdraw officially may result in the recording of an F grade. A student who is asked to leave the College for misconduct or delinquent attendance will receive no refund of tuition or fees.

Students who withdraw with the approval of the Records office prior to the beginning of a semester and the date specified in the College Calendar, will be entitled to a 100 percent refund (or adjustment) of tuition and fees, less the non-refundable admissions deposit and any amounts owed to the College for fines, returned checks and other charges and fees.

In addition, a student who withdraws during the following specified periods will be entitled to the applicable refund (or adjustment) of tuition and fees, less the admissions deposit, student fees, and any amounts owed to the College per the schedule below. Specified dates for each semester are listed in the College Calendar.

All refund payments will be made payable to the student except for a) contractual third party payments - refund payable to the third party named, and b) excess parents plus loan funds - refund payable to the parent named

<u>Refund Rates</u>

- 75% - First week of class or equivalent for non-standard session

- 50% - Second week of class or equivalent for non-standard session
- 25% - Third week of class or equivalent for non-standard session

  * A standard session is considered as 15 weeks.

Room and Board: A separate refund schedule applies to housing and meal plan charges. This schedule is published in the Residence Life Handbook and made available to students in the Office of Student Activities and Housing.

Please note that a drop or withdrawal does not absolve a student's financial responsibility for his/her educational expenses. The student is responsible for payment of charges outstanding after the drop or withdrawal is processed and charges are adjusted.

Special Note to Financial Aid Recipients:

In accordance with federal and state guidelines, a drop or withdrawal may reduce a student's

financial aid award. As a result, the student may owe a balance to the College. Any amounts owed after adjustment of the financial aid award is billed to the student.

In the event of serious injury or illness which is certified by a physician, the student will be granted a full tuition credit, if that documentation is received at the time the student withdraws from the College. Such credit may be applied toward tuition costs only upon his or her return to the College. This credit will be cancelled if it is not used within a one-year period after the student has taken leave from the institution. Tuition credit will not be granted if a student received academic credit from courses in which he or she is enrolled.

Students called to involuntary active military duty may be eligible for a full tuition credit or full tuition refund upon receipt of the appropriate application and supporting documentation as specified at the time of withdrawal. Tuition refunds are subject to financial aid regulations.

Financial Obligation

Payment for tuition and fees is due, in full, by the semester tuition due date published in the academic calendar. No student will be considered registered until all obligations have been fully satisfied. In order to receive a refund or adjustment of charges, a student must complete an official course withdrawal during the stated refund periods. The college reserves the right to cancel a student's registration if full payment is not received by the due date established each semester.

Financial aid must be pending on the student account in order to be deducted from the balance due on the tuition and fees bill. Expected financial aid that is not pending by the tuition due date cannot be deducted.

Students who do not meet their financial obligations may not be permitted to register for a subsequent semester, receive official transcripts or grades, or participate in graduation. Students may also incur additional collection costs and legal fees.

Tuition Payment Plan

NCC offers a tuition payment plan option that spreads payment for tuition, fees, room and board throughout the semester. Enrollment in the payment plan is due as follows:

- Fall - July 15
- Spring - December 15
- Summer I - April 15
- Summer II - April 15

Re-enrollment must be repeated each semester. Contact the bursar's office for additional information.

Financial Aid

Since its founding, Northampton Community College has been committed to offering excellence in education at a moderate cost. While NCC adheres to the principle that students and their families have the primary responsibility to pay for college costs as their means permit, financial assistance programs represent a bridge between a family's ability to pay and the cost of higher education. Last year, the College awarded approximately $30 million in financial assistance to over 6,500 full and part-time students. The NCC Financial Aid Office administers many types of financial assistance including federal, state, private and institutional financial aid programs to help students meet their educational costs.

Most financial aid awards are made on the basis of financial need. A student's financial need is determined by deducting the student's expected family contribution (EFC) from the cost of education. To qualify for financial aid, you must demonstrate financial need while maintaining academic progress. Financial aid awards must be applied to educational expenses such as tuition, fees, books, room, board, supplies, transportation or other educational costs.

Financial aid awards may consist of grants and/or scholarships (funds which do not have to be repaid), loans (low interest loans which require little or no payment while a student is attending college on at least a half-time basis), employment (money which a student earns through work either on or off-campus) or a combination of these sources.

Foundation Scholarships

To encourage and assist students, NCC also offers over 500 scholarships to students who meet donor requirements. Funds for scholarship assistance are provided through the efforts of the Northampton Community College Foundation and the generosity of community leaders and friends of the College.

The NCC Foundation was established in 1969 as a private, non-profit corporation to support educational programs and activities that cannot be funded through the College's regular

income sources. Northampton's scholarship program is the largest among community colleges in Pennsylvania.

Students must complete the financial aid application process to be considered for scholarships. A list of available scholarships, and any additional information required, can be viewed on the College's Web site.

How to Apply for Financial Aid

To apply for financial aid at Northampton Community College a student must:

1. Complete and submit an NCC Financial Aid Information Form available at www.northampton.edu/Admissions/Financial-Aid.htm
2. Complete and submit a Free Application for Federal Student Aid (FAFSA) via the Web at www.fafsa.gov (A student or parent can apply for a PIN number to electronically sign the FAFSA at www.pin.ed.gov)

New students should not wait to be admitted to NCC before applying for financial aid. Returning students must annually reapply for financial aid for each academic year a student wants to be considered for financial aid.

The Northampton Community College financial aid priority application deadline is March 31st. Students who complete their financial aid application by the priority deadline will be notified of their eligibility for aid before tuition is due for the following Fall semester. The priority application deadline for the Spring semester is October 1st of the previous year. While financial aid applications are accepted throughout the year, it is important to meet the priority application deadlines if a student expects financial aid to help pay his/her semester tuition and fee charges by the tuition due date.

Eligibility

To receive aid, a student must meet the following eligibility requirements:

1. Be a United States citizen or eligible non-citizen with a valid social security number;
2. Be enrolled in an eligible academic program;
3. Be a high school graduate, have a recognized General Equivalency Diploma (GED) or meet the "ability to benefit" guidelines established by the federal government;
4. Be an undergraduate student who has not previously earned a bachelor's degree (for most types of aid);
5. Not be in default on any previous student loan nor owe a repayment on an adjusted federal grant;
6. If male and age 18-25, be registered for Selective Service
7. Comply with Northampton Community College's Academic Progress Policy requirements.

Student Employment

NCC offers on and off-campus jobs to students who have financial need through the Federal Work Study Program. A student's earnings under this program are not credited to the student's account, but are paid to the student every two weeks. Students are responsible for securing their job by interviewing with the job's supervisor. A list of available positions can be found on the Work Study link on the Financial Aid page of the NCC Web site. Students who are interested in community service positions should contact the Work Study Coordinator in the Financial Aid Office.

Veteran's Benefits

We are proud to be a Veterans Administration (VA) approved Institution of Higher Learning (IHL). Veteran Affairs in the NCC Financial Aid Office handles certifications of enrollment to the VA for the Montgomery GI Bill and other education benefit programs. It is a veteran's or qualifying dependent's responsibility to notify Veteran Affairs of enrollment, changes in enrollment, termination of student status or changes of address and phone number. Failure to do this could jeopardize current or future benefits. Questions about VA benefits and programs should be directed to the Financial Aid Office at 610-861-5508.

Academic Progress Policy

All students must be making satisfactory academic progress toward a degree, certificate or specialized diploma in order to establish or renew eligibility for participation in any of the Federal or State financial aid programs. The Higher Education Act requires institutions to establish academic progress standards that contain qualitative and quantitative measurements of progress. The act also requires a maximum time frame for completion of the program.

The provisions included in Northampton's academic progress policy are based on federal requirements and are applicable to all students applying for federal aid including the Federal Parent Loan (PLUS). Copies of the policy and the appeal procedure are available at the Financial Aid Office and are distributed to all financial aid recipients with their financial aid award letter.

I. Completion Rate and Grade Point Average

A student must successfully complete seventy-five percent (75%) of all credits attempted at NCC.

Students may receive financial aid for repeated courses, but the credit hours earned for the course may be counted only once.

A student must maintain a minimum required grade point average based on the total number of credits attempted including transfer credits. Total credits attempted include courses in which a student receives a grade of A, A-, B+, B, B-, C+, C, C-, D+, D, F, P, N, R, W, or I.

Total Credits Attempted Including Transfer Credits	Minimum GPA Required
9-16	1.50
17-30	1.75
31-45	1.90
46+	2.0

II. Maximum Time Frame

For federal financial aid eligibility students must complete their program within a maximum time frame not to exceed 150% of the length of the educational program. This includes all semesters of enrollment even if no aid was received. Once a student attempts more than 150% of the credits that it normally takes to complete his/her program of study, he/she is no longer eligible for financial aid.

Example:

Length of Program Maximum	Time Frame
60-credit program	90 credits attempted
30-credit program	45 credits attempted

Note: If an exception is made to the maximum time frame requirement due to a change in major, once the student attempts more than 120 credits (including transfer credits) for a two-year program or more than 60 credits for a one-year program, he/she is no longer eligible for financial aid. Students who have completed the required number of credits for their program of study and are applying for financial aid must submit a graduation plan to the Financial Aid Office. Additional financial aid is contingent upon approval of the graduation plan.

Questions about this policy should be directed to the Financial Aid Office (610-861-5510).

Appeal Process

Students who do not meet the **Satisfactory Academic Progress** requirements have the right to appeal. All appeals must be in writing and must be submitted within **45 days** of the date of the notice of denial. The appeal form should be submitted to Northampton Community College, Financial Aid Office, 3835 Green Pond Road, Bethlehem, PA 18020.

The appeal should include an explanation of the extenuating circumstances which resulted in the student's inability to meet the requirements. Information about the student's plan to make up any deficiencies should also be included.

Note: PA State grant eligibility is based on standards set by the State agency. Institutional appeals do not cover State grants. Loss of State grant eligibility may be appealed directly to the Pennsylvania Higher Education Assistance Agency (PHEAA) in cases of illness or death in the family.

Evaluation

An evaluation of academic progress will be done after the end of the spring semester or when students reapply for financial aid. Students who do not meet the requirements will be notified within ten days of the completion of the evaluation. An evaluation will be done at the halfway point of the program for students enrolled in one-year programs.

PHEAA has its own standards of progress for state financial assistance.

Federal Financial Aid Recipients Who Withdraw

The 1998 Reauthorization of the Higher Education Act requires the College to calculate a return of federal student aid funds for students who withdraw (officially or unofficially) from all classes on or before the 60 percent attendance point of the semester. Using the Federal formula, the percentage of the semester attended is used to calculate the amount of the student's earned versus unearned federal student aid funds. The number of calendar days spent attending classes is divided by the number of calendar days in the semester. The unearned portion of federal student aid funds will be returned to the appropriate aid program. Funds are returned in the following order:

- Unsubsidized Direct Loan
- Subsidized Direct Loan
- Perkins Loan
- Parent Loan for Undergraduate Students (PLUS)
- Pell Grant Program
- Academic Competitiveness Grant
- Supplemental Educational Opportunity Grant (SEOG)

Students receiving financial aid who withdraw from all of their classes may not receive further financial aid disbursements, may lose some or all of the aid that has already been disbursed to their account and are responsible for payment of any balance due after the required return of unearned federal student aid funds. Students who stop attending all classes without officially withdrawing will be subject to the return of federal funds at the end of the semester based on the 50 percent point of the semester.

Notification of Award

Students who have their financial aid applications completed by the priority application deadline will be notified of their eligibility for aid by the tuition due date. They will receive a financial aid award letter. Included with the award letter are instructions, conditions governing awards and disbursement information about how and when students will receive financial aid funds.

Financial Aid Information

Financial aid application forms and information are available from the NCC Financial Aid Office in the Student Enrollment Center at the Main Campus, the Enrollment Office at the Monroe Campus, the Fowler Family South Side Center, and on the Financial Aid page of the NCC Web site at www.northampton.edu/Admissions/Financial-Aid.htm. You can call the NCC Financial Aid Office at 610-861-5510.

Policies: College / Academic

Academic Probation Policy

Northampton Community College is committed to the academic success of its students. Students who do not achieve a cumulative grade point average in accordance with the following standards will be placed on academic probation:

Cumulative Attempted Credits	Cumulative GPA
12-25	1.40
26-37	1.60
38+	1.80

Students placed on academic probation are subject to the following conditions:

- Students must meet with an academic probation counselor and develop a plan for improved academic performance.
- Students on probation for a first semester will be limited to maximum enrollment of 13 credits. Additionally, students may have some restrictions placed on them regarding the types of courses they take. The academic probation counselor will recommend action based on the meeting with the student and after review of the academic record. This action may include requiring students to take specific courses.
- Any student who has been placed on academic probation for two consecutive major semesters may be academically suspended for up to one academic year. If a student is academically suspended, he/she may appeal the suspension. A committee comprised of an Advising staff member, the appropriate Academic Dean, one faculty member from each academic division and the Vice President for Student Affairs or his/her designee will review the appeal and make a recommendation to the Vice President for Academic Affairs whose decision is final. Appeals must be made at least 6 weeks prior to the start of a fall semester, or 5 college days prior to the spring semester.
- Students who are academically suspended more than once and who do not make academic progress upon return to NCC will be dismissed from the institution for a minimum of three years.

Academic Recognition

Dean's Honors List - students who complete a minimum of six credit hours per semester, and who achieve a semester grade point average of not less than 3.50, will be carried on the Dean's Honor List as a mark of academic distinction.

Graduation Honors - students who complete a minimum of 30 credits hours of coursework in the graduation major at Northampton, and have a graduation grade point average of 3.50 or higher in any degree, certificate or specialized diploma will be graduated with honors. The graduation grade point average includes only those courses used toward the graduation major.

Academic Restart Policy

The Academic Restart policy is intended for students who attended NCC in the past and compiled an unsatisfactory academic record. This one-time-only option allows students to redirect their academic goals and permits students to reset the NCC Grade Point Average and the Cumulative Credits earned.

Eligibility is determined by:

- The student has not enrolled at NCC for at least three (3) consecutive academic years and has not earned an NCC degree.
- The student has a previous cumulative grade point average below 2.0.
- The student has not been granted the Academic Restart previously.
- The student has earned a grade point average of 2.0 or higher in a minimum of 12 credits since returning to NCC.

The previous record will remain on the transcript; however, it will not be used in the computation of the new grade point average. Students may use non-developmental level courses they completed with a grade of C or better prior to Academic Restart toward completion of graduation requirements, but grades for these courses will not affect grade point average calculation.

Interested students must complete an application and meet with a member of the Advising Office.

Academic Restart will be recorded on the student's transcript upon certification by the Advising Office.

Note: Given federal and state student aid regulations, the student is not relieved of academic progress requirements for financial aid eligibility, even if restart approval is granted.

Some colleges will not accept courses prior to Academic Restart.

Advanced Placement Policy

All students may earn credit through the 1) College Level Examination Program (CLEP), 2) Excelsior Examination Program, 3) NCC challenge examinations, 4) Advanced Placement Program of the College Board, 5) military and non-traditional courses approved by the American Council on Education (ACE), and 6) credit for life experience. A student must be enrolled in NCC courses to have such credits applied to the NCC transcript. All external examinations, ACE approved courses, and credit for life experience will be equated to NCC courses by appropriate department faculty. Criteria for NCC challenge exams and life experience assessment will be reviewed on a periodic basis to insure currency with existing course requirements. Students wishing more information on any of the above, except CLEP and the NCC challenge examination, should contact the Admissions Office. CLEP is administered through the Library and challenge examinations through the Records Office.

Eligibility

All new applicants and currently enrolled students are eligible to apply for credit in any of these programs. Any form of advanced placement credit earned is added to the student's transcript upon final verification of enrollment (after the refund period of a student's first semester).

Credit Limits

A maximum of 30 hours of credit will be granted through any of these programs or any combination thereof. In accordance with degree requirements, no more than six of the last 15 hours of a degree may be credit earned under this policy.

Record of Credits

Advanced placement credit earned will be entered on the student's transcript with specific reference to the test or method used for granting credits

Departmental Challenge Exams

NCC departmental challenge exams are available for certain designated courses. Subject to faculty approval, students may challenge a course only one time and may not challenge a course in which they have been enrolled beyond the first three weeks of the semester, or the equivalent time in a shorter course. Courses must be challenged in sequence. If a course has a prerequisite, that prerequisite must be fulfilled through course work or credit by examination acceptable to the College before a challenge examination may be taken. Internships and courses numbered 0XX will not be available for challenge. Credit for NCC challenge examinations win be awarded for scores determined by faculty to be at a passing level. For information about the availability of departmental challenge examinations, students should contact the Records Office.

Credit through CLEP or Excelsior College

Students may take the CLEP examinations at either NCC Library or a national testing center. Excelsior examinations may be taken at any Sylvan Learning Center after test registration has been completed through Excelsior College. Credit for CLEP tests and Excelsior exams will be awarded for scores recommended by the American Council on Education (ACE) for the former and Excelsior College for the latter, unless a Northampton department performs its own research and determines a more appropriate cut-off score.

Credit for Advanced Placement exams taken through the College Board

The College awards credit to students who successfully completed Advanced Placement (AP) courses and who score three or above on the AP examination. No grades will be awarded. Department faculty will determine courses to be accepted, credit to be awarded, and equivalency of each course to NCC courses. The Admissions Office will maintain a list of Advanced Placement courses approved by faculty.

Credit for Military and Non-Traditional Training

Credit will be awarded based on recommendations by the American Council on Education (ACE), unless a Northampton department performs its own research and determines a more appropriate recommendation.

Credit for Life Experience

Criteria for each course will be developed (if appropriate) by the academic department to establish the proof of knowledge/learning gained by experiences outside the classroom. Credit will be awarded upon faculty evaluation of presented portfolio. The Admissions Office will have a list of portfolio criteria needed for assessment of student's life experience.

Equating Credits

All methods of advanced placement will be equated to NCC courses or general electives as approved by department faculty. The Admissions and Records Office will maintain a list of approved equivalencies. Students who have successfully completed any of these advanced placement methods prior to or while attending NCC may request an evaluation of credits earned.

Grades

Only credits will be recorded on the transcript for any advanced placement credit awarded; no grade will be given. Students who earn credit through this policy and later take the equivalent course at NCC will be given credit and grade earned only for the NCC course.

Appeals

Academic Appeals

Appeals of grades, appeals of penalties for academic dishonesty, and appeals of actions related to the policy on Professional Conduct, will begin informally through

discussion between the student and the faculty member involved and will proceed, if continued, through a series of formal steps culminating in a hearing before an Academic Appeals Committee, which will present its findings and recommendations for a decision to the Vice President for Academic Affairs. No final recommendation can be made without a quorum. The decision of the Vice President for Academic Affairs will be final, unless it differs from that of the committee; in such cases, the student may appeal to the President, whose decision is final.

The appeals procedure is a student-motivated one; the responsibility to keep the action in progress rests primarily with the student.

Academic Appeals Committee

The Academic Appeals Committee reviews matters related to appeals of grades, appeals of penalties for academic dishonesty, appeals of actions related to the policy on professional conduct, and waivers of graduation requirements. The Academic Appeals Committee shall be composed of the following: 5 full-time faculty members (at least two shall teach at the Monroe campus) elected to a two year term at large from Academic Affairs, one Student Services faculty member elected by that cluster, and four students (at least 2 shall attend classes at the Monroe campus) appointed for a one year term by the Student Senate and/or Monroe Student Governance.

A quorum shall consist of the following: 7 persons - including 3 faculty members, 2 students, one student services faculty member and a dean (appointed by the President to hear the case). The Registrar may be asked to attend as an ex-officio member.

Appeals Not Covered Under Other Policies

Students may appeal a decision made by an administrator responsible for a department or division to the Vice President for Academic Affairs or Vice President for Student Affairs. The Vice President's decision will be final unless stated otherwise in specific College policy.

Academic Honesty - Policy and Appeal Procedure

Northampton Community College considers honesty to be essential to the learning experience. Academic honesty is one of the values that we expect members of the NCC community will apply in their work on this campus and take into their lives beyond NCC. Violations of academic honesty harm the learning experience and violate the expectations and values that we hope the NCC community embraces. We expect all members of the NCC academic community to conduct themselves and their work ethically and honestly.

Student Responsibilities

- Students are solely responsible for their work and for making sure that their work represents their own honest efforts to meet the goals of the course.
- They are responsible for learning and following the policies and expectations of the college and for understanding the consequences of actions that violate the policy on academic honesty.
- They are responsible for showing that the work they present is theirs in whatever ways are deemed appropriate by the faculty for the course.

Faculty responsibilities

- Faculty members are responsible for demonstrating academic honesty in their work.
- They are responsible for making their expectations related to academic honesty clear to their classes including which activities and resources are allowed and the consequences for violations in their courses.
- They are responsible for communicating about violations of the academic honesty policy to students and their division Dean and to the Vice President for Student Affairs.

Academic Honesty Violations

Violations of the academic honesty policy include any actions that attempt to gain academic credit for work that does not represent the student's own efforts and knowledge. They include, but are not limited to the following situations and examples:

- Cheating on examinations and quizzes-
  - Using notes, materials, and/or mechanical, electronic or technological devices not authorized by the instructor during examinations or quizzes.
  - Providing or receiving help on an examination or test in a manner not authorized by the instructor.
  - Buying, selling, improperly obtaining, or using any tests or examinations.
  - Posing as another student or allowing another student to pose as you when taking an exam or quiz.
  - Altering or adding answers on exercises, exams, or quizzes after the work has been graded.
- Plagiarizing -
  - Using the ideas or words of others without appropriate quotation and documentation that acknowledges the source or sources -- in other words, presenting someone else's work as one's own.
  - Copying, exact words, phrases or sentences without quoting and giving credit to the source.
  - Using a paraphrased version of the opinions, work, or ideas of others without giving credit.
  - The wrongful appropriation of all or part of someone else's literary, artistic, musical, mechanical, or computer-based work.

    - Copying all or part of an assignment, (a research paper, lab report, or workbook) from another person or resource and presenting it as your own work.
- Purchasing an assignment and submitting it as your own work.
- Falsifying or inventing information, data or research material. Altering or forging records or submitting false records as part of course work or making false statements, excuses, or claims to gain academic credit or influence grading.
- Listing sources that you never consulted.
- Gaining unauthorized access to another person's or the College's computer system or tampering with or copying programs, files, data or access codes associated with coursework.
- Tampering with or damaging the work of others or preventing others from completing their own assignments.

Penalties

When a faculty member believes that a student has committed acts that violate the academic honesty policy, he or she will advise the student of the offense and the penalty imposed.

A faculty member may apply one of the following penalties:

- A written warning, with the requirement that the assignment be redone within the instructor's specified time. (Faculty members are encouraged to report the incident and action to their division Dean and to the Vice President for Student Affairs using the Academic Dishonesty Report Form.)
- A failing grade for the assignment or test. (Faculty members are encouraged to report the incident and action to their division Dean and to the Vice President for Student Affairs using the Academic Dishonesty Report Form.)
- An "F" grade for the course.
    - If a faculty member issues an "F" grade in the course as a penalty for academic dishonesty, he or she must send a written report of the instance of cheating or plagiarism and the action taken to the division dean and the Vice President for Student Affairs using the Academic Dishonesty Report Form.
    - If the faculty member has given an "F" grade for the course as a penalty for a violation of academic honesty, a student may not withdraw from the course while the matter is under appeal or if it is resolved that the "F" grade stands.

Appeal procedure-charges of academic dishonesty

If a student wishes to appeal a charge of academic dishonesty or the penalty imposed, the student should follow these steps:

Step 1

- If the student wishes to respond to the accusation, he/she must make an appointment and meet with the faculty member at a formal meeting within ten working days of the notification.
- If the student and faculty member accept a specific resolution offered by either of them, the matter shall be considered closed.
- If such a resolution cannot be reached, the student may formally appeal the action of the faculty member within three working days after the meeting with the faculty member. Appeal forms and procedure will be available in the Office of the Vice President for Academic Affairs.

Note: working day is defined as any day when a full schedule of classes are in session (this excludes Saturdays and Sundays).

Step 2

- Within three working days of the meeting with the faculty member, the student may request in writing that the appropriate dean should call the meeting within five working days to include the student, faculty member, and program director, if any.
- After this meeting, the dean will send all parties involved a written recommendation within three working days.
- Students who do not agree with the recommendation in Step 2 may appeal to the Academic Appeals Committee within three working days. This appeal must be submitted, in writing, to the Vice President for Academic Affairs.

Step 3

- Students initiate appeals to the Academic Appeals Committee (within three days of notification of outcome of Step 2) by requesting a hearing through the Office of the Vice President for Academic Affairs. A hearing will be scheduled as quickly as possible, and all parties to the appeal will be informed of the date, time, and place of the meeting. The faculty member will delay recording the grade for the work in question until the appeal is decided.
- The Academic Appeals Committee will decide whether evidence sustains or does not sustain such charges of academic dishonesty, and whether the penalty is consistent with the stated policies and recommend a decision to the Vice President for Academic Affairs, whose decision is final unless different from the recommendation of the committee; in such cases, the student may appeal to the President, whose decision is final.
- If evidence does not sustain such charges in the opinions of the committee and the Vice President for Academic Affairs, all records in the student's file related to this charge will be expunged. If evidence does sustain the charges and the appeal relates to the penalty, the committee may recommend the following actions:

1. The assigned penalty will be supported.
2. The faculty member may be asked to reconsider the penalty in question.

- The Vice President for Academic Affairs will communicate in writing a decision to the student, faculty member, and the Vice President for Student Affairs no later than three working days after the hearing.

Recurring violations of academic dishonesty

If the student is reported to have violated the Academic Honesty policy repeatedly, the Vice President for Student Affairs shall request the Discipline Committee to consider the student's dismissal from the college.

Attendance Policy

Class attendance and engagement in the learning process are critical factors in determining students' success in their courses. NCC students are expected to attend all class sessions of courses in which they are enrolled, and are responsible for all material presented in class sessions of these courses.

However, a student who misses class more than twice the number of weekly meetings of the class* (or the equivalent in short term courses) may be withdrawn from the course by the instructor. Students who are withdrawn for poor attendance will receive a grade of W. Faculty may issue a withdrawal through the first 90% of the semester (14th week or equivalent in short term classes*). After the 90% period, a student may not withdraw or be withdrawn.

In an internet-based online learning course, a student is considered to have missed the equivalent of more than twice the number of weekly meetings of a traditional classroom course in a consecutive two-week period if there has been no participation by the student in the class through submission of assignments, participation in discussion forums or contact with the professor in any way during the period.

Students who are withdrawn from the class for lack of attendance may appeal the enforced withdrawal to the instructor. If the Instructor agrees to reinstate the student, he/she will be required to complete a reinstatement form and return it directly to the Vice President for Student Affairs. If the appeal is denied, the student may speak with the appropriate academic dean and/or the Vice President for Student Affairs. Further discussion may take place with the faculty member, but the final decision on the withdrawal rests with the faculty member.

* Clinical and lab courses my have a different application of this attendance policy and it will be so noted on each syllabus.

Audit Policy

A student may apply to audit a course. Auditing students are not required to take examinations and do not receive grades or earn credits for the class.

Enrollment for the purpose of auditing shall be on a space available basis. Priority in class enrollment shall be given to students desiring to take courses for credit; therefore enrollment for audit purposes will only be permitted during the first week of the semester. Auditors must be eligible for admission to the College. A student can only audit a course one time.

Auditors pay standard tuition and fees. The student should identify himself to the instructor as an auditing student and discuss parameters of participating in classroom discussions. If a student wants to change from audit to credit, all prerequisites must be met. The change must be made by the end of the refund period for that course with the consent of the instructor. Instructors may request of the Vice President for Student Affairs that an auditor be officially withdrawn from the course if the auditor is interfering with the learning process.

Class Load

A minimum full-time class load is 12 credit hours. Students registering for 12 or more credit hours in either the fall or spring semester or for 8 or more in any summer session must have approval from an academic advisor. Students will not be allowed to take more than 19 credit hours for either the fall or spring semester or more than 13 credit hours in the summer unless required by their academic program. Exceptions will only be granted for students who have a G.P.A of at least 2.75, advisor recommendation, and Registrar approval.

Completing an Associate's Degree in Two Years

The number of credit hours that a student must carry in order to complete a program within a two-year period will vary depending upon his or her major field of endeavor. Please consult the Catalog program description for the variation in credits required by each program. Students who elect to pursue a minimum full-time load (12 credits) each semester cannot graduate in two years unless they complete significant credits during the summer. Additionally, if students must take developmental courses, it is likely that their timeframe will be lengthened. Students are encouraged to review all this information with their academic advisor and to discuss the option that presents the strongest opportunity for academic success.

Classification of Students

Students attending the College will be classified as follows:

- **Freshman:** Successfully completed fewer than 24 credit hours
- **Sophomore:** Successfully completed 24 or more credit hours

Final Examinations

All courses will end with some "culminating experience," a final examination or project-based assessment that integrates the learning of the whole semester. Each course will be assigned a time during the final exam period, at which a final exam may be given or other "culminating experience" be assigned a deadline. Except for performance-, production-, and critique-based "culminating experiences," which may run the course of several weeks, no "culminating experiences" may be expected of students before their scheduled final exam times.

Faculty is encouraged to use the last week of instruction for assimilative or integrative activities wherever instructionally appropriate. No tests of any kind, except for short (less than 15 minutes) quizzes or science lab practicals, may be given during the last week of instruction.

Grading

Grading System

A plus/minus grading system is used at the College. Using the plus/minus system is an option for faculty, not a requirement.

Grades will be available online at Spartan Net at the end of each regular semester. At the end of the seventh week of classes, faculty will submit to the Records Office the names of all students whose performance in a particular course to date puts them at risk of failing the course. The Records Office will communicate this information to those students by the end of the eighth week of the semester.

Grade	Evaluation	Points/Credit Hour
A	Superior	4.0
A-		3.7
B+		3.3
B	Above Average	3.0
B-		2.7
C+		2.3
C	Average	2.0
C-		1.7
D+		1.3
D	Below Average	1.0
F	Fail	0.0
P	Pass	
I[1]	Incomplete	
N	Not released	
R	Released	
X	No grade submitted	
IP	In progress	
L	Audited	
T	Transfer Credits	
Z	Successful completeion of course, challenge process	
TZ	Credits accepted through articulation agreement	
W[2]	Withdrawal	
WP[3]	Withdrawal, Passing	
WF[3]	Withdrawal, Failing	
Grade*	Course repeated - this grade IS NOT included in GPA	
Grade**	Course repeated - this grade IS included in GPA	

1. An incomplete grade (I) is given only when the student had obtained, in advance, the permission of the instructor to postpone completion of specific course work for a valid reason. (Refer to Incomplete policy.)

2. A student may withdraw from a class in which he or she is enrolled through the 90% point in the instructional period.

3. Through summer 2007, students who withdrew from a course through the first 2/3 of the instructional period received a grade of W. After that point, and through the end of the semester, student received a grade of WP or WF. The grade of WF counted as a grade of F in the student's grade point average.

Grade Changes

Any grade changes by a faculty member must be made within five months of the end of the semester in which the original grade was issued. Withdrawal from a course is a final action. No change to the final grade is permitted in the case of a W.

Grade Appeal

Grades are assigned by the course instructor. Students may appeal a final grade only in the cases where they are alleging a serious computational error in the grade or in cases where they allege unfair treatment in the application of a course policy or procedure.

When a student wishes to appeal a grade, final or part of a semester's work, he or she must follow the appeal procedures for grades, and those involved in the appeal may recommend only the following actions:

- The assigned grade may be supported.
- The faculty member may be asked to *reconsider the grade* in question.

Appeal procedure-grades

Step 1

- If a student wishes to appeal a grade, he or she must make an appointment and meet with the faculty member within ten working days. To appeal final grades or grades assigned in the last week of the semester, the student must make an appointment and meet with the faculty member at a formal meeting during the first week of the next regular semester unless arrangements can be made to meet prior to that time.
- If no agreement can be reached, the student may file an appeal in the Office of the Vice President for Academic Affairs *and proceed to Step 2*.

Note: working day is defined as any day when a full schedule of classes are in session (this excludes Saturdays and Sundays).

Step 2

- Within three working days of the meeting with the faculty member, the student may request in writing that the appropriate dean should call the meeting within five working days to include the student, faculty member, and program director, if any.
- After this meeting, the dean will send all parties involved a written recommendation within three working days.
- Students who do not agree with the recommendation in Step 2 may appeal to the Academic Appeals Committee within three working days. This appeal must be submitted, in writing, to the Vice President for Academic Affairs.

Step 3

- Students initiate appeals to the Academic Appeals Committee (within three days of notification of outcome of Step 2) by requesting a hearing through the Office of the Vice President for Academic Affairs. A hearing will be scheduled as quickly as possible, and all parties to the appeal will be informed of the date, time, and place of the meeting. It is the responsibility of the student and the person(s) whose decision(s) is (are) being appealed to provide the committee with evidence, documentary or otherwise. The appellant may be accompanied by a college friend.
- Having heard the cases of appellant and objects of appeal, the committee will deliberate in private and recommend a decision to the Vice President for Academic Affairs, whose decision will be final unless different from the recommendation of the committee; in such cases the student may appeal to the President, whose decision is final.
- The Vice President for Academic Affairs will communicate in writing a decision on the appeal no later than three working days after the hearing.

Graduation

Eligibility

To be eligible for graduation, a student must meet the minimum number of credits for a degree, certificate, or specialized diploma and must earn a graduation GPA of 2.00 (only courses for the credential are calculated.) Developmental course work does not count towards graduation requirements. This policy cannot be appealed.

Honors at Graduation

See Academic Recognition.

Waiver of Graduation Requirements

To waive graduation requirements, a student must secure a form from the Records Office and delineate complete justification for such a request. The student must submit that completed form to the Records Office. The Records Office then submits the form for approval to the program dean/director, the instructor, and the dean/director responsible for the course(s) for which waiver is sought. If there is any disagreement among the three approving parties, the request will automatically be referred to the Academic Appeals Committee for disposition. The Academic Appeals Committee will recommend approval or disapproval of the petition.

Incomplete Policy

An incomplete grade of I is issued only at the student's request with the permission of the instructor to allow completion of specific course work the student did not complete due to valid, unforeseen circumstances. These circumstances include: serious illness of the student, serious illness or death in the student's immediate family, etc. The student must request the Incomplete grade from the professor before the last class meeting of the semester and the professor may approve or deny the request. If the request is approved, the professor will outline, on the incomplete form, the work the student must complete.

The deadline for completing the course requirements is no more than five months - or sooner as designated by the professor - after the date grades were due in the semester in which the I grade was issued. The professor will designate that the incomplete grade become a specific letter grade if the work is not completed. This grade may not be a withdrawal (W). An Incomplete grade in a prerequisite course may make a student ineligible to take the subsequent course.

Placement Testing

For detailed information, see Placement Testing.

Prerequisite Policy

Students are required to have fulfilled the prerequisites for each course in which they enroll for credit. If a student enrolls in a course without having fulfilled the prerequisites, the instructor or the Registrar may withdraw the student from the course.

A prerequisite may be waived in special circumstances by the course instructor or the dean in the absence of the instructor, in response to a student's request. If the waived prerequisite is a required course in the student's program, the student must satisfy the requirement with a course approved by the dean.

Repeated Courses

The College allows a student to repeat any course once for any reason. This is subject to availability in limited enrollment courses (see special policy for re-admission, re-entry into limited enrollment courses). Students in developmental courses may repeat a course twice, if necessary.

A student, who fails to earn credit or to satisfy a grade prerequisite after enrolling in a course for the second time (or third time if it is a developmental course), may not register for the course for two academic years after the last attempt. If a student enrolls in a class more than the allowed number of times without permission, the student can be removed.

Grades for all repeated courses will appear on the student transcript. The credit hours for the course may be counted only once unless the course description states otherwise. Only the highest grade earned will be used in calculation of the cumulative grade point average.

Appeals to this policy may be made to the Director of Advising & Transfer Services who, in consultation with the appropriate faculty, will make a decision. Further appeals can be made to the Vice President for Academic Affairs and that decision shall be final.

Special Policy for Re-Admission, Re-Entry into Limited Enrollment Courses

Any student who does not successfully complete a major course* in a program which has limited enrollment may retake that course only if space is available. Priority will be given to students entering the program for the first time and to those students who have successfully completed the core courses and have maintained continuous enrollment.

* A major course is a course which carries the prefix of the student's program.

Withdrawals

Schedule Change and/or Withdrawal

A change of class from one class section to another is accomplished only with approval of the Records Office. Failure to seek official approval may result in the recording of an "F" grade.

No courses may be added to a class schedule after the first week of a semester or equivalent time in short-term classes.

Students may withdraw from classes in which they are enrolled through the 90% point of the semester (the end of the 14th week in a 15 week semester, or equivalent in courses that run on a non-standard schedule) and an instructor may issue a withdrawal for poor attendance through the same period. Any student who officially withdraws, or is withdrawn by the instructor during this period will receive a grade of W for the course.

Policy for Academic Withdrawal from Allied Health Programs

(Nursing, Dental Hygiene, Surgical Technology, Radiography, Sonography, Funeral Service Education, and Veterinary Technician)

Any student who does not successfully complete* two (2) courses (either two different courses or the same course twice), or one (1) eight credit course, that carries/carry the prefix of the student's Allied Health program, regardless of when in the program curriculum the unsuccessful attempt occurs, will be withdrawn from his/her Allied Health program. The student will be notified in writing by the program director/coordinator.

A student who is withdrawn from an Allied Health program during the first or second semester of the program may apply through the Admissions Office to be reaccepted into the program with the next applicant group. Reapplication to the program does not ensure reacceptance. If the student is reaccepted into the program the student will be required to repeat the unsuccessful major courses in the program when they are offered.

A student, who is withdrawn from an Allied Health program during a summer session, the third semester, or the fourth semester, may request reinstatement to the program by meeting with the program director/coordinator within ten working days. A student who is reinstated in the program must successfully complete all future major courses, to not do so will result in the student being permanently withdrawn from the Allied Health program. *Note: unsuccessful course completion is defined as a final course grade of less than 75% or an "F" in a P/F course.

Student Right to Know and Campus Security Act

Graduation rates, transfer out rates, and campus crime data required by the Student Right to Know and Campus Security Act are available upon request from the Records Office, 610-861-5494, the Office of the Vice President for Student Affairs, 610-861-4558, or Campus Security.

Student Rights and Responsibilities

A student has the right to pursue an education in an environment that is conducive to the free flow of information and ideas. At Northampton Community College,

a student is encouraged to express him or herself through speech and actions and to actively participate in decisions affecting the educational process of the College. With rights come responsibilities. A student has the responsibility to realize that his or her actions must not interfere with the College's function as an educational institution and with the rights of others. The current student handbook contains the full student's rights and responsibilities document.

Policy on Student Professional Conduct

Documented evidence of a student's failure to conduct herself/himself in accordance with professional codes of conduct (i.e. Departmental and Host Facilities Code of Ethics, Policies on Clinical Procedures, Departmental Policies and Procedures, etc.) could result in serious academic penalties, up to and including failure in the course or dismissal from the academic program. If a student wishes to appeal any action taken under this policy he/she should follow the procedures for appeal of grades.

Transfer Recommendation Policy

To receive an unconditional recommendation for transfer from the Office of the Vice President for Student Affairs, a student must have a cumulative grade point average of 2.00 and no prior disciplinary record at NCC. Students who do not satisfy the two aforementioned requirements may receive a conditional transfer recommendation.

Policies Found in Student Handbook

Visit www.northampton.edu/StudentHandbook

Student Medical Examinations Policy, Student Handbook page 14

Academic Computing Policy, Student Handbook page 30

Confidentiality, Student Handbook page 40

Student Code of Conduct, Student Handbook page 49

Sexual Assault Policy, Student Handbook page 53

Sexual Harrassment Policy, Studnet handbook page 59

Smoking/Tobacco Policy, Student Handbook page 61

Alcohol and Other Drug, Student Handbook page 61

Degree Information

Degree and graduation requirements

Northampton Community College confers the following in designated programs of study:

Degrees:

- Associate in Arts degree (A.A.)
- Associate in Science degree (A.S.)
- Associate in Applied Science degree (A.A.S.)

Certificates

Specialized Diplomas

Details of the curriculum framework for degrees are shown at the end of the Degree Information section of this catalog.

Degree and Graduation Requirements

The following requirements apply to all degree, certificate, and specialized diploma programs:

- Students must have a cumulative grade point average of 2.00 (C or higher) for all work applied toward the program at Northampton.
- Students must successfully complete the specific program requirements as outlined elsewhere in this catalog.
- If a student breaks matriculation for two consecutive major semesters, the program requirements in effect during the semester of re-entry shall be the student's graduation requirements.
- A student may graduate under the requirements in effect during the year of entry into the program, those in effect during the year of re-entry (as described above), or those in effect during the year of graduation.
- Formal application for graduation must be made by submitting the designated form to the Records Office prior to the date stipulated on the College calendar.
- Students are ultimately responsible for ensuring that they have met all graduation requirements.
- Any student who wishes to earn either a specialized diploma or certificate as well as an A.A., A.S., or A.A.S. degree in the same program must earn the certificate or specialized diploma first.
- Students seeking a second major or second degree must complete requirements for the second program with at least 15 different credits.

Additional requirements for specialized diplomas:

- The specialized diploma program will have no less than 6 credits and typically no more than 30 credits.
- At least one-fourth of the credits or a minimum of nine credits, whichever is greater, must be earned at Northampton.

Additional requirements for certificates:

- The certificate program includes a minimum of 30 credits, and must include six credits outside the particular field, taken from the general education core.

- At least one-fourth of the credits or a minimum of nine credits, whichever is greater, must be earned at Northampton.

Additional requirements for all degrees:

- The degree program includes a minimum of 60 semester hours of credit.
- At least 15 credits applicable to the degree sought must be taken at Northampton.
- Of the last 15 hours prior to receiving an associate degree, nine hours must be taken at Northampton.

A.A. and A.S. Degrees

An A.A. degree is defined as requiring 12 credit hours of humanities, 12 credit hours of social science and 9 credit hours of mathematics and science. The following programs lead to the associate in arts degree:

- Business Administration
- Communication Studies
- Middle Level Education: Grades 4 - 8
- Secondary Education
- Fine Art
- General Studies
- Individualized Transfer Studies
- Journalism
- Liberal Arts
- Social Work
- Sport Management
- Theatre

An A.S. degree is defined as requiring 12 credit hours of humanities, 6 credit hours of social science and 24 credit hours of mathematics and science. The following programs lead to the associate in science degree:

- Biological Science
- Chemistry
- Computer Science
- Computer Information Systems
- Secondary Education: Mathematics and Science
- Engineering
- Math/Physics
- Sports Medicine: Athletic Training

In addition to the specific requirements for the A.A. and A.S. degrees, there is a General Education Core for both the A.A. and A.S. degree with the minimum requirements listed on the following page.

Curriculum framework for degrees

An associate in arts degree should contain:

- A minimum of 50 percent common or general knowledge (humanities and social science preliminary courses, and at least one science or math course);
- A minimum of 25 percent contextual knowledge (science, mathematics, and pre-specialization courses in humanities or social sciences).

An associate in science degree should contain:

- A minimum of 33 percent common or general knowledge (humanities and social science preliminary courses);
- A maximum of 67 percent scientific and technically related courses (mathematics and science; within technical A.S. degrees like engineering, mathematics and science should roughly equal technical courses in number of credits).

An associate in applied science degree program should contain:

- A minimum of 33 percent common knowledge (humanities and social sciences courses and one math or science course);
- A minimum of 50 percent and a maximum of 67 percent technical and technically related courses. Mathematics and science are essentially technically related, contextual courses in all curricula, but they are critical to the effectiveness of most A.A.S. degrees; they may appear as "purer" contextual courses in the technically related category and as applied courses in the technical category.

Frequency of offerings

Courses listed in this catalog are generally offered at least yearly, unless

otherwise noted in course descriptions.

GENERAL EDUCATION CORE CURRICULUM REQUIREMENTS

Associate in Arts (A.A.) Degree
Associate in Science (A.S.) Degree

1. **Communication** - 9 credits

ENGL101C English I, ENGL151C or ENGL151, English II, CMTH102 Speech Communication.

In addition:

Writing Intensive (WI). Communication skills in writing are further reinforced and assessed in two required writing intensive courses (G suffix on course number). One of the General Education courses must be writing intensive. A second writing intensive course may be a General Education course, or a course in the major.

2. **Quantitative Literacy (QL)** - 3-4 credits

One QL designated course or substitution acceptable to the mathematics department.

3. **Computer Literacy (C)**

Incorporated in all programs in a manner acceptable to the computer/information science department. Any CISC

course or verification of computer literacy outcomes imbedded in courses in certain programs.

4. **Arts & Humanities (AH)** - 3 credits - One AH designated course

5. **Social Science** - 6 credits

One Societies and Institutions Over Time (SIT) designated course.

One Scientific Study of Human Behavior (SSHB) designated course.

6. **Science (SCI)** - 3/4 credits

One SCI designated course

7. **Diversity (D)**

One Diversity (D) designated course.

The Electives section of this catalog lists the 100- and 200-level electives which are applicable to the A.A. and A.S. degrees, unless otherwise specified in program requirements. Since the A.A and A.S. degrees are intended for transfer, any courses not in that section are not applicable to the A.A. and A.S. degrees.

All degree programs other than those listed above for A.A. and A.S. degrees lead to the A.A.S. Degree.

A.A.S. Degree

The General Education Core for the A.A.S. degree has the following minimum requirements:

GENERAL EDUCATION CORE CURRICULUM REQUIREMENTS

Associate in Applied Science (A.A.S.) Degree

1. **Communication** - 9 credits

ENGL101C English I, ENGL151C or ENGL151, English II, CMTH102 Speech Communication.

In addition:

Writing Intensive (WI). Communication skills in writing are further reinforced and assessed in one required writing intensive course (G suffix on course number). A program course to be taken in a writing intensive section. A general education course may be taken if no program course is possible.

2. **Quantitative Literacy (QL) or Science (SCI)** - 3/4 credits

One QL designated course or substitution acceptable to the mathematics department, or one SCI designated course.

3. **Knowledge of Arts & Cultures** - 9 credits

Three courses in at least two of the fields below. Science or Quantitative Literacy substituted for the third course in certain programs:

- Arts & Humanities (AH)
- Social Science, one Societies and Institutions Over Time (SIT) designated course.
- Social Science, one Scientific Study of Human Behavior (SSHB) designated course.

4. **Undesignated free elective** (open to student choice) - 3 credits.

5. **Computer Literacy (C)**

Incorporated in all programs in a manner acceptable to the computer/information science department. Any CISC course or verification of computer literacy outcomes imbedded in courses in certain programs.

6. **Diversity (D)**

One Diversity (D) designated course.

Electives

Electives shown below satisfy requirements for electives in various programs, unless otherwise specified in program requirements. Note that only 100- and 200-level courses apply to degrees, and that those applying to A.A. and A.S. degrees must be chosen from the lists of courses applicable to those degrees.

While courses at the 0XX level carry credit for determining student load, those credits may not be applied to any degree, certificate, or diploma granted by the College.

The elective type of special studies courses is designated at the time of offering.

Business Electives

A.A. and A.S. degrees:

- Accounting - ACCT 100, 101, 151, 201, 202, 251
- Business Administration - BUSA 101, 131, 152, 191, 192, 193, 201, 202, 205, 221
- Computer/Information Science - CISC 101 115, 125
- Economics - all ECON except 291, 292, 293

A.A.S. degrees:

- Accounting - ACCT all courses
- Business Administration - all BUSA except 252
- Economics - all ECON except 291, 292, 293

Humanities Electives - all degrees:

- Art - only ARTA 101
- Communications - all CMTH except 120, 122, 170, 240, 251, 252
- Dance - all DANC
- English - all ENGL
- Humanities - all HUMA
- Modern Language - all MDLA
- Music - only MUSC 101

- Philosophy - all PHIL

Note: ARCH 100 may serve as a humanities elective for Architecture A.A.S. students only.

Literature Electives - all degrees:

- English - all ENGL numbered 200 level except ENGL 211, 253, 267

Mathematics Electives

A.A. and A.S. degrees:

- Mathematics - only MATH 118 (Middle Level Education, Early Childhood Education and Special Education only), MATH 119 (Middle Level Education and Early Childhood Education only), 120, 140, 145, 150, 160, 165, 175, 176, 180, 181, 191, 192, 193, 194, 202, 210, 211

A.A.S. degrees:

- Mathematics - those listed above for A.A. and A.S. degrees plus
  MATH 103

Physical Education Electives - all degrees:

- Dance - DANC 110, 120, 130, 210, 220, 230
- Physical Education - all PHED

Science Electives - all degrees:

- Biological Science - all BIOS except 281, 282, 283
- Chemistry - only CHEM 105, 120, 135, 201, 220, 225, 251, 291, 292, 293, 294
- Geography - only GEOG 150, 210
- Geology - all GEOL
- Physics - all PHYS

Social Science Electives - all degrees:

- Counseling - only COUN 100 (but not applicable to Liberal Arts)
- Economics - only ECON 201
- Geography - all GEOG except 130, 150, 210
- History - all HIST
- Political Science - all POLS
- Psychology - all PSYC except 221
- Sociology/Anthropology - all SOCA

Other Electives

A.A. and A.S. degrees:

- Accounting - only ACCT 100, 101, 151, 201, 202, 251
- Architecture - only ARCH 100
- Art - only ARTA 101, 107, 111, 124, 158, 161, 162, 226, 291, 292, 293; see note concerning Art courses.
- Biological Science - all BIOS except 281, 282, 283
- Business - only BUSA 101, 131, 152, 191, 192, 193, 201, 202, 205, 221
- Chemistry - only CHEM 105, 120, 135, 201, 220, 225, 251, 291, 292, 293, 294
- Communications - all CMTH except 180, 182, 240, 252
- Computer/Information Science - only CISC 101, 104, 106, 115, 125, 225, 230, 270
- Counseling - only COUN 100, 291, 292, 293
- Dance - all DANC
- Economics - all ECON except 291, 292, 293
- Education - all EDUC except 105, 255
- Engineering - only ENGG 100, 110, 191, 192, 193, 194, 201, 203, 204, 251, 252
- English - all ENGL
- Geography - all GEOG except 130
- Health - only HEAL 150
- History - all HIST
- Hospitality - only HOSP 101
- Humanities - all HUMA
- Interdisciplinary Studies - only INTS 101
- Journalism - only JOUR 103, 201
- Mathematics - only MATH 120, 140, 145, 150, 160, 165, 175, 176, 180, 181, 191, 192, 193, 194, 202, 210, 211
- Modern Language - all MDLA
- Music - all MUSC
- Office Administration - only OFAD 221
- Philosophy - all PHIL
- Physical Education - any PHED courses up to a maximum of two credits
- Physics - all PHYS
- Political Science - all POLS
- Psychology - all PSYC except 221
- Sociology/Anthropology - all SOCA
- Special Education - SPED 160

A.A.S. degrees:

- All courses except: EDUC 255, 0XX-level courses

Note concerning Art courses:

- ARTA 107, 124, and 158 are applicable only to the General Studies program, the Fine Art Program, and A.A.S. degrees.
- ARTA 161 is applicable only to the Fine Art Program and A.A.S. degrees.
- ARTA 226 is applicable only to the General Studies program and A.A.S. degree programs.

General Education Core Curriculum (GE)

What is General Education at Northampton Community College?

An undergraduate degree is comprised of three parts: courses in the major, elective courses, and courses in the General Education Core Curriculum. *Major courses* define the program of study. Students choose *electives* that fit their

individual interests. The General Education Core Curriculum is the part of the academic experience that all students have *in common*.

The GE Core defines an important set of knowledge and skills that will help our graduates to continue learning, adapt to change, and become citizens who can make wise choices and contribute to their community.

The General Education Core Curriculum is designed to go hand in hand with the major courses to develop skills that will serve students in their academic study, careers, and in their lives. Though in some designated GE Core courses the focus will be on particular outcomes, we expect that the knowledge and skills that are part of the GE Core Curriculum will be reinforced throughout the other major courses and electives

Courses satisfying various General Education Core requirements are listed below by category; such requirements must be satisfied by selecting courses from among the listings below. Unless otherwise specified, they are applicable to all degrees (A.A./A.S./A.A.S.).

General Education Core Curriculum Requirements

Knowledge of Arts, Cultures and the Natural World

ARTS & HUMANITIES

Goal: Students should be able to understand both the creative process and how works of human imagination and thought from diverse cultures, places, and times express varieties of human experience.

Learning Outcomes:

- Students will demonstrate the ability to understand, analyze, discuss, and interpret works that confront, express, and examine human experience.
- Students will express their understanding of the ways that language, literature, philosophy, or the visual and performing arts challenge or reinforce specific cultural or historic values and conditions.

SOCIAL SCIENCE

Goal: Students will demonstrate knowledge of both the Societies and Institutions Over Time (SIT) and the Scientific Study of Human Behavior (SSHB).

Learning Outcomes:

- Students will identify the major concepts of a social science discipline and demonstrate critical thinking in their application.
- Students will demonstrate an understanding of how a social science discipline describes, analyzes, and explains social change or human behavior.
- Students will demonstrate an awareness of how people's experiences and perspectives are shaped by sex, gender, ethnicity, class, age, race, culture and other factors.

SCIENCE

Goal: Students will demonstrate a working knowledge of scientific principles and concepts and be able to apply them to daily situations.

Learning Outcomes:

- Students will understand the scientific method as it relates to the particular discipline recognizing the potential for uncertainty in the scientific inquiry.
- Students will develop basic laboratory skills used for collecting and analyzing data according to the particular discipline.

DIVERSITY

Goal: Students will demonstrate an understanding of diverse domestic and global cultures, through analysis of their arts, histories, geographies, and/or institutions, in order to participate effectively in a multicultural, global society.

Intellectual and Practical Skills

COMMUNICATION

Goal: Students will present and support ideas in an organized and coherent manner consistent with the intended audience and purpose in both speaking and writing.

Learning Outcomes:

- Students demonstrate critical thinking in collecting, analyzing, understanding, and choosing effective ideas and supporting materials.
- Students understand and choose effective communication strategies and organize ideas and information with a clear central idea or thesis.
- Students show clear awareness of audience needs in word choice, level of explanation, and method of presentation.

All students in degree programs will take English I, English II, and Speech Communication. Skills in writing are further reinforced and assessed in subsequent required writing-intensive courses (G sections).

INFORMATION LITERACY

Goal: Students will demonstrate effective research skills in gathering and using information.

Learning Outcomes:

- Students will locate and identify appropriate information.
- Students will critically evaluate source information and incorporate it effectively into their work.
- Students will demonstrate an understanding of the ethical and legal use of intellectual property.

COMPUTER LITERACY

Goal: Students will use computer technology as a tool for communication and productivity both professionally and personally.

Learning Outcomes:

- Students will demonstrate knowledge of computer concepts and terminology.
- Students will use technology for communication and research with tools such as email and the Internet.
- Students will create, store, retrieve and print appropriately formatted documents using assorted software such as word processors, spreadsheets, and other applications required by their field of study.
- Students will demonstrate an understanding of the ethical use of current technologies.

QUANTITATIVE LITERACY

Goal: The student will be able to interpret and analyze quantitative data to solve problems, and they will be able to communicate their results.

Learning Outcomes:

- The student will be able to interpret, analyze, and draw conclusions about data presented as words, abstract symbols, tables, or graphs.
- The student will be able to apply aspects of mathematics to think critically, to model events, and to solve problems.
- The student will be able to communicate results both in writing and orally using appropriate mathematical language and symbolism with supporting data and graphs.

<u>Arts and Humanities (AH)</u>

ARCH 100 - Architectural History I - Antiquity to 1870 (Architecture only)
ARTA 100 - Art and Visual Thinking
ARTA 101 - Art History Survey
CMTH 105 - Public Speaking
CMTH 110 - Introduction to the Theatre
CMTH 111 - Acting I
CMTH 115 - Technical Theatre
CMTH 117 - Stagecraft
CMTH 126 - The Communication Arts
CMTH 189 - Stage Voice and Movement
CMTH 190 - Stage Production
CMTH 206 - Directing
CMTH 211 - Plays: Classical to Contemporary
CMTH 212 - Acting II
CMTH 218 - Theatre Portfolio
CMTH 220 - Introduction to Film
DANC 101 - Dance History
DANC 110 - Ballet I
DANC 120 - Modern Dance I
DANC 130 - Jazz I
DANC 210 - Ballet II
DANC 220 - Modern Dance II
DANC 230 - Jazz II
ENGL 201 - British Literature I
ENGL 203 - Shakespeare
ENGL 205 - American Literature I
ENGL 211 - Plays: Classical to Contemporary
ENGL 215 - Multicultural Adolescent Literature
ENGL 250 - Contemporary Latin American Literature in Translation
ENGL 251 - British Literature II
ENGL 253 - Creative Writing
ENGL 255 - American Literature II
ENGL 256 - Modern Poetry
ENGL 257 - 20th Century Literature by Women: Self-Images and Self-Awareness
ENGL 260 - Contemporary Literature
ENGL 264 - Irish Literature
ENGL 265 - African-American Literature
ENGL 267 - Poetry Writing
HUMA 121 - The American Work Experience
HUMA 140 - Women and Power
JOUR 101 - Journalism and Society
MDLA 102 - Elementary French I
MDLA 103 - Elementary Spanish I
MDLA 112 - Elementary French II
MDLA 113 - Elementary Spanish II
MDLA 122 - Intermediate French I
MDLA 123 - Intermediate Spanish I
MDLA 133 - Intermediate Spanish II
MUSC 101 - Introduction to Music
PHIL 111 - On Death and Dying
PHIL 121 - World Religions
PHIL 201 - Introduction to Philosophy
PHIL 202 - Ethics and Moral Problems
PHIL 204 - Asian Philosophies

<u>Social Science: Societies and Institutions over Time (SIT)</u>

ARCH 155 - Architectural History II - 1870 to Present (A.A.S. only)
CMTH 221 - History of Broadcasting (Radio/TV only)
GEOG 101 - World Geography
GEOG 151 - Geography of the United States and Canada
GEOG 221 - Contemporary Middle East
HIST 103 - Ancient and Medieval History
HIST 113 - American History I
HIST 121 - The Black Experience
HIST 153 - Foundations of Modern European History, 1300-1815
HIST 163 - American History II
HIST 166 - Civil War and Reconstruction
HIST 167 - Vietnam

HIST 168 - History of the Middle East
HIST 173 - Modern European History, 1815 to Present
HIST 210 - History of Modern Science, 1859 to Present
HIST 211 - History of Pennsylvania
POLS 101 - Introduction to Political Science
POLS 105 - American Constitutional Law
POLS 110 - American National Government
POLS 170 - Politics of Modern Turkey
POLS 202 - International Relations
POLS 205 - Women and Politics
POLS 251 - State and Local Government
SOCA 102 - Cultural Anthropology
SOCA 105 - American Ethnicity

Social Science: Scientific Study of Human Behavior (SSHB)

ECON 201 - Macroeconomics
GEOG 121 - Introduction to Environmental Problems
PSYC 103 - Introduction to Psychology
PSYC 265 - Psychology of Sex and Gender
SOCA 103 - Principles of Sociology
SOCA 125 - Sociology of Families
SOCA 210 - Sociology of Gender

Quantitative Literacy (QL)

MATH 103 - Applications in Mathematics (A.A.S. only)
MATH 118 - Foundations of Mathematics I (Middle Level Education, Early Childhood Education & Special Education only)
MATH 119 - Foundations of Mathematics II (Middle Level Education & Early Childhood Education only)
MATH 120 - The Nature of Mathematics
MATH 140 - College Algebra
MATH 145 - Trigonometry
MATH 150 - Introductory Statistics
MATH 160 - Pre-Calculus
MATH 165 - Applied Calculus
MATH 175 - Calculus with Precalculus (part 1)
MATH 176 - Calculus with Precalculus (part 2)
MATH 180 - Calculus I
MATH 181 - Calculus II
MATH 210 - Calculus III
MATH 211 - Differential Equations

Science (SCI)

BIOS 104 - Field Ecology
BIOS 105 - Contemporary Biology
BIOS 107 - Biology I
BIOS 110 - In Your Genes: Introduction to Modern Genetics
BIOS 115 - Essentials of Biology
BIOS 150 - Biology II
BIOS 160 - Human Biology
BIOS 202 - Microbiology
BIOS 204 - Human Anatomy and Physiology I
BIOS 206 - General Ecology
CHEM 105 - Chemistry in Contemporary Society
CHEM 120 - General Chemistry I
CHEM 135 - Chemistry of Life
GEOG 150 - Astronomy
GEOG 210 - Meteorology
GEOL 201 - Physical Geology
PHYS 101 - Physics I
PHYS 152 - Physical Science II
PHYS 215 - Physics for Science and Engineering

Diversity (D)

CMTH 126 - The Communication Arts
CMTH 211 - Plays: Classical to Contemporary
CMTH 215 - Intercultural Communication
ENGL 151 - English II L or C (Literature or Computer)
ENGL 211 - Plays: Classical to Contemporary
ENGL 215 - Multicultural Adolescent Literature
ENGL 250 - Contemporary Latin American Literature in Translation
ENGL 257 - 20th Century Literature by Women: Self-Images and Self-Awareness
ENGL 260 - Contemporary Literature
ENGL 265 - African-American Literature
GEOG 101 - World Geography
GEOG 121 - Introduction to Environmental Problems
HIST 121 - The Black Experience
HIST 168 - History of the Middle East
HUMA 140 - Women and Power
MDLA 102 - Elementary French I
MDLA 103 - Elementary Spanish I
MDLA 112 - Elementary French II
MDLA 113 - Elementary Spanish II
MDLA 122 - Intermediate French I
MDLA 123 - Intermediate Spanish I
MDLA 133 - Intermediate Spanish II
PHIL 111 - On Death and Dying
PHIL 121 - World Religions
PHIL 204 - Asian Philosophies
POLS 170 - Politics of Modern Turkey
POLS 202 - International Relations
SOCA 102 - Cultural Anthropology
SOCA 103 - Principles of Sociology
SOCA 105 - American Ethnicity

Communication: Writing Intensive General Education Courses (WI)

ARCH 100G - Architectural History - Antiquity to 1870
BIOS 105G - Contemporary Biology
CMTH 211G - Plays: Classical to Contemporary
ENGL 201G - British Literature I
ENGL 203G - Shakespeare
ENGL 205G - American Literature I
ENGL 211G - Plays: Classical to Contemporary
ENGL 215G - Multicultural Adolescent Literature
ENGL 250G - Contemporary Latin American Literature in Translation
ENGL 251G - British Literature II
ENGL 255G - American Literature II
ENGL 256G - Modern Poetry

ENGL 257G - 20th Century Literature by Women: Self-Images and Self-Awareness
ENGL 260G - Contemporary Literature
ENGL 264G - Irish Literature
ENGL 265G - African-American Literature
GEOG 121G - Introduction to Environmental Problems
GEOG 151G - Geography of the United States and Canada
GEOG 221G - Contemporary Middle East
HIST 113G - American History I
HIST 121G - The Black Experience
HIST 166G - Civil War and Reconstruction
HIST 168G - History of the Middle East
HIST 173G - Modern European History, 1815 to Present
HUMA 121G - The American Work Experience
HUMA 140G - Women and Power
PHIL 111G - On Death and Dying
PHIL 202G - Ethics and Moral Problems
POLS 105G - American Constitutional Law
POLS 110G - American National Government
POLS 205G - Women and Politics
POLS 251G - State and Local Government
PSYC 103G - Introduction to Psychology
SOCA 102G - Cultural Anthropology
SOCA 103G - Principles of Sociology
SOCA 125G - Sociology of Families

Communication: Writing Intensive Program Courses (WI)

ARTA 270G - Professional Workshop
AUTO 203G - Automotive Shop Management Practices
BIOS 250G - Introduction to Cell & Molecular Biology
BUSA 221G - Business Communication
CHEM 201G - Organic Chemistry I
CJST 121G - Criminology
CMTH 225G - Scriptwriting
CMTH 230G - Introduction to Communication Theory
DENH 251G - Preventive Oral Health Services I
DMSG 215G - Small Parts & Special Topics
EARL 256G - Internship
ECON 251G - Microeconomics
EDUC 252G - Educational Psychology
ELEC 272G - Computer Electronics Practicum II
EMEC 260G - Electromechanical Technology Practicum
HOSP 221G - Hospitality Practicum
JOUR 202G - Reporting in the Information Age
JOUR 203G - Writing for Public Relations
OFAD 221G - Business Communication
PARL 215G - Legal Research and Writing
PSYC 251G - Child Psychology
PSYC 258G - Developmental Psychology
QUAL 221G - Applied Quality Practicum
SAFT 251G - Safety Administration
SPED 161G - Accommodating Children with Exceptionalities in the Classroom
SPRT 152G - Sports in Society
VETC 215G - Animal Diseases

Academic Programs

Northampton Community College offers a variety of academic programs designed to prepare you to enter the workforce or to transfer to a four-year college or university. If you have questions regarding a specific program, please feel free to call our Admissions Office at 610/861-5500, and a member of the staff will be happy to talk to you.

The academic programs on the following pages are the responsibility of the academic division indicated under the program title, i.e. the Allied Health & Sciences Division, the Business & Technology Division, the Education and Academic Success Division, the Humanities & Social Sciences Division.

The following abbreviations are used in the curriculum section (following the course title) to identify general education core courses:

AH - Arts and Humanities

C - Computer

D - Diversity

QL - Quantitative Literacy

SCI - Science

SIT - Social Science: Societies and Institutions over Time

SSHB - Social Science: Scientific Study of Human Behavior

WI - Writing Intensive

The College makes every effort to ensure that the information contained in this catalog is complete and accurate. However, some omissions and errors may be possible. This catalog should not be perceived as a formal/legal contract.

Accounting

Business & Technology
Degree awarded: Associate in Applied Science;
Specialized Diploma conferred

Program Narrative

Accountants are essential team members within large and small corporations, and at non-profits and educational institutions. With a degree in accounting, you'll also have the knowledge you need to manage your own business. Northampton's Accounting program, which is accredited by the Association of Collegiate Business Schools and Programs (ACBSP), provides a solid foundation of specific accounting concepts as well as the skills you'll need to succeed in the field.

Associate in Applied Science Degree Program Features

On its own, Northampton's associate's degree will qualify you for a range of employment opportunities, including entry-level accounting, bookkeeping, accounts payable/ receivable and more. If your plan is to pursue a career as a Certified Public Accountant (CPA), an associate's degree from Northampton is an affordable way to start down the path toward the required bachelor's degree.

The AAS degree program can be conveniently completed in the day or evening, on a full- or part-time basis. The program can also be completed online.

The Specialized Diplomas Program Features

Northampton also offers two specialized diplomas in Accounting: the Accounting Specialized Diploma and the Accounting Assistant Specialized Diploma. Both can be completed in the day or evening.

The Accounting Specialized Diploma is intended for students who may already have a college degree but who wish to acquire accounting skills or begin taking steps toward achieving the CPA. To learn more about the requirements of reaching CPA licensure, you can visit PICPA.org.

The Accounting Assistant Specialized Diploma is a good choice for students who would like to being working quickly in support positions in accounting firms or in other related areas of business. The 18-credit diploma includes introductory accounting classes as well as training on computers.

Contact the Admissions Office at 610-861-5500 for further information.

Accounting Program

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ACCT 101	Financial Accounting I	3
BUSA 152	Business Law I	3
ENGL 101C	English I	3
----------	Mathematics Elective (QL) +	3
----------	General Education Elective (AH or SIT)	3
		15
	Second Semester	
ACCT 151	Financial Accounting II	3
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
ENGL 151	English II ++	3
----------	Business Elective ++ +	3
		15
	Third Semester	
ACCT 201	Intermediate Accounting I	4
BUSA 201	Business Statistics I	4
ECON 201	Macroeconomics	3
CISC 104	Microcomputer Applications	4
		15
	Fourth Semester	
ACCT 202	Managerial Accounting	3
ACCT220	Income Tax Accounting I	3
BUSA 221G	Business Communication	3
----------	Accounting Elective + +++	3
----------	Elective	3
		15
	Total Credits	**60**

+ Mathematics Elective options: MATH 140, 145, 160, 165, 175, 176, 180, 181.

++ Report Writing option of ENGL 151 is recommended for career students.

+++ Business Elective options: BUSA 101, 115, 131, 137, 202, 205, 226, 235.

++++ Accounting Elective options: ACCT 160, 205*, 251*, 255* or BUSA 211.

* Offered only through Online Learning

- For the General Education Elective, students must select one course from the list of approved courses in one of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT).
- One course must be designated as Diversity (D)
- BUSA 221G satisfies the Writing Intensive (WI) requirement for this program.

NOTE: Students will be required to use spreadsheets in their upper level accounting courses. Thus, it is highly recommended that students complete CISC 101 before enrolling in any sophomore accounting courses.

Accounting,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
ACCT 101	Financial Accounting I	3
BUSA 152	Business Law I	3
		6
	Second Semester	
ACCT 151	Financial Accounting II	3
ACCT 202	Managerial Accounting	3
BUSA 202	Business Law II	3
		9
	Third Semester	
ACCT 201	Intermediate Accounting I	4
ACCT 205	Cost Accounting	3
		7
	Fourth Semester	
ACCT 251	Intermediate Accounting II	3
ACCT 220	Income Tax Accounting I	3
ACCT 255	Principles of Auditing	3
		9
	Total Credits:	**31**

NOTE: Students will be required to use spreadsheets in their upper level accounting courses. Thus, it is highly recommended that students complete CISC 101 before enrolling in any sophomore accounting courses.

Accounting Assistant,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
ACCT 101	Financial Accounting I	3
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
		9
	Second Semester	
ACCT 151	Financial Accounting II	3
ACCT 160	Accounting Applications	3
BUSA 211	Personal Finance	3
		9
	Total Credits:	**18**

Career Potential: Accounts Payable/Receivable, Bookkeeper/Payroll, Cost Accountant, Public Accountant, Staff Accountant, Tax Accountant, Account Manager, Account Specialist , Inventory Accountant

Leading to: Auditor, Certified Public, Accountant, Comptroller, Treasurer, Trust Officer

Applied Quality and Standards

Business & Technology

Degree awarded: Associate in Applied Science;

Certificate awarded

Program Narrative

Today's manufacturing environment is clean, fast-paced and always changing to stay competitive. Manufacturing today also requires more technical knowledge than in the past. That's why it is important to stay on top of the latest trends and methods involved in manufacturing, technology, and continuous quality improvement. For those just entering the field, it's also vital to have hands-on operating skills specific to at least one area of manufacturing.

We developed our Applied Quality and Standards program with the assistance of local manufacturing experts. Their input assures that graduates of our program are highly skilled

and knowledgeable in today's manufacturing and quality assurance practices.

Graduates new to manufacturing will gain a new set of skills and knowledge qualifying them as machine operators, quality inspectors or technicians, and manufacturing engineering technicians. Existing manufacturing personnel who graduate from this program will become better qualified as technicians, auditors, supervisors and managers of Quality, manufacturing group leaders, and process technicians.

Program Features

The program focuses on providing practical industry-specific training in well-equipped manufacturing and quality assurance labs. While students study areas of Quality such as Total Quality Management, statistical process control, ISO 9000 standards, and auditing, they also learn to apply this knowledge to specific types of manufacturing through hands-on technical electives. If you have existing skills in manufacturing, you may be able to gain credit through testing to challenge the technical electives requirement.

The associate's degree program includes a series of required general education courses. These classes prepare you to assume a greater role in working with people and other departments in your organization. The well-rounded education you receive increases your potential to grow into supervisory or management positions.

The work-based internship near the end of the degree program can be carried out with your employer or with another approved organization. During your internship, you'll apply your manufacturing and quality skills and knowledge to a production or process operation, experiencing the dynamics found only in an actual organization.

If you're interested in continuing your education to the bachelor's degree level, you may transfer your credits from this program to the following programs:

- Franklin College B.S. in Applied Management (web-based)
- California University of Pennsylvania B.S. in Industrial Management (web-based)
- Penn College of Technology B.S. in Technical Management
- Penn College of Technology B.S. in Welding and Fabrication Engineering Technology

Check with your advisor for more information and options in course selection.

A specialized training certificate is also available in the area of Electronics Manufacturing. The certificate is 35 credits and consists mainly of the technical courses in quality and manufacturing.

All courses are offered during the evening in the Fall and Spring. General education courses and most technical electives are also offered in the daytime.

Program Requirements

No special requirements are needed to apply for this program.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate an ability to work independently and collaboratively.
- Interpret international quality standards and specifications and apply them to a quality system within an organization.
- Demonstrate proficient research and computer skills in data gathering and analysis.
- Analyze and present data in an acceptable and standardized manner.
- Solve common manufacturing or service quality-related problems using both a reactive and proactive approach.
- Demonstrate competent technical writing skills.
- Demonstrate competent speaking skills when working with diverse groups.
- Demonstrate a basic framework of technical vocabulary and graphic interpretation applicable to quality technology and a specific industrial process or service.
- Demonstrate observational, integrative, and synthetic skills.
- Demonstrate the proper use and care of common mechanical metrology and calibration tools, instruments and equipment.
- Apply basic "Quality" philosophy, methodology and "statistical thinking" to the continuous quality improvement system in an organization.
- Describe the key process elements and technology commonly found in various types of manufacturing operations such as foundries, electronics, food and drug packaging, plastics molding, machining, etc. or various types of service organizations.
- Demonstrate the basic process methodology, equipment operation, and application of industry quality standards found in a specific manufacturing industry such as electronics, food and drug packaging, plastics molding, or machining or a specific service industry such as insurance, banking or health-care.
- Demonstrate proper application of mathematics to solving quality process-related problems.
- Apply costing concepts and methods to decisions in implementing design and quality related practices and technology in an organization.

Applied Quality and Standards Program,

Associate in Applied Science Degree

Course Code	Course Title	Credits
BUSA 114	Manufacturing Cost Control	3
BUSA 252	Quality Management	3

CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
ENGG 117	Technical Drawings and Specifications	3
ENGL 101C	English I	3
ENGL 151	English II +	3
ENGG 125	Manufacturing Processes	3
MATH 140	College Algebra	3
QUAL 210	Statistical Quality Control	3
QUAL 215	Quality Assurance	3
QUAL 221G	Applied Quality Practicum	3
----------	General Education Elective	3
----------	General Education Elective	3
----------	Technical Electives + +	14
----------	Science Elective (SCI)	4
----------	Elective	3
	Total Credits:	**63**

+ Students are strongly advised to complete the Technical Writing option of ENGL 151.

++ Technical Elective options: Any courses in BIOS, BIOT, CHEM, ELEC, EMEC, ENGG, QUAL, SAFT or WELD 115, 120, 121, 123, 124.

- For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT) or Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D)
- Completion of QUAL 221G satisfies the Writing Intensive (WI) requirement for this program.

Applied Quality and Standards Program, Electronics Manufacturing

Certificate

Course Code	Course Title	Credits
BUSA 252	Quality Management	3
CISC 101	Introduction to Computers	3
ELEC 101	DC/AC Circuit Analysis I	4
ELEC 177	Electronics Manufacturing I	2
ELEC 222	Electronics Manufacturing II	3
ENGG 117	Technical Drawings and Specifications	3
ENGG 125	Manufacturing Processes	3
MATH 140	College Algebra	3
QUAL 110	Metrology	2
QUAL 210	Statistical Quality Control	3
QUAL 215	Quality Assurance	3
----------	Technical Elective: ELEC or QUAL	3
	Total Credits:	**35**

Career Potential: Quality Control Technician, Process Technician LEADING to: Manufacturing Supervisor, Quality Supervisor Manufacturing Engineer

Architecture

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Architects and architectural technicians shape the built environment, creating homes, offices, schools and much more. Do you have a passion for creating on paper and with computers? A career in architecture or architecture-related fields could be a satisfying and rewarding profession. An associate's degree in Architecture from Northampton provides an affordable foundation for a traditional five-year degree program leading to a career as a licensed architect. It can also prepare you for work in the field upon graduation.

Northampton's program offers a mixture of academic, design and advanced computer technology coursework. You will receive a base of knowledge to broaden your perspective of the world. Our four semester design studio sequence emphasizes skills development in architectural conceptualization as well as design vocabulary and process. Supporting coursework in history, graphics and building technology mesh with your studio work to enhance your critical thinking, problem solving and communication skills. With computer technology dramatically changing the practice of architecture, Northampton's curriculum strives to stay on the leading edge of 2D and 3D technology across the curriculum. We also balance those technologies with traditional graphic and model making skills development.

Please note that senior architecture schools consider applicants from Northampton on an individual basis and

have traditionally granted both full and partial credit depending on the abilities of the student and the requirements of the transfer school.

Program Features

Courses are scheduled both day and evening for students who want to attend full time or part time. Although many of the required courses are offered in the evening, the complete program will require some daytime attendance.

Northampton's program is a member of the Association of Collegiate Schools of Architecture, ensuring that the program stays in touch with current movements in the field. Our faculty consists of practicing, registered architects who, as members of the American Institute of Architects, are on top of developments in both architectural education and practice.

The Architecture Department has an active chapter of the American Institute of Architecture Students (AIAS), which provides our students with leadership opportunities at the local and national level. The AIAS also offers social activities and field trips that enhance your architecture studies.

Opportunities for practical experience include a five-credit community design studio taking place in a community-wide environment. This capstone project gives students hands-on experience in the field. In addition, students who qualify may choose to complete a three credit professional internship and apply their practical office experience to their education for credit. Students will work under the direction of an employer with a professional degree in architecture. Arrangements will be made through the architecture department. Both the community design and internship learning experiences are of great value when the graduate either enters the profession or transfers to a Bachelor degree program.

"Real World Community Learning"

Northampton's architecture program offers you a 5 credit capstone community design studio which takes place in a community wide environment giving you "hands-on" learning opportunities.

Professional Internship

Students who qualify may choose the option of a three credit professional internship and apply their practical office experience to their education for credit. Students will work under the direction of an employer with a professional degree in architecture. Arrangements will be made through the architecture department. Both the community design and internship learning experiences will prove to be of great value when the graduate either enters the profession or transfers to a Bachelor degree program.

Course Scheduling

Courses are scheduled both day and evening for students who want to attend full time or part time. Although many of the required courses are offered in the evening, the complete program will require some daytime attendance.

Who Can Apply for the Architecture Program?

- High school students
- College students
- Individuals considering a career change

Individuals presently employed as technicians looking to advance their education.

Program Outcomes

Graduates of the program will:

- Be prepared for transfer into an accredited five year Bachelor of Architecture Professional Program leading to a three-year internship and NCARB Examination to practice architecture.
- Be prepared to transfer into a four-year architectural construction management technology degree program.
- Be prepared for employment as an architectural technician which assists the architect, planner or engineer in planning, designing, and inspecting the construction of buildings and related areas of design and manufacturing, such as product design, furniture design, display design, display design and product sales.
- Be prepared for employment in the fields of plant engineering, supervision, testing and product representation in the building and construction industry.
- Develop a broad exposure to both 2D and 3D architectural software such as AutoCAD, ARCHICAD, and others
- Learn to produce construction drawings and presentation drawings through traditional and computer graphics.
- Develop an understanding and ability to select and design structural, systems for low-rise buildings.
- Develop an understanding of how our physical (built) environment is influenced by our social, cultural, historical and philosophical determinants.

Architecture,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ARCH 100	Architectural History I-Antiquity to 1870	3
ARCH 101	Architectural Graphics I	3
ARCH 110	Architecture Design Studio I	3
ENGL 101C	English I	3
MATH 140	College Algebra	3
		15
	Second Semester	

ARCH 121	Architectural Graphics II	3
ARCH 150	Architecture Design Studio II (Digital)	3
ARCH 155	Architectural History II-1870 to Present	3
ENGL 151C	English II	3
MATH 145	Trigonometry	3
		15
	Third Semester	
ARCH 204	Design & Analysis of Structural Form	3
ARCH 210	Architecture Design Studio III	5
ARCH 214	Architectural Materials & Methods of Construction I	3
ARCH 215	Advanced Digital Analysis	3
CMTH 102	Speech Communication	3
		17
	Fourth Semester	
ARCH 250	Architecture Design Studio IV	5
ARCH 254	Architectural Material Methods Construction II	3
----------	General Education Elective (SIT or SSHB)	3
----------	Elective	3
		14
	Total Credits:	**61**

NOTE: ARCH 200 Professional Internship (3 cr. optional elective) offered Fall, Spring, Summer1 and Summer 2 semesters. Please see advisor.

- For the General Education Elective, students must select one course from the list of approved courses in one of the following categories: Social Science: Societies and Institutions over Time (SIT) or Social Science: Scientific Study of Human Behavior (SSHB).
- Completion of ENGL 151C satisfies the Diversity (D) requirement for this program.
- Completion of both ARCH 210 and ARCH 250 satisfies the Writing Intensive (WI) requirement for this program.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirement for this program.

Career Potential: Leading to: Architect, Architectural Technician, Building Inspector, Architectural/Building Sales

NCC students have transferred to: Drexel University, Florida Atlantic University, Lehigh University Penn State University, Temple University, University of Arizona, University of Maryland, University of Miami, University of Michigan

Aseptic Processing

Allied Health & Sciences

Specialized Diploma conferred

Program Narrative

The region's leading biopharmaceutical and biomanufacturing firms helped develop Northampton's specialized diploma and its courses. The result is a program that prepares students to start or grow a career in the expanding field of aseptic (ultra-clean) production immediately upon graduation.

Students in this program receive hands-on experience in Northampton's state-of-the-art ISO Class 7 clean room. They also gain classroom training for work within biomanufacturing, biopharmaceuticals and medical device manufacturing.

Industry-experienced instructors demonstrate how clean rooms are operated and maintained, as well as the special procedures and behaviors required of technicians working in these settings. FDA regulations and contamination control are emphasized in the course work.

Program Features

The program can be completed on a full-time or part-time basis in as little as two semesters. Classes can be taken individually or as part of the full specialized diploma program. All but one of the courses can be taken at either NCC's Bethlehem or Monroe campuses. Courses are available during both day and evening hours.

Program Requirements

The NCC Math Placement examination is required upon admission. Successful completion of Algebra is necessary to enroll in the statistics course required to complete the specialized diploma. There are no prerequisites for the foundational course on current good manufacturing practice (GMP), which also provides a good overview of the biomanufacturing industry.

This program is highly technical and industry-specific, so the credits are not designed to transfer to a 4-year college. Courses may be considered as electives upon transfer. Students who intend to continue on to a bachelor of science

(BS) degree should contact a transfer advisor in the Academic Advising office before choosing courses.

Students in the second year of the Biotechnology AAS Program are welcome to use these courses as free electives, but they cannot substitute for AAS Biotechnology degree requirements.

Program Outcomes

Graduates of the Aseptic Processing Specialized Diploma program will:

- Develop an overall understanding and appreciation of the US Food and Drug Administration (FDA) regulations governing aseptic processing and their implications for biomanufacturing facilities.
- Demonstrate the ability to work independently and collaboratively in a typical biomanufacturing facility while following appropriate regulations.
- Demonstrate proficiency in the practice and theory of aseptic processing including principles in aseptic processing operations and operations within a clean room.
- Understand the importance of and interrelationships among environmental monitoring, environmental control and contamination control.

Aseptic Processing,

Specialized Diploma

Course Code	Course Title	Credits
BIOT 101	Introduction to Good Manufacturing Practices	3
BIOT 184	Introduction to Biotechnology	3
BIOT 120	Cleanroom Microbiology	2
BIOT 200	Aseptic Processing	4
MATH 150	Introduction to Statistics	3
	Total Credits:	**15**

Career Potential: Biomanufacturing Technician, Biomanufacturing Fill-line Operator,

Automation Control in Biomanufacturing

Business & Technology

Specialized Diploma conferred

Program Narrative

Are you currently working in biomanufacturing or trained in biotechnology but need more credentials? Are you a dislocated worker in need of a new set of skills?

Northampton's specialized diploma in Automation Control in Biomanufacturing prepares you for quick entry into the biomanufacturing job market upon graduation. We emphasize development of the skills and competencies most needed by employers in the fields of biomanufacturing and biopharmaceuticals. In addition to providing electronics and electrical fundamentals, we focus on practical applications of electromechanical concepts and process controls in the field's highly-regulated and increasingly automated production facilities.

The program can be completed in its entirety in day or evening classes held on Main Campus.

Program Features

In addition to theory and practical skills, Northampton's program emphasizes problem solving, attention to detail, ability to work in a highly regulated environment and team work. Students will also have an introduction to working in the aseptic environments often used in the manufacture of biopharmaceuticals, medical devices and related products. Students will work in groups throughout their coursework so that they will gain valuable experience working with a team on real-world projects and problem-solving situations similar to those they will find in the biomanufacturing workplace.

We focus on the equipment, instruments and systems that operators and technicians use in the real world of biomanufacturing industry and other closely related processes. Students gain basic understanding of voltage, current, resistance, wiring and measurements. The student gain strong practical knowledge and skills of process instrumentation devices, reading and interacting with P&IDs and a working knowledge of how it all fits together in a process automation system. An actual bioreactor may be used throughout the program to allow for hands-on practice with real-life equipment used in the biomanufacturing and biopharmaceutical industry. Our program also familiarizes students with basic computer software used in the field, including word processing, spread sheet and graphing programs.

Students in the second year of the Electromechanical Technology Program - Automated Systems are encouraged to use these courses as technical and free electives. See your advisor for more information and course selection. Alternative schedules such as full-day options to allow for completion of a course or group of courses in fewer weeks can be developed to meet the needs of local biomanufacturing employers.

Professionals in Northampton Community College's Career Services Office, as well as instructors within the program, will be available to assist students in finding employment in the field.

Program Requirements

The Automation Control in Biomanufacturing Specialized Diploma can be completed in two semesters during the day or evening on a full-time basis. Alternative schedules such as

full-day options to allow for completion of a course or group of courses in fewer weeks will be developed to meet the needs of the local biomanufacturing employers.

Program Outcomes

Graduates of the Automated Process Control Systems Specialized Diploma program will:

- Demonstrate the ability to work independently, collaboratively or in teams safely with electrical, mechanical, process instrumentation and automation equipment.
- Describe and understand the principles and functions of a wide variety of process automation equipment and instrumentation and connectivity to allow assistance in trouble-shooting automated processing equipment in highly-regulated manufacturing systems.
- Analyze and present data in an acceptable, standardized and organized manner using technical vocabulary and graphic interpretation applicable to the area of automated process control systems including Piping and Instrumentation Diagrams (P & IDs).
- Demonstrate observational, integrative and synthetic skills.

Automation Control for Biomanufacturing,

Specialized Diploma

Course Code	Course Title	Credits
BIOT 101	Introduction to Good Manufacturing Practices	3
CISC 101 or CISC 100	Introduction to Computers or Computer Technology I	3/4
EMEC 120	Process Data Acquisition & Analysis	2
EMEC 121	Automation Concepts	3
EMEC 122	Process Automation Diagrams-P&ID	3
EMEC 247	Instrumentation, Process, Control & Measurement Systems	4
	Total Credits:	**18/19**

Career Potential: Biomanufacturing Technician, Biomanufacturing Fill-line Operator, Biomanufacturing Equipment Operator,

Automotive Technology

Business & Technology

Degree awarded: Associate in Applied Science; Specialized Diploma conferred

Program Narrative

Today's vehicles are highly sophisticated, using advanced technology that the average car-owner cannot maintain. Customers need and expect qualified automotive technicians now more than ever. Because of this, job opportunities for well-trained technicians continue to grow.

NCC's program provides students with high-level technical understanding of current developments in the automotive service profession. Our program focuses on the mastery of technology as you prepare for the workplace. The two-year program is approved by GM and Chrysler, and features both classroom work and supervised experience at a sponsoring dealership or approved automotive service facility. Northampton's GM Automotive Service Educational Program (ASEP) and the Chrysler College Automotive Program (CAP) are both certified by the National Automotive Technician Education Foundation.

Program Features

As a student in NCC's associate's degree program you can choose among three different options: the GM ASEP, Chrysler CAP, and Comprehensive programs. The ASEP and CAP options focus on courses devoted exclusively to current either GM or Chrysler vehicles. Comprehensive students may select courses which provide product specific information from either GM or Chrysler or non-product specific automotive courses. Our specialized diploma in Automotive Technology can be completed in just two semesters.

Our program requires practicums so you can apply their classroom theory in the real world. During your practicum, you will work under the guidance of a mentor at an approved sponsoring automotive service facility. The knowledge and skills gained in this setting are extremely valuable.

The cost of tuition, fees, hand tools and other expenses are the responsibility of the student, however, since students are employees of sponsoring dealerships and approved service facilities, they can earn while they learn. Some sponsors also provide a cash bonus to be used for tuition. Although this bonus is not part of the regular pay, it is based on performance at the sponsoring employer during the term of the program.

Program Requirements

Enrollment in this program is limited, so apply early. As part of the application process, you will be required to secure a sponsor for your practicums. Assistance will be provided by the automotive staff during the application process. You must also have a valid driver's license and be prepared to purchase an entry level set of hand tools.

Program Outcomes

Graduates of these programs will:

- Have the ability to enhance a positive attitude toward the dignity of work and professionalism.

- Function effectively in a working team of ideologically and culturally diverse persons.
- Think logically and decisively in the essential areas of automotive diagnostics and problem solving.
- Demonstrate competence in the use of general and highly specialized tools and equipment.
- Read and comprehend technical information and materials from printed and electronic sources relevant to the diagnosis and repair of automotive systems.
- Communicate effectively with differing views on both technical and lay levels.
- Communicate in writing, concisely and accurately, technical and interpersonal automotive topics.
- Adapt readily to the complexities of automotive technology and environments.
- Understand and accept learning as a lifelong requirement to enhance lives and careers.

Automotive Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
AUTO/ASEP/AUTC 101	Automotive Engines	4
AUTO/ASEP/AUTC 103	Automotive Brakes	3
AUTO/ASEP/AUTC 104	Automotive Suspension & Alignment	3
AUTO/ASEP/AUTC 105	Automotive Electrical Systems	3
CMTH 102	Speech Communication	3
		16
	Second Semester	
AUTO 145	Winter Practicum I	2
AUTO/ASEP/AUTC 121	Automotive Air Conditioning & Heating Systems	3
AUTO/ASEP/AUTC 125	Advanced Automotive Electronic Systems	3
ENGL 101C	English I	3
MATH 103	Applications in Mathematics	3
		14
	Summer Session	
AUTO 175	Summer Practicum	4
	Third Semester	
AUTO 203G	Automotive Shop Management Practices	3
AUTO/ASEP/AUTC 211	Automotive Fuel and Emission Systems	3
AUTO/ASEP/AUTC 221	Advanced Engine Performance	3
AUTO/ASEP/AUTC 224	Advanced Automotive Studies	3
ENGL 151C	English II	3
PHYS 152	Physical Science II	3
		18
	Fourth Semester	
AUTO 245	Winter Practicum II	2
AUTO/ASEP/AUTC 225	Mechanical Drive Train Systems	4
AUTO/ASEP/AUTC 226	Automatic Transmission Systems	4
GEOG 121	Intro to Environmental Problems	3
HUMA 121	The American Work Experience	3
		16
	Total Credits:	**68**

- ASEP are GM-specific courses and AUTC are Chrysler-specific courses.
- Completion of AUTO 230G satisfies the Writing Intensive (WI) requirement for this program.
- Computer competencies are included in various courses in this program; thus, completing the program automatically satisfies the computing requirement for this program.
- Recommended additional non-credit courses: PA Safety Inspection and Welding for Auto Techs.

Automotive Technology,

Specialized Diploma

Course Code	Course Title	Credits
AUTO/ASEP/AUTC 103	Automotive Brakes	3
AUTO/ASEP/AUTC 104	Automotive Suspension & Alignment	3
AUTO/ASEP/AUTC 105	Automotive Electrical Systems	3
AUTO/ASEP/AUTC 125	Advanced Automotive Electronic Systems	3
AUTO 145	Winter Practicum I	2
AUTO/ASEP/ AUTC___	Automotive Electives	9

MATH ___	Mathematics Elective (QL)	3
	Total Credits:	**26**

Career Potential: Automotive Service Technician, Auto Electronics Specialist, Transmission and Drive Train Specialist, Alignment Specialist

Leading to: Service Writer, Service Manager, Shop Foreman, Specialty Technician, Specialty Repair Shop Owner

Automotive Technology ASE Certified Technicians Online Program

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

ASE certified technicians (A1 + L1) now have a convenient and faster option for earning an associate's degree. Northampton's Automotive Technology Online program is designed for Master ASE technicians looking to advance or change their careers. If you have the qualifications, you can receive 44 credits toward your degree from your ASE certifications. The remaining 24 credits may be taken through Northampton's Online Learning division.

Program Requirements

To enter this program you must apply to the college and indicate that you are interested in the online degree option. You will need to demonstrate current ASE certifications by having ASE send your transcript directly to the college. You may also gain credit for AUTO 224 by submitting proof of OEM or aftermarket training equaling 45 to 60 hours of training.

Upon acceptance, you can start taking online courses to fulfill your degree requirements. You will need to take the college placement test in reading and writing before taking English I. Please refer to the college's web site for further information on placement testing.

For more information on the program, please contact the Director of Automotive Programs @ 610-861-5327.

Program Outcomes

Graduates of these programs will:

- Have the ability to enhance a positive attitude toward the dignity of work and professionalism.
- Function effectively in a working team of ideologically and culturally diverse persons.
- Think logically and decisively in the essential areas of automotive diagnostics and problem solving.
- Demonstrate competence in the use of general and highly specialized tools and equipment.
- Read and comprehend technical information and materials from printed and electronic sources relevant to the diagnosis and repair of automotive systems.
- Communicate effectively with differing views on both technical and lay levels.
- Communicate in writing, concisely and accurately, technical and interpersonal automotive topics.
- Adapt readily to the complexities of automotive technology and environments.
- Understand and accept learning as a lifelong requirement to enhance lives and careers.

Automotive Technology Program - ASE Certified Technicians,

Associate in Applied Science Degree

Course Code	Course Title	Credits
AUTO _____	Courses taken through ASE Certification	33
AUTO _____	Courses given for 2 years Work Experience	8
AUTO _____	Course given for 45-60 hrs OEM or non OEM training	3
		44
AUTO 203G	Automotive Shop Management Practices*	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
ENGL 151C	English II	3
GEOG 121	Intro to Environmental Problems	3
HUMA 121	The American Work Experience	3
MATH 103	Applications in Mathematics	3
PHYS 152	Physical Science II	3
		24
	Total Credits:	**68**

- You must have completed ENGL I01 and be taking ENGL 151 before taking AUTO 203G.
- Completion of AUTO 203G satisfies the Writing Intensive (WI) requirement for this program.
- Computer competencies are included in various courses in this program; thus, completing the program

automatically satisfies the computing requirement for this program.
- Recommended additional non-credit courses: PA Safety Inspection and Welding for Auto Techs.

Biological Science

Allied Health & Sciences

Degree awarded: Associate in Science

Program Narrative

Are you interested in pursuing a bachelor's degree in Biological Science? Are your career goals in the areas of medicine or scientific research? Northampton's Biological Science program is an affordable way to start. With a curriculum that parallels the first two years of most four-year programs, NCC can save you thousands of dollars on your undergraduate degree.

NCC's program can be customized to prepare you for the range of majors and fields that are based in biological sciences, including environmental sciences, genetics, molecular biology and more. By working closely with an advisor, you can choose the right electives, and stay on track with the requirements of the transfer college of your choice.

Program Features

Northampton has dual admissions agreements with a variety of colleges. These arrangements enable you to have admission to Northampton and the four-year institution you select. You will receive close advising, and, based on your performance, our agreements guarantee you easy transfer of credits. NCC also offers a transfer agreement with Pennsylvania State University-Berks/Lehigh Valley and State University of New York-College of Environmental Sciences and Forestry.

Program Requirements

We expect you to have an adequate background in chemistry and algebra. If you need to develop this background, you may take the necessary preparatory classes prior to, or during your first semester.

Program Notes

Please note that General Ecology and Organic Chemistry I are only offered in the Fall semester, and Genetics and Organic 2 are only offered in the Spring semester.

Students planning to pursue a graduate program in dentistry or medicine should contact Dr. Charles Achenbach. Students interested in graduate programs in Veterinary Medicine should contact Dr. Charles Rinehimer. Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Understand fundamental concepts of Biology, which characterize the various life science fields including Botany, Environmental Science, Genetics, Cellular and Molecular Biology and Zoology.
- Demonstrate oral and written communication skills necessary for sharing discipline-specific knowledge and communicating professionally.
- Conduct scientific inquiry and research on biological science topics as they relate to science, technology and society.
- Proficiently function in laboratory and field settings, using modern scientific instrumentation, including microscopes, measuring devices, and computer technology.
- Demonstrate understanding of the fundamentals of lab safety, to ensure both personal and environmental safety.
- Understand the use of the scientific method, interpretation of scientific data, and scientific literature.
- Be prepared to transfer to a four-year Bachelor's Program or a pre-med, pre-vet, or other pre-professional program.

Biological Science,

Associate in Science Degree

Course Code	Course Title	Credits
	First Semester	
BIOS 107	Biology I	4
CHEM 120	General Chemistry I	4
ENGL 101C	English I	3
----------	Mathematics Elective (QL) +	3
		14
	Second Semester	
BIOS 150	Biology II	4
CHEM 220	General Chemistry II	4
ENGL 151C	English II	3
CMTH 102	Speech Communication	3
----------	Mathematics Elective (QL) +	3
		17
	Third Semester	
BIOS 2__	Biology Elective ++	4
CHEM 201G	Organic Chemistry I	4
----------	Electives	6
		14
	Fourth Semester	
BIOS 2__	Biology Elective ++	4

CHEM 251G	Organic Chemistry II	4
----------	Electives	8
		16
	Total Credits:	**61**

+ Mathematics Elective options: MATH 140, 145, 150, 160, 175, 176, 180, 181, 210, 211. To insure transfer, electives should be selected to meet the requirements of the appropriate transfer institution.

++ Biology Electives: Students are required to take two of three Biology courses of 206, 210 or 260. For students with an Environmental Science intent, BIOS 206 and 210 are recommended. For students with an Integrative Biology intent, BIOS 260 and either 206 or 210 are recommended.

- For the Electives, students must select one course from the list of approved courses in each of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT) and Social Science: Scientific Study of Human Behavior (SSHB).
- One course must be designated Diversity (D).
- Completion of CHEM 201G satisfies the program-related Writing Intensive (WI) requirement. In addition, one Elective course must be taken in a Writing Intensive (WI) section.
- Computer competencies are included in various program courses. Thus, completing the program automatically satisfies the computing requirement for this program.

Career Potential: Leading to transfer degrees for careers in: Research, Teaching, Medicine, Forestry Management, Biotechnology, Pharmaceutical Technology, Environmental Studies, Veterinary Medicine

NCC students have transferred to: Cedar Crest College, East Stroudsburg University Florida Institute of Technology, Kutztown University, Millersville University, Moravian College Pennsylvania State University, Rochester Institute of Technology, Temple University, University of Colorado, West Chester University, Many others nationwide

Biotechnology

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Program Narrative

Major improvements in agriculture, breakthroughs in health care, energy production, solutions to environmental challenges - biotechnology is changing our world in exciting ways. Biotech is also one of the more rapidly expanding and diverse areas of employment in today's economy. A career in a biotechnology-related field could lead you to the development of new products and processes to improve the quality of life.

NCC graduates are positioned to compete for a wide range of positions in the chemical and pharmaceutical industries, governmental institutions such as the FDA, USDA, Department of Defense, NIH, EPA, forensics laboratories, the cosmetic industry, biomedical research institutions and the expanding field of green energy.

Students entering this program should be interested in science and should have taken high school classes in biology, chemistry and algebra (or the equivalent). Students who have not taken chemistry or algebra may do so before beginning the program.

Program Features

Students in NCC's Biotechnology program receive a solid background in math and science and practical knowledge in biotechnology. Students also gain good laboratory and critical thinking skills that make them attractive to employers in the biotechnology and pharmaceutical industry as manufacturing or research technicians. In addition this program prepares students to transfer to a four year institution should they want to pursue a Bachelors degree in Biotechnology.

The program can be completed on a part time or full time basis.

Optional Fifth Semester for Biotechnology AAS Degree

Students in the program have the option to acquire additional skills by attending a capstone semester at Penn State focusing on nanotechnology. This optional fifth semester of study will provide students with hands-on experience using state-of-the-art equipment found in industries that apply nanotechnology. Students who are interested in pursuing this training should work closely with their advisor to ensure that they choose those electives that will best prepare them for the capstone semester.

Program Outcomes

Graduates of the program will:

- Demonstrate the ability to work in a typical biotechnology laboratory or manufacturing facility while following appropriate safety procedures and regulations.
- Demonstrate an understanding of biotechnological principles and concepts.
- Demonstrate proficiency in the practice and theory of modern biotechnology instrumentation.
- Show the ability to follow instructions and work both independently and collaboratively on a wide variety of projects.
- Demonstrate literacy in data manipulation and analysis using computerized spreadsheets and graphing programs.
- Apply statistics to analyze the credibility of scientific results.
- Demonstrate the ability to communicate results both orally and through written reports in an effective and efficient manner.
- Apply all the steps of the scientific method to research, design, perform, and report on a solution to a scientific problem.

- Demonstrate the ability to apply results of previous research to new experimental applications.

Biotechnology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
BIOS 107	Biology I	4
BIOT 184	Introduction to Biotechnology	3
CHEM 120	General Chemistry I	4
ENGL 101C	English I	3
MATCH 140	College Algrebra	3
		17
	Second Semester	
BIOS 150	Biology II	4
BIOT 185	Biotechnology Techniques	4
CHEM 220	General Chemistry II	4
ENGL 151	English II (Report Writing Option)	3
		15
	Summer Session	
BIOT 188 or ---------	Biotechnology Internship or Restricted Elective *	1/3/4
	Third Semester	
BIOS 202	Microbiology	4
BIOT 190	Industrial Biotechnology	3
CHEM 201	Organic Chemistry I	4
CMTH 102	Speech Communication	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)+	3
		17
	Fourth Semester	
BIOT 202	Biotechnology Seminar	1
BIOT 220	General Biotechnology	4
MATH 150	Introductory Statistics	3
----------	Arts and Humanities Elective (AH) +	3
----------	Elective +	3
		14
	Total Credits:	**64/66/67**

***Internship is **highly recommended.** Students who elect not to take or are unable to secure an internship are required to take one of the restricted elective courses to complete the AAS degree: BUSA 101, BUSA 114, BUSA 260, CMTH 105, SOCA 103 or CHEM 251.

+ One course must be designated Writing Intensive (WI) and one Diversity (D).

Nanofabrication Specialization (Optional 5th Semester)

Semester at the Nanofabrication Facility at Pennsylvania State University, Main Campus

NANF 211	Materials, Safety and Equipment Overview for Nanofabrication	3
NANF 212	Basic Nanofabrication Processes	3
NANF 213	Thin Films in Nanofabrication	3
NANF 214	Lithography for Nanofabrication	3
NANF 215	Materials Modification in Nanofabrication	3
NANF 216	Characterization, Packaging, and Testing of Nanofabricated Structures	3
		18

Career Potential: Laboratory Technician, Process Supervisor, Quality Control Technician, Manufacturing Operator/Technician, Research Technician, Forensic Lab Technician, Environmental Lab Technician

Business Administration

Business & Technology

Degree awarded: Associate in Arts

Program Narrative

For practical, business-minded students, Northampton is a great way to save money while getting the first two years of a degree completed. Our Business Administration program prepares you for transfer into a four-year institution in the fields of accounting, business, economics, finance, marketing, and business administration. The program is accredited by the Association of Collegiate Business Schools and Programs (ACBSP).

By working closely with an advisor, you can carefully select your courses and ensure that all of your credits will transfer and be applicable to your ultimate degree goals. We also recommend that you refer often to the catalog of the college or university to which you plan to transfer.

Program Features

NCC's Business Administration program offers a balanced mix of liberal arts and specialized courses. Classes in accounting, business law, economics and statistics provide the foundation you'll need as you advance in the business world.

This program can be completed in the day or evening, on a full-time or part-time basis. If you are entering the Business Administration or Business Management degree programs in the evening, you can generally take most required courses during any semester, if you have the prerequisites. A few courses are not offered in the evening every semester so it's important to develop your schedule accordingly to avoid any delay in graduation.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Transfer to four-year institutions in the fields of accounting, finance, management, marketing, economics, and business administration.
- Develop a strong foundation of general business knowledge.
- Gain an exposure to courses in Social Science and Liberal Arts.
- Possess an understanding of basic computer applications.
- Possess skills necessary to communicate ideas effectively in college, in business, and in life.
- Gain an understanding of business ethics and their application in business.
- Completion of ECON 251G satisfies the program-related Writing Intensive (WI) requirement. In addition, one General Education Elective must be taken in a Writing Intensive (WI) section.
- Completion of ENGL151C satisfies the Diversity requirement.

Business Administration

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
ACCT 101	Financial Accounting I	3
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
----------	General Education Elective +	3
		15
	Second Semester	
ACCT 151	Accounting II	3
BUSA 152	Business Law I	3
ENGL 151 C	English II	3
MATH____	Mathematics Elective (QL) ++	3
----------	General Education Elective +	3
		15
	Third Semester	
ACCT 202	Managerial Accounting	3
BUSA 201	Business Statistics I	4
ECON 201	Macroeconomics	3
----------	General Education Elective +	3
----------	Mathematics (QL) or Science (SCI) Elective ++	3/4
		16/17
	Fourth Semester	
ECON 251G	Microeconomics	3
----------	Science Elective (SCI) ++	3/4
----------	Business Elective +++	3
----------	General Education Elective +	3
----------	Elective ++++	3
		15/16
	Total Credits:	**61/63**

+ For the General Education Electives, students must select one course from the list of approved courses in Arts & Humanities (AH), three Social Science courses (Societies and Institutions over Time (SIT) or Scientific Study of Human Behavior (SSHB), one of which must be Social Science: Societies and Institutions over Time (SIT).

++ The student is required to take a total of three courses in Mathematics (QL) and/or Science (SCI); one of which must be a Mathematics course and one a Science course. The third course may be either Mathematics or Science. Only the following Mathematics courses will count as requirements or electives for the degree: MATH 140, 165, 175, 176, 180, 181.

+++ Business Elective options: ACCT 201, 205, 251; BUSA 101, 131, 202, 205, 221, 226, 235.

++++ The Elective should be chosen based on its transferability and applicability to the AA degree as listed in the elective section of the catalog.

- Completion of ECON 251G satisfies the program-related Writing Intensive (WI) requirement. In addition, one General Education Elective must be taken in a Writing Intensive (WI) section.
- Completion of ENGL 151C satisfies the Diversity (D) requirement.

The AS in Business Administration prepares you for these other areas of concentration: Accounting, Marketing, Management, Human Resource Management, Business Communications, Economics, Leading to positions in: Corporate, Small Business Management

NCC students have transferred to: Bloomsburg University, DeSales University, East Stroudsburg University, Kutztown University, Moravian College, Pennsylvania State University, Temple University, West Chester University

Business Management

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

If you're ready to get started, Northampton's Business Management program will prepare you for a career in business, government or non-profit organizations. This program is designed for those looking to enter the business world upon graduation rather than transferring to a four-year institution. Our program emphasizes the practical applications of business studies. For those interested in pursuing a four-year degree, we recommend our Business Administration degree.

Program Features

The program offers a strong foundation of common core course work on which to build your managerial skills. You'll also complete a capstone experience called the International Business Practice Firm, a virtual business in a state-of-the-art facility. Through this experience, you will perform various business functions (i.e. Accounting, Human Resources, Marketing/Sales, and Purchasing/Inventory Control) as the firm transacts business with students in other simulated companies in the U.S. and in other countries. This hands-on experience gives you marketable employment skills and insight into the global market economy. The International Business Practice Firm also enhances critical thinking, problem solving and communication skills.

Our Business Management associate's degree program accredited by the Association of Collegiate Business Schools and Programs (ACBSP). As you near graduation, your instructors and the professionals in Northampton's Career Services Office can help you find employment in your area of interest.

Program Requirements

The Business Management Program contains provisions for three credits of free electives in addition to the General Education electives. This program can be completed in the day or evening, on a full-time or part-time basis. Traditional day students must take Principles of Marketing (BUSA 131) and Human Resource Management (BUSA 226) in a fall semester; Management Fundamentals (BUSA 205) is to be taken in a spring semester.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Exhibit strong written and verbal communication skills necessary to work effectively with people in the business field.
- Demonstrate an understanding of general business concepts in the areas of accounting/finance, economics, management, and marketing.
- Demonstrate proficiency in current office information technology.
- Gain an understanding of business ethics and their application within the legal environment of business.
- Develop team skills in completing everyday business tasks through participation in a virtual enterprise capstone experience.

Business Management,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
BUSA 131	Principles of Marketing	3
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
MATH___	Mathematics Elective (QL) +	3
		15
	Second Semester	
ACCT 101	Financial Accounting I	3
CISC 104	Microcomputer Applications	4
BUSA 152	Business Law I	3

BUSA 205	Management Fundamentals	3
ENGL 151	English II	3
		16
	Third Semester	
ACCT 155	Accounting for Managers	3
BUSA 221G	Business Communications	3
BUSA 226	Human Resources Management	3
ECON 201	Macroeconomics	3
----------	General Education Elective	3
		15
	Fourth Semester	
BUSA 211	Personal Finance	3
BUSA 260	International Business Practice Firm	3
BUSA___	Business Elective ++	3
----------	General Education Elective	3
----------	Elective	3
		15
	Total Credits:	**61**

+ Mathematics Elective options: MATH 140, 150, 160, 165, 175, 176, 180, 181

++ Business Elective options: BUSA 114, 115, 137, 141, 201, 202, 231, 235, 252, 261, 262, 263, 264, 293 (BUSA 293 - Special Studies requires permission from the department)

- For the General Education Electives, students must take two courses from at least two of the following areas: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT) or (Social Science: Scientific Study of Human Behavior (SSHB). *Note:* ECON 201 is required, so only one additional SSHB course may be used as a General Education Elective.
- One course should be designated as Diversity (D).
- Completion of BUSA 221G satisfies the Writing Intensive (WI) requirement.

Career Potential: Self-Employment, Management Trainee, Entry-level Positions, Leading to: Corporate Management, Sales Management

Chemical Technology

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Program Narrative

If you have an interest in science, problem solving, chemistry or laboratory work, you may be well suited for a career in chemical technology. Chemical technicians work in a wide variety of settings, including environmental, government, and forensic laboratories. As a technician, you could also find employment in manufacturing, the cosmetics industry, petroleum and food companies, industrial plants, hospitals and clinics. This field requires studies in chemistry and math, lab skills, and a knowledge of computers. Good oral and written communication skills are also important.

Northampton has developed a comprehensive program that combines classroom instruction and laboratory practice to provide you with a range of foundation knowledge. After successfully completing the two-year program, you will hold an associate in applied science degree and be well prepared to enter today's work force as a technician. You will also be steps ahead of others who are also entering the field. Many employers prefer technicians with two-year degrees because they know that college-trained technicians are productive much sooner than untrained entry-level employees.

Program Features

The NCC Chemical Technology degree can be completed in the day or evening, on a full-time or part-time basis. Northampton's professionals in the Placement Office, as well as instructors within the Chemical Technology program, can assist you in finding employment in your area of interest.

Students in the program have the option of acquiring additional skills by attending a capstone semester emphasizing nanotechnology at Penn State. This optional fifth semester of study and will provide students with hands-on experience using state-of-the-art equipment found in industries that apply nanotechnology. Students who are interested in pursuing this training should work closely with their advisor to ensure that they choose those electives that will best prepare them for the capstone semester.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate an understanding of chemical principles and concepts.
- Demonstrate proficiency in the operation of laboratory apparatus and instruments used in chemistry.
- Describe the purpose and use of specific apparatus and instruments pertinent to chemical technology.
- Demonstrate competence in sampling and handling of chemicals.

Chemical Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	

CHEM 120	General Chemistry I	4
CHEM 121	Lab Safety Procedures	2
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
----------	General Education Elective	3
		15

Second Semester

CISC 101	Introduction to Computers	3
CHEM 220	General Chemistry II	4
ENGL 151	English II	3
MATH 140	College Algebra	3
PHYS 101	Physics I	4
		17

Third Semester

CHEM 201G	Organic Chemistry I	4
CHEM 228	Chemical Methods and Instrumentation	3
PHYS 151	Physics II	4
----------	General Education Elective	3
		14

Fourth Semester

CHEM 251	Organic Chemistry II	4
CHEM 225	Quantitative Analysis	4
----------	General Education Elective	3
----------	Elective	3
		14
	Total Credits:	**60**

- For the General Education Electives, students must select one course from the list of approved courses in each of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT) and Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- CHEM 201G satisfies the program-related Writing Intensive (WI) requirement. In addition, one General Education Elective must be taken in a Writing Intensive (WI) section.

Nanofabrication Specialization (Optional 5th Semester)

Semester at the Nanofabrication Facility at Pennsylvania State University, Main Campus

NANF 211	Materials, Safety and Equipment Overview for Nanofabrication	3
NANF 212	Basic Nanofabrication Processes	3
NANF 213	Thin Films in Nanofabrication	3
NANF 214	Lithography for Nanofabrication	3
NANF 215	Materials Modification in Nanofabrication	3
NANF 216	Characterization, Packaging, and Testing of Nanofabricated Structures	3
		18

Career Potential: Industrial Technician, Environment Laboratory Technician, Forensic Laboratory Technician, Allied Health Laboratory Technician

NCC students have transferred to: Cedar Crest College DeSales University, East Stroudsburg University, Memphis University, Ohio State University

Chemistry

Allied Health & Sciences

Degree awarded: Associate in Science

Program Narrative

If you are interested in pursuing a bachelor's degree in chemistry or a career in the areas of medicine or scientific research, Northampton's Chemistry program is an affordable way to start. With a curriculum that parallels the first two years of most four-year programs, NCC can save you thousands of dollars on your undergraduate degree. By working closely with an advisor, you can choose the right electives, and stay on track with the requirements of the transfer college of your choice.

Another option some graduates have chosen is to enter the job market upon completion of their two-year Chemistry degree. NCC's program prepares you for the range of fields that are based in chemistry, including environmental sciences, manufacturing, biotechnology and more.

Program Features

Northampton has dual admissions agreements with a variety of colleges. These arrangements enable you to have admission to Northampton and the four-year institution you select. You will receive close advising, and, based on your performance, our agreements guarantee you easy transfer of

credits. Courses in this program are offered primarily during the day.

Program Requirements

While there are no special admissions requirements for the Chemistry program, certain courses in the program require a background in English, algebra, and chemistry. If you are lacking background in these areas, you should acquire it during the summer preceding your first semester. Northampton's admissions and counseling staff can answer any questions or concerns you may have regarding your enrollment into this program.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate the ability to solve problems and explain chemical processes.
- Apply scientific principles and skills in conducting experiments, and in the use of instrumentation and analysis of results.
- Present research in acceptable written and oral format using scientific literature and computer aided analysis
- Demonstrate the ability to work successfully in independent and collaborative settings.
- Demonstrate best practice of safety and laboratory techniques and procedures.

Chemistry,

Associate in Science Degree

Course Code	Course Title	Credits
	First Semester	
CHEM 120	General Chemistry I	4
CHEM 121	Lab Safety Procedures	2
CMTH 102	Speech Communication	3
ENGL 101C	English 1	3
MATH 180	Calculus I	4
		16
	Second Semester	
CHEM 220	General Chemistry II	4
ENGL 151C	English II	3
MATH 181	Calculus II	4
PHYS 215	Physics for Science and Engineering I	5
		16
	Third Semester	
CHEM 201G	Organic Chemistry I	4
PHYS 225	Physics for Science and Engineering II	5
MATH 210	Calculus III	4
----------	General Education Elective	3
		16
	Fourth Semester	
CHEM 225	Quantitative Analysis	4
CHEM 251	Organic Chemistry II	4
----------	General Education Elective	3
----------	General Education Elective	3
		14
	Total Credits:	**62**

- For the General Education Electives, students must select one course from the list of approved courses in each of the following categories: Arts and Humanities (AH); Social Science: Societies and Institutions over Time (SIT) and Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of CHEM 201G satisfies the program-related Writing Intensive (WI) requirement. In addition, one General Education Elective must be taken in a Writing Intensive (WI) section.
- Computer competencies are included in various program courses, specifically CHEM 120, 220, 210G, and 251. Thus, completing the program automatically satisfies the computing requirement for this program.

NCC students have transferred to: East Stroudsburg University, Kutztown University, Lafayette College, Lehigh University, Lock Haven University, Penn State University, University of Hawaii

The A.S. in CHEMISTRY prepares you for these other areas of study: Medical School, Biotechnology, and a multitude of chemistry, related industries.

Communication Design

Humanities & Social Sciences

Degree awarded: Associate in Applied Science

Two options: New Media and Print/Web

Program Narrative

Communication design is a dynamic and growing profession in the "new media" marketplace. Development in new Internet technology and capabilities, as well as the proliferation of PDA's (personal digital assistants such as the iPod, iPhone and iPad and the APPS that run on them), video game design programs, interactive multimedia such as blogs and wiki's, and social networking technologies like

Twitter, Facebook and MySpace have generated new markets that require talented people with interactive design skills and knowledge to create content for these new communication networks.

The Communication Design program will assist you in developing the creative, conceptual and technical skills necessary to meet the challenge of the digital, print, and new media marketplaces and create the opportunity for you to gain employment in the field, or to transfer to a four year institution. The program offers students an opportunity to select a 'specialized track' in their second year of studies - either Print/Web or New Media.

Hands-On Learning

Northampton's Communication Design program offers you a well-balanced education through classroom and computer lab learning experiences under the supervision of talented and experienced instructors, in the College's state-of-the-art facilities. This education will be critical when graduates enter the workforce or transfer to baccalaureate degree programs.

Who should apply for this program?

- High school graduates.
- College students.
- Individuals presently employed in the communications field seeking an opportunity to upgrade current skills and knowledge.
- Individuals considering a career change.

Job Opportunities

As a graduate of the Communication Design you can expect to find employment as a graphic designer, computer graphics artist, free-lance designer, web designer, or new media designer with such employers as advertising agencies, graphic design studios, newspapers, publication companies, in-house corporate communication departments, to name a few.

Program Requirements

Applicants to the program should contact the Admissions Office at 610-761-5500 for general information on applying to the College. You can visit the Art Department web site for specific details on the Communication Design program and to view examples of student work. The URL is http://art.northampton.edu.

**Program course of studies offered only in the day.*

Program Outcomes

Graduates of the program will:

- Recognize and use technical and aesthetic terminology of communication design.
- Create work that exhibits proficiency in both design and technical aspects of new media including print, web, motion design, and video game design.
- Demonstrate an understanding of the design industries' best-practices and theories that reflect current and historical cultural trends.
- Understand basic principles and practices of marketing and advertising.
- Create a professional design portfolio (hard copy and web) and professional identity kit.
- Be prepared for an entry-level position in communication design.

Communication Design - New Media Option,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ARTA 101	Art History Survey	3
ARTA 107	Drawing I	3
ARTA 111	Principles of 2-D Design and Color	3
ARTA 170	Computer Graphics	4
ENGL 101C	English I	3
		16
	Second Semester	
ARTA 110	Principles of 3-D Design	3
ARTA 124	Drawing II	3
ARTA 130	Introduction to Web Site Design	3
ARTA 180	Digital Design and Typography I	3
ENGL 151	English II	3
		15
	Third Semester	
ARTA 131	Intro to 3-D Computer Animation	3
ARTA 132	Web Animation with Flash	3
ARTA 181	Digital Design and Typography II	3
ARTA 230	New Media Theory and Practice	3
CMTH 102	Speech Communication	3
----------	Elective +	3
		18
	Fourth Semester	
ARTA 133	Advanced 3-D Computer Animation	3
ARTA 136	Interactive Programming with Flash ActionScript	3

ARTA 231	New Media Production	3
ARTA 285	Portfolio Workshop	3
----------	Social Science: Societies and Institutions over Time Elective (SIT)	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
		18
	Total Credits:	**67**

+ Suggested Elective: ARTA 138, 240, 282.

- One course should be designated as Diversity (D)
- Students must take one Social Science (SIT or SSHB) in a Writing Intensive (WI) section.
- Computer competencies and mathematics outcomes are included in various courses in this program. Thus, completing the program automatically satisfies the computing and mathematics requirements for this program.

NOTE: This program requires attendance of day classes and can not be completed taking only evening classes.

Communication Design - Print/Web Option,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ARTA 101	Art History Survey	3
ARTA 107	Drawing I	3
ARTA 111	Principles of 2-D Design and Color	3
ARTA 170	Computer Graphics	4
ENGL 101C	English I	3
		16
	Second Semester	
ARTA 110	Principles of 3-D Design	3
ARTA 124	Drawing II	3
ARTA 130	Introduction to Web Site Design	3
ARTA 180	Digital Design and Typography I	3
ENGL 151	English II	3
		15
	Third Semester	
ARTA 132	Web Animation with Flash	3
ARTA 181	Digital Design and Typography II	3
ARTA 190	Creative Designs	3
ARTA 240	Advanced Web Site Design	3
ARTA 282	Digital Photography	3
		15
	Fourth Semester	
ARTA 210 or CISC 128	Package Design or Client-Side Scripting	3/4
ARTA 285	Portfolio Workshop	3
CMTH 102	Speech Communication	3
----------	Social Science: Societies and Institutions over Time Elective (SIT)	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
----------	Elective +	3
		18/19
	Total Credits:	**64/65**

+ Suggested Elective: ARTA 131, 136, 164 or 256.

- One course should be designated as Diversity (D).
- Students must take one Social Science Elective (SIT or SSHB) in a Writing Intensive (WI) section.
- Computer competencies and mathematics outcomes are included in various courses in this program. Thus, completing the program automatically satisfies the computing and mathematics requirements for this program.

NOTE: This program requires attendance of day classes and can not be completed taking only evening classes.

Career Potential: Assistant Art Director, Computer Graphic Artist, Newspaper/Magazine layout, Package Design, Pre-Press Technician, Illustrator, Web Designer, Corporate Communications Designer

NCC Communication Design graduates have transferred to:

- Cedar Crest College
- Kuztown University
- Moravian College

- School of Visual (NYC)
- Pratt Institute (NYC)
- Tyler School of Art at Temple University (Philadelphia)
- University of the Arts (Philadelphia)
- Savannah College of Art and Design (Savannah, Georgia)
- Ringling College of Art and Design (Sarasota, Florida)
- Academy of Art University (San Francisco, CA)
- Rochester Institute of Technology (Rochester, NY)

Communication Studies

Humanities & Social Sciences

Degree awarded: Associate in Arts

Program Narrative

Advertising, politics, journalism, public relations- a career in any of these diverse fields can be exciting and fulfilling. And it can start with a degree in Communications Studies from Northampton.

Northampton's Communications Studies program offers courses that are commonly taken during the first two years of a bachelor's degree in the field. Working closely with your advisor, you can plan a schedule that will prepare you for entry to a four-year college.

With a BA, you can look forward to employment opportunities in a wide range of areas, including health care, the performing arts, education, the media, radio and TV broadcasting and more. Even if you don't plan to go into a specific communications-related field, a communications degree will help you be more versatile and flexible in your work. You may also find that you can change career paths with ease.

Our program is available at NCC's Bethlehem and Monroe campuses. Courses are primarily offered in the daytime.

Program Features

Our program provides a well-rounded background in communication and general education that will prepare you to transfer to a four-year university. In addition to the general education core requirements, the program requires 12 hours of communication studies courses. To suit your future plans, a variety of electives in the communications field allow you to customize your studies in key areas such as mass communications, technology, business, and the performing arts. Finally, the program requires you to take specific courses in fields that have impacted communication studies, such as sociology and psychology.

Program Outcomes

Graduates of the program will:

- Transfer to a four-year college or university.
- Demonstrate a clear understanding of, and ability to think critically about, communication in theory and practice.
- Demonstrate effective use of communication skills and experience to be an effective group member and/or leader.
- Adapt communication skills to a variety of audiences and contexts.
- Communicate effectively within a culturally diverse society.

Communication Studies,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
PSYC 103	Introduction to Psychology	3
MATH___	Mathematics Elective (QL)	3
----------	Elective +	3
		15
	Second Semester	
CMTH 214	Interpersonal Communication	3
ENGL 151C	English II	3
SOCA 103G	Principles of Sociology	3
----------	Science Elective (SCI)	4
----------	Elective +	3
		16
	Third Semester	
CMTH 215	Intercultural Communication	3
CMTH 231	Small Group Communication	3
----------	Social Science: Society and Institutions over Time Elective (SIT)	3
----------	Arts and Humanities Elective (AH)	3
----------	Elective +	3
		15
	Fourth Semester	

CMTH 230G	Introduction to Communication Theory	3
----------	Social Science: Society and Institutions over Time Elective (SIT)	3
----------	Mathematics (QL) or Science (SCI) Elective	3/4
----------	Electives +	6
		15/16
	Total Credits:	**61/62**

+Electives must be selected from those courses which are AA eligible or those below:

Mass Communication

- CMTH 103 - Mass Communication
- CMTH 126 - The Communication Arts
- CMTH 220 - Introduction to Film
- CMTH 225G - Scriptwriting
- JOUR 101 - Journalism and Society
- JOUR 102 - Copyediting
- JOUR 103 - Newswriting
- JOUR 203 - Writing for Public Relations

Business

- BUSA 101 - Introduction to Business
- BUSA 115 - Introduction to International Business
- BUSA 131 - Principles of Marketing
- BUSA 137 - Principles of Selling
- BUSA 152 - Business Law I

Performing Arts

- CMTH105 - Public Speaking
- CMTH 110 - Introduction to Theatre
- CMTH 111 - Acting I
- CMTH 212 - Acting II
- CMTH/ENGL 211 - Plays: Classical to Contemporary
- CMTH 206 - Directing
- CMTH 189 - Stage Voice and Movement

Communication Technology

- ARTA 130 - Introduction to Web Site Design
- ARTA 170 - Computer Graphics
- ARTA 171 - Desktop Publishing
- CMTH 115 - Technical Theatre
- CMTH 117 - Stagecraft
- CMTH 180 - Multimedia Production
- CMTH 182 - Advanced Multimedia Production

Career Potential: Media, Advertising, Performing Arts Health Care, Politics Radio-TV/Broadcasting, Public Relations, Business/Marketing, Social/Human Services, Education, Journalism

Computer Aided Design

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Computer Aided Design is the state of the art technology in fields such as industrial design and architecture. Northampton's Computer Aided Design program integrates the specialized knowledge and skills of design with the power, speed and diversity of computers using state-of-the-industry CAD software. This program will prepare you for a variety of positions or offer you valuable training to stay competitive if you are already employed within the field.

As a student in our program, you will learn computer aided design layout and 3D solid modeling definition. You will also gain the knowledge of design and drafting needed for multiple disciplines, including mechanical, civil, architectural and electrical engineering and design.

Most major courses are offered during the day in the fall and spring. All other courses are offered both day and evening.

Program Features

Courses offer a mix of classroom lecture and hands-on experience in the Computer Aided Design Lab. This well-rounded education will prepare you for a position in today's engineering office environment where computer skills are essential.

As a graduate of Northampton's program, you will be qualified for employment as an entry-level mechanical designer, design drafter, CAD operator or CAD Technician. Professionals in Northampton's placement and counseling offices, as well as instructors within the program, will assist you in meeting your employment and career goals.

If you are a student from an area vocational-technical school, you may receive advanced placement for work completed at the vocational-technical school. If you have had previous related experience, you may challenge some of the introductory courses such as engineering graphics, and receive credit.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate an ability to work independently and apply interpersonal and technical skills to solve problems as a member of a multi-disciplinary team.
- Demonstrate proficient drafting and computer skills in using AutoCAD to create mechanical designs for product parts, assemblies and system configurations,

apply appropriate drafting standards, dimensioning and tolerancing for same.
- Demonstrate competent technical writing skills.
- Demonstrate competent speaking skills when working with diverse groups.
- Demonstrate competent technical vocabulary and AutoCAD 2D and 3D drafting skills applicable to a variety of engineering disciplines, including mechanical, electrical, architectural, and civil engineering.

Computer Aided Design,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 101	Introduction to Computers	3
ENGG 100	Engineering Graphics	3
ENGG 115	Computer Aided Design I	3
ENGL 101C	English I	3
MATH 140	College Algebra	3
		15
	Second Semester	
ENGG 125	Manufacturing Processes	3
ENGG 261	Computer Aided Design II	3
ENGL 151	English II +	3
MATH 145	Trigonometry	3
----------	General Education Elective (AH or SIT)	3
		15
	Third Semester	
CMTH 102	Speech Communication	3
EMEC 101	Electrical Fundamentals	3
ENGG 220	Design Project	3
ENGG 262	Computer Aided Design III	3
PHYS 101	Physics I	4
		16
	Fourth Semester	
ENGG205	Parametric Modeling	3
ENGG 230	Team Project	3
PHYS 151	Physics II	4
----------	Electives	6
		16
	Total Credits:	**62**

+ Students are strongly advised to select the Technical Writing option of ENGL 151.

- For the General Education Elective, students must select one course from the list of approved courses in one of the following categories: Arts & Humanities (AH); or Social Science: Society and Institutions over Time (SIT).
- One course should be designated as Diversity (D).
- Completion of both ENGG 220 and 230 satisfies the Writing Intensive (WI) requirement for this program.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirements for this program.

Career Potential: Mechanical Designer, Design Draftsperson, CAD Technician, CAD Operator, Manufacturing Drafting Technician

Computer Information Systems

Business & Technology

Degree awarded: Associate in Science

Program Narrative

Northampton's associate's degree in Computer Information Systems program parallels the first two years of most information systems bachelor's degree programs. By working closely with your advisor, you can earn transferable credits that will allow you to enter a four-year institution with the first two years of course material completed. You'll save thousands of dollars on your education in the process.

Our curriculum includes computer programming, introductory computer architecture, and general education courses. A computer science elective will allow you to expand your knowledge in the area of operating systems or microcomputers.

Program Features

Depending on your plans and available time, you can complete this program in two years of full-time study with day and evening classes, or in three years of part-time evening study.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Possess a fundamental and comprehensive understanding of the current field of computing upon which future growth within the field can be realized.
- Be equipped with computer competencies necessary to compete in the business world.
- Use critical thinking to evaluate computing problems and explore options for their solution.
- Apply effective approaches for problem solving and data modeling.
- Solve problems related to business computing and implement these solutions.
- Possess an awareness of the ethical concerns of computing professionals.

Computer Information Systems,

Associate in Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 115	Computer Science I	4
ENGL 101C	English I	3
MATH___	Mathematics Elective (QL) +	3
----------	Social Science: Society and Institutions over Time Elective (SIT)	3
----------	Elective	3
		16
	Second Semester	
CISC 125	Computer Science II	4
CMTH 102	Speech Communication	3
ENGL 151	English II	3
MATH 165 or MATH 180	Applied Calculus or Calculus I	3/4
----------	Elective	3
		16/17
	Third Semester	
CISC 230	Data Structures & Algorithm Analysis	4
----------	Science Elective (SCI)	4
----------	Arts and Humanities Elective (AH)	3
----------	Elective	3
		14
	Fourth Semester	
CISC 225	Computer Organization	4
CISC___	CISC Elective ++	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
----------	Electives	6
		16
	Total Credits:	**62/63**

+ Mathematics Elective options: MATH 140, 145, 160, 175, 176, 181, 210, 211

++ CISC Elective options: CISC 104, 106, 270

- The General Education Electives specified above must be selected from the list of approved courses in each of the categories: Arts and Humanities (AH); Social Science: Society and Institutions over Time (SIT) and Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Two courses must be taken in Writing Intensive (WI) sections. One must be selected from among the General Education Electives; the second must be selected from: PHIL 111G, PHIL 202G, or PSYC 103G.
- All Electives must be chosen from the list of courses which are applicable to AA and AS degrees, and should be chosen with transferability in mind.

Career Potential: Systems Manager

NCC students have transferred to: DeSales University, East Stroudsburg University, Muhlenberg College, Rutgers University, Temple University, Pennsylvania State University, Millersville University

Computer Information Technology: Application Development

Business & Technology

Degree awarded: Associate in Applied Science

Northampton's Computer Information Technology program prepares you for employment upon graduation. The first year of the program is designed to provide a strong foundation in basic PC applications, operating systems and client-side scripting. You can then choose from several options for specialization, depending upon your area of interest.

You can complete an associate's degree in Computer Information Technology in two years of full-time study with day and evening classes, or in three or four years of part-time study. If you wish, you can also complete multiple specializations. For instance, a student can complete both the networking and security options. Doing so will add only one year of additional full time study, however you will finish

with two associate's degrees, making you an even more competitive candidate in the job market.

The program also offers two specialized diplomas for those students who may already have college degrees but are now seeking to retrain for the Information Technology workforce.

Program Narrative

The Application Development option provides the educational foundation you need to build proficiency with computer equipment, operating systems, productivity software, and programming languages, as well as skills necessary for web development such as client-side and server-side scripting and web server administration. The first year of the program is designed to provide a strong foundation in basic PC applications, operating systems and client-side scripting. In the second year you will learn additional languages, server-side scripting, web server administration and database systems. In addition, the second year of study includes object-oriented programming and development of Windows applications.

Completion of this program prepares you for entry-level web developer, programmer and database programmer positions. Depending on your plans and available time, you can complete this program in two years of full-time study with day and evening classes, or in three or four years of part-time study.

Program Outcomes

Graduates of the program will:

- Gain fundamental and comprehensive understanding of the current field of computing upon which future growth within the field can be realized.
- Gain computer competencies necessary to compete in the business world.
- Use critical thinking to evaluate computing problems and explore options for their solutions.
- Use effective approaches for problem solving and data modeling.
- Gain experience in solving problems related to business computing and implementing these solutions.
- Develop awareness of the ethical concerns of computing professionals.

Computer Information Technology: Application Development,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 100	Computer Technology I	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
MATH___	Mathematics Elective (QL) +	3
----------	General Education Elective	3
		16
	Second Semester	
CISC 104	Microcomputer Applications	4
CISC 105	Microcomputer Operating Systems	4
CISC 128	Client-side Scripting	4
ENGL 151	English II	3
		15
	Third Semester	
BUSA 221G	Business Communications	3
CISC 158	Server-side Scripting	4
CISC 270	Data Base Systems	4
CISC 278	Web Server Administration	4
----------	General Education Elective	3
		18
	Fourth Semester	
CISC 145	Visual Software Development	4
CISC 150	Object-Oriented Programming	4
ECON 201	Macroeconomics	3
----------	Elective	3
		14
	Total Credits:	**63**

+ Mathematics Elective options: MATH 140, 145, 150, 160, 165, 175, 176, 180, 181, 202, 210, 211

- For the General Education Electives, students must take two courses, one from at least two of the following areas: Arts & Humanities (AH); Social Science: Society and Institutions over Time (SIT) or Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of BUSA 221G satisfies the Writing Intensive (WI) requirement.

Career Potential: Entry level programmer, Entry level database programmer, Software Developer, Web Developer, Web Administrator

Computer Information Technology: Application Programming

Business & Technology

Specialized diploma conferred

Northampton's Computer Information Technology program prepares you for employment upon graduation. The first year of the program is designed to provide a strong foundation in basic PC applications, operating systems and client-side scripting. You can then choose from several options for specialization, depending upon your area of interest.

You can complete an associate's degree in Computer Information Technology in two years of full-time study with day and evening classes, or in three or four years of part-time study. If you wish, you can also complete multiple specializations. For instance, a student can complete both the networking and security options. Doing so will add only one year of additional full time study, however you will finish with two associate's degrees, making you an even more competitive candidate in the job market.

The program also offers two specialized diplomas for those students who may already have college degrees but are now seeking to retrain for the Information Technology workforce.

Program Narrative

If you want to re-train for the programming field, but already have a degree in another field, or if you have a limited amount of time to devote to your education, a specialized diploma in Application Programming could be a good choice. This program is intended for part-time study.

By completing this specialized diploma program, you'll gain a strong foundation in PC applications, computer programming and database design. Students learn advanced features of office application software, as well as computer program design and implementation. We emphasize the use of Visual Basic as a stand-alone programming language as well as its use with selected Windows applications. You'll also study Java programming and Structured Query Language.

Program Outcomes

Graduates of the program will:

- Gain fundamental and comprehensive understanding of the current field of computing upon which future growth within the field can be realized.
- Gain computer competencies necessary to compete in the business world.
- Use critical thinking to evaluate computing problems and explore options for their solutions.
- Use effective approaches for problem solving and data modeling.
- Gain experience in solving problems related to business computing and implementing these solutions.
- Develop awareness of the ethical concerns of computing professionals.

Computer Information Technology: Application Programming Option

Specialized Diploma

Course Code	Course Title	Credits
CISC 100	Computer Technology I	4
CISC 104	Microcomputer Applications	4
CISC 128	Client-side Scripting	4
CISC 145	Visual Software Development	4
CISC 150	Object-Oriented Programming	4
CISC 270	Data Base Systems	4
	Total Credits:	**24**

Career Potential: Completion of this specialized diploma prepares you for the positions of entry-level programmer and database programmer.

Computer Information Technology: Networking

Business & Technology

Degree awarded: Associate in Applied Science

Northampton's Computer Information Technology program prepares you for employment upon graduation. The first year of the program is designed to provide a strong foundation in basic PC applications, operating systems and client-side scripting. You can then choose from several options for specialization, depending upon your area of interest.

You can complete an associate's degree in Computer Information Technology in two years of full-time study with day and evening classes, or in three or four years of part-time study. If you wish, you can also complete multiple specializations. For instance, a student can complete both the networking and security options. Doing so will add only one year of additional full time study, however you will finish with two associate's degrees, making you an even more competitive candidate in the job market.

The program also offers two specialized diplomas for those students who may already have college degrees but are now seeking to retrain for the Information Technology workforce.

Program Narrative

As with the other Computer Information Technology degrees at Northampton, the first year of this program is designed to provide a strong foundation in basic PC applications, operating systems, and considerable microcomputer experience. In the second year of the

program, you will focus on networking courses that teach you to repair, maintain, and administer state-of-the-art network hardware and operating systems along with the applications utilized by these systems.

Upon completion of the Computer Information Technology Program-Networking Option, you will be prepared to gain employment as a PC and network systems technician, network technician, or network administrator. Graduates of the program will be prepared to pass the tests required to obtain the Cisco Certified Networking Associate (CCNA), Net+ Certification, NOVELL Certified Netware Administrator (CNA) (if CISC 262 is taken), the A+ PC Support Certification, Microsoft MCP and/or MCSA certification, and the security and certification.

Depending on your plans and available time, you can complete this program in two years of full-time study with day and evening classes, or in three years of part-time evening study.

Program Outcomes

Graduates of the program will:

- Gain fundamental and comprehensive understanding of the current field of computing upon which future growth within the field can be realized.
- Gain computer competencies necessary to compete in the business world.
- Use critical thinking to evaluate computing problems and explore options for their solutions.
- Use effective approaches for problem solving and data modeling.
- Gain experience in solving problems related to business computing and implementing these solutions.
- Develop awareness of the ethical concerns of computing professionals.

Computer Information Technology: Networking Option

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 100	Computer Technology I	4
CISC 231	Data Communication and LANs (CCNA I) +	4
ELEC 130	Computer Systems & Applications I	4
ELEC 131	Introduction to Networking Hardware	2
ENGL 101C	English I	3
		17
	Second Semester	
CISC 105	Microcomputer Operating Systems	4
CISC 267	Internetworking and Routing (CCNA II) +	4
CMTH 102	Speech Communication	3
ENGL 151	English II	3
MATH___	Mathematics Elective (QL) ++	3
		17
	Third Semester	
BUSA 221G	Business Communications	3
CISC 265	Networking Architectures	4
CISC 271	Intermediate Routing, LAN Switching and WANs (CCNA III & IV)+	4
ELEC 254	Computer Systems and Applications II	3
----------	General Education Elective	3
		17
	Fourth Semester	
CISC 272	Building Scalable Internetworks (CCNP I)	3
----------	CISC or ELEC Elective +++	3/4
----------	General Education Elective	3
----------	General Education Elective	3
----------	Elective	3
		15/16
	Total Credits:	**66/67**

+ The Cisco Networking Academy Program courses must be taken in sequential order (as indicated).

++ Mathematics Elective options: MATH 140, 145, 150, 160, 165, 175, 176, 180, 181, 202, 210, 211

+++ Recommended CISC or ELEC Elective based on Certification goals of individual

A+: CISC 104, ELEC 255

CCNA: CISC 104, ELEC 255, ELEC 206

Net+: CISC 104, CISC 262, CISC 265, ELEC 206

Novell C.N.A.: CISC 104, CISC 262

MSCA: CISC 104, CISC 265, CISC 270

Other CISC or ELEC electives may also be taken

- For the General Education Electives, students must take three courses from at least two of the following areas: Arts & Humanities (AH); Social Science: Society and Institutions over Time (SIT) or Social Science: Scientific Study of Human Behavior (SSHB).

Note: **ECON 201 is required**, so only one additional SSHB course may be used as a General Education Elective.

- One course should be designated as Diversity (D).
- Completion of BUSA 221G satisfies the Writing Intensive (WI) requirement.

Career Potential: PC Technician, Network Systems Technician, Network Administrator

Computer Information Technology: Security

Business & Technology

Degree awarded: Associate in Applied Science

Northampton's Computer Information Technology program prepares you for employment upon graduation. The first year of the program is designed to provide a strong foundation in basic PC applications, operating systems and client-side scripting. You can then choose from several options for specialization, depending upon your area of interest.

You can complete an associate's degree in Computer Information Technology in two years of full-time study with day and evening classes, or in three or four years of part-time study. If you wish, you can also complete multiple specializations. For instance, a student can complete both the networking and security options. Doing so will add only one year of additional full time study, however you will finish with two associate's degrees, making you an even more competitive candidate in the job market.

The program also offers two specialized diplomas for those students who may already have college degrees but are now seeking to retrain for the Information Technology workforce.

Program Narrative

As with the other Computer Information Technology programs at Northampton, the first year of the program is designed to provide a strong foundation of basic PC applications, client operating systems, and the basics of computer networking. In the second year you will focus on the core of computer and network security. Topics include the Security+ and Server+ curriculum, Law and Ethics, and a course in which you will build a number of secure systems and have them tested by your peers.

Completion of the Computer Information Technology program - Security Option, prepares you for an entry-level position as an Information Assurance Specialist, Security Administrator, Security Technologist, or similar.

Program Outcomes

Graduates of the program will:

- Gain fundamental and comprehensive understanding of the current field of computing upon which future growth within the field can be realized.
- Gain computer competencies necessary to compete in the business world.
- Use critical thinking to evaluate computing problems and explore options for their solutions.
- Use effective approaches for problem solving and data modeling.
- Gain experience in solving problems related to business computing and implementing these solutions.
- Develop awareness of the ethical concerns of computing professionals.

Computer Information Technology: Security Option

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 100	Computer Technology I	4
CISC 231	Data Communications and LANs (Cisco I)	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
		14
	Second Semester	
CISC 105	Microcomputer Operating Systems	4
CISC 267	Internetworking & Routing (Cisco II)	4
ENGL 151	English II	3
MATH ___	Mathematics Elective (QL) +	3
----------	Social Science: Society and Institutions over Time Elective (SIT) + +	3
		17
	Third Semester	
BUSA 221G	Business Communication	3
CISC 180	Introduction to Network Security	4
CISC 205	Introduction to Network Operating Systems	4

----------	Technical Elective ++ +	4
		15
	Fourth Semester	
CISC 280	Law and Ethics of Computer Security	3
CISC 282	Measure/Counter-Measure	4
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB) ++	3
----------	Arts and Humanities Elective (AH) ++	3
----------	Elective	3
		16
	Total Credits:	**62**

+ Mathematics Elective options: MATH 140, 145, 150, 160, 165, 175, 176, 180, 181, 202, 210, 211

++ One of the Arts and Humanities (AH) or Social Science: Scientific Study of Human Behavior (SSHB) or Societies and Institutions over Time (SIT) Electives must also be designated as Diversity (D).

+++ Technical Elective Options: recommend CISC271, but also CISC 115, 125, 128, 145, 225, 230, 231, 262, 265, 267, 270, 277, 29X, ELEC 130 can be selected.

- Completion of BUSA 221G satisfies the Writing Intensive (WI) requirement.

Career Potential: Information Assurance Specialist, Security Administrator, Security Technologist, or similar.

Computer Information Technology: Web Programming

Business & Technology

Specialized diploma conferred

Northampton's Computer Information Technology program prepares you for employment upon graduation. The first year of the program is designed to provide a strong foundation in basic PC applications, operating systems and client-side scripting. You can then choose from several options for specialization, depending upon your area of interest.

You can complete an associate's degree in Computer Information Technology in two years of full-time study with day and evening classes, or in three or four years of part-time study. If you wish, you can also complete multiple specializations. For instance, a student can complete both the networking and security options. Doing so will add only one year of additional full time study, however you will finish with two associate's degrees, making you an even more competitive candidate in the job market.

The program also offers two specialized diplomas for those students who may already have college degrees but are now seeking to retrain for the Information Technology workforce.

Program Narrative

A specialized diploma in Web Programming is an excellent option for students interested in obtaining the skills they need for a career in web site development without completing a full associate's degree. This program introduces students to the knowledge and experience necessary to develop the technical aspects of web sites, and intended for part-time study.

Students learn several of the most common web-programming technologies. They include Java, JavaScript, Active Server Pages, Applet programming and Servlet programming. The final course combines all of the skills you've acquired into the development of a comprehensive site.

Program Outcomes

Graduates of the program will:

- Gain fundamental and comprehensive understanding of the current field of computing upon which future growth within the field can be realized.
- Gain computer competencies necessary to compete in the business world.
- Use critical thinking to evaluate computing problems and explore options for their solutions.
- Use effective approaches for problem solving and data modeling.
- Gain experience in solving problems related to business computing and implementing these solutions.
- Develop awareness of the ethical concerns of computing professionals.

Computer Information Technology: Web Programming Option

Specialized Diploma

Course Code	Course Title	Credits
CISC 100	Computer Technology I	4
CISC 104	Microcomputer Applications	4
CISC 128	Client-side Scripting	4
CISC 150	Object-Oriented Programming	4
CISC 158	Server-side Scripting	4
CISC 270	Database Systems	4
CISC 278	Web Server Administration	4

Total Credits: 28

Career Potential: Completion of this program prepares you for entry-level web developer positions.

Computer Maintenance & Service Technology

Business & Technology
Degree awarded: Associate in Applied Science;
Certificate also awarded

Program Narrative

With every aspect of our lives dependent on computers and information technology, there's a continuing demand for the professionals who can modify, repair and upgrade personal computers, computer peripherals and local area networks (LAN). Northampton's Computer Maintenance and Service Technology program helps meet that demand by producing graduates who have the latest knowledge and hands-on skills.

Graduates of the program go well beyond the A+ certification standards in their ability to solve computer-related problems effectively, minimizing downtime in the organization. We offer both an associate's degree and a certificate option. If you already have a degree and are looking to retrain or expand your skill set, the certificate option can put you on the fast track to a career growth. Our associate's degree is also designed for accelerated completion. No matter which option you select, it's good to remember that keeping up with the constant changes in technology beyond graduation is essential to a successful career over the long term.

Some of the jobs for which you will be prepared include computer technician, LAN technician, computer field service technician, computer helpdesk representative, and technical sales consultant.

Program Features

Courses in circuit analysis and digital electronics provide the fundamental knowledge of electronic concepts. Courses in microcomputer applications and operating systems improve your familiarity with using the computer and its basic software. Building upon that foundation, students learn the hows and whys of equipment selection, installation techniques, testing, diagnostics, and repair and upgrade methods of the latest PC and netware technology. Coursework includes computer systems and applications, networking, and systems maintenance.

Industry-experienced instructors teach effective problem solving, from data collection to corrective action and testing. Students carry out lab work in all electronics courses in NCC's Hartzell Technology Hall facility, using the latest equipment to keep you current and job-ready. Two practicums provide a work-based internship experience for you to apply your knowledge and skills in real-world situations either within the College campus or in a local company. For those completing an associate's degree, our general education courses are also an investment in your growth. These required courses improve your ability to communicate, relate to other people and cultures, and solve fundamental problems.

By enrolling in a combination of day and evening courses, full-time students can complete the degree requirements within 68 weeks or the certificate requirements in 52 weeks. Because the full-time program is accelerated, it is also intensive. Full-time students are advised to prepare to commit the extra time and effort needed to graduate in 17 months. All course-work is provided during the evening for part-time students.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Apply a working knowledge of AC and DC circuits and understand the physical principles of passive circuit devices.
- Demonstrate knowledge of the physical principles, theory and operation of solid state devices that commonly apply to computer system repair.
- Apply knowledge of digital number systems, logic gates, combinational and sequential logic circuits.
- Describe the internal structure of a microprocessor and electrical signals it processes.
- Interface external devices to a microprocessor system and write appropriate software to obtain desired interface performance.
- Describe the structure, function and operation of a computer system and its interrelated components and networks.
- Demonstrate proficient research and computer skills in data gathering and analysis.
- Measure data accurately and safely using standard test equipment and analyze and present data in an acceptable and standardized manner.
- Solve common service related problems using both a reactive and proactive approach.
- Demonstrate a basic framework of technical vocabulary and graphics interpretation as it applies to computer systems.
- Demonstrate observational, integrative, and synthetic skills.
- Construct and troubleshoot digital electronic circuits from schematic diagrams.
- Perform service-related administrative functions.
- Service and maintain computerized equipment at subsystem and component level.

Computer Maintenance & Service Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	

CISC 100	Computer Technology I	4
ELEC 101	DC/AC Circuit Analysis I	4
ELEC 130	Computer Systems and Applications I	4
ELEC 131	Introduction to Networking Hardware	2
ENGL 101C	English I	3
		17
	Second Semester	
CISC 105	Microcomputer Operating Systems	4
CMTH 102	Speech Communication	3
ELEC 126	Digital Electronics I	3
ELEC 251	Network Installation and Maintenance	3
ENGL 151	English II +	3
		16
	Summer I Semester	
ELEC 254	Computer Systems and Applications II	3
ELEC 271 or ----------	Computer Electronics Practicum I or Technical Elective ++	3
		6
	Summer II Semester	
ELEC 255	Computer Systems Maintenance	3
ELEC 272G or ----------	Computer Electronics Practicum II or Technical Elective ++	3
		6
	Fall Semester	
PHYS 152	Physical Science II ++ +	3
MATH___	Mathematics Elective (QL) ++++	3
----------	General Education Elective	3
----------	General Education Elective	3
----------	Elective	3
		15
	Total Credits:	**60**

+ Students are strongly advised to select the Report Writing option of ENGL 151.

++ Technical Elective options: CISC 115, 125, 128, 150, 158, 262, 265, 267, 270; OPTO 220; ELEC 208, 226.

+++ CHEM 120 or PHYS 101 (and higher levels) may be substituted for PHYS 152

++++ Mathematics Elective (QL) options: MATH 103, 120, 140, 145, 150, 160, 165, 175, 176, 180, 181, 210, 211

- Completion of ELEC 272G satisfies the Writing Intensive (WI) requirement. If ELEC 272G is not taken, a General Education course must be taken in a Writing Intensive (WI) section.
- For the General Education Electives, students must choose two courses from the lists of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Society and Institutions over Time (SIT) or Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).

Computer Maintenance & Service Technology,

Certificate

Course Code	Course Title	Credits
	Fall Semester	
CISC 100	Computer Technology I	4
ELEC 101	DC/AC Circuit Analysis I	4
ELEC 130	Computer Systems and Applications I	4
ELEC 131	Introduction to Networking Hardware	2
		14
	Spring Semester- First Year	
CISC 105	Microcomputer Operating Systems	4
CMTH 102	Speech Communication	3
ELEC 126	Digital Electronics I	3
ELEC 251	Network Installation and Maintenance	3
		13
	Summer I - First Year	
ELEC 254	Computer Systems and Applications II	3

ELEC 271 or ---	Computer Electronics Practicum I or Technical Elective ++	3
		6
	Summer II Semester	
ELEC 255	Computer Systems Maintenance	3
ELEC 272G or ---	Computer Electronics Practicum II or Technical Elective ++	3
		6
	Total Credits:	**39**

+ Technical Elective options: CISC 115, 125, 128, 150, 158, 262, 265, 267, 270; OPTO 220;
ELEC 208, 226

Career Potential: Computer Technician, LAN Technician, Helpdesk Operator, Technical Sales Consultant

Computer Science

Business & Technology
Degree awarded: Associate in Science

Program Narrative

If you are planning to pursue a bachelor's degree in computer science, Northampton's associate's degree program can be an affordable way to start. Our program parallels the first two years of standard four-year computer science degree programs. By working closely with your advisor, you can plan your course of study to ensure that you will enter the transfer school of your choice prepared to complete your degree.

Graduates of our program who complete a bachelor's degree are prepared for a variety of sophisticated positions in the computer field: as an applications, systems programmer, programmer/analyst or software developer.

Program Features

The Northampton Computer Science curriculum includes computer programming, introductory computer architecture, mathematics, and general education courses. Depending on your plans and available time, you can complete this program in two years of full-time study with day and evening classes or in three to five years of part-time evening study.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Use effective approaches for problem solving and algorithm development.
- Use critical thinking to evaluate computing problems and explore options for their solution.
- Be experienced in solving problems related to computer programming and implementing these solutions.
- Have experience in algorithm analysis and data abstraction.
- Have comprehensive understanding of computer hardware needed to critically interpret technical information.
- Explore the nature, characteristics, and design issues of contemporary computing systems.
- Develop abstract thinking skills necessary to compete at a transfer institution.

Computer Science,
Associate in Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 115	Computer Science I	4
ENGL 101C	English I	3
MATH 180	Calculus I	4
---	Social Science: Society and Institutions over Time Elective (SIT)	3
		14
	Second Semester	
CISC 125	Computer Science II	4
CMTH 102	Speech Communication	3
ENGL 151C	English II	3
MATH 181	Calculus II	4
---	Elective	3
		17
	Third Semester	
CISC 230	Data Structures and Algorithm Analysis	4
---	Science Elective (SCI)	4
---	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
---	Elective	3
		16
	Fourth Semester	
CISC 225	Computer Organization	4
---	Arts and Humanities Elective (AH)	3

----------	Electives	9
		16
	Total Credits:	**61**

- The General Education Electives must be selected from the list of approved courses in each of the categories: Arts and Humanities (AH); Social Science: Society and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB); Science (SCI).
- One course should be designated as Diversity (D).
- Two courses must be taken in Writing Intensive (WI) sections. One must be selected from among the General Education Electives; the second must be selected from: PHIL 111G, PHIL 202G, or PSYC 103G.
- All Electives must be chosen from the list of courses which are applicable to AA and AS degrees, and should be chosen with transferability in mind; MATH 210 (Calculus III) is recommended.

Career Potential: Computer Sciences

NCC students have transferred to: DeSales University, East Stroudsburg University, Kutztown University, Moravian College, Muhlenberg College, Pennsylvania State University, Lehigh University

Construction Management

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Large-scale construction requires well-trained managers whose role it is to stay on top of every detail of the job. Construction managers must to be familiar with all aspects of the building process, but they also need to be strong leaders. Because of this, our program not only covers essentials such as codes and blue print reading, but also includes business law, ethics, planning and scheduling and other important management tools. This comprehensive approach results in graduates who are ready to be effective managers and administrators within the construction industry.

Program Features

Through our balanced mix of liberal arts, specialized courses and hands-on training, Northampton offers you tremendous opportunity for success and professional growth. Our required practicum provides essential real world experience. During the practicum you will have the opportunity to perform various construction management functions, gain insight into the challenges of managing a site, and enhance your critical thinking, problem solving and communication skills.

This program can be completed in the day or evening, on a full-time or part-time basis. A few courses may not be offered in the evening every semester so students are advised to plan their schedule carefully to avoid any delay in graduation.

Program Requirements

Students are required to secure a workplace sponsor for the practicum. Assistance can be provided by the construction management staff to facilitate sponsorship.

Core Progressive Threads of Construction Management

- Leadership and supervisory
- Health and Safety
- Legal and ethical
- Effective Communication and Public Relations

Program Outcomes

Graduates of Northampton Community College's A.A.S. degree in Construction Management will be able to:

- Understand the importance of management functions of planning, organizing, leading and controlling.
- Describe construction operations as they relate to production processes, logistics, specifications, and regulatory requirements.
- Integrate health and safety issues within the confines of regulatory compliance and current industry standards to the construction industry.
- Interpret building and zoning codes and other regulatory requirements.
- Interpret technical information in the form of architectural drawings, schematics, specifications, graphs and procedures.
- Utilize effective written and oral communication skills.
- Demonstrate the ability to work both independently and as part of a team.
- Apply legal and ethical principles related to the construction industry.
- Demonstrate a basic understanding of accounting/ finance functions as it relates to the construction industry.

Construction Management,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 101	Introduction to Computers	3
CMGT 101	Introduction to Construction Codes	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
MATH 120	Nature of Mathematics (QL)	3
		15

	Second Semester	
CMGT 102	Construction Materials and Methods	3
CMGT 103	Construction Safety and Health	3
ENGL 151	English II (Technical Writing option)	3
PHIL 202G	Ethics and Moral Problems (AH)	3
----------	General Education Elective (SIT)	3
		15
	Third Semester	
ACCT 101	Financial Accounting I	3
BUSA 205	Management Fundamentals	3
CMGT 104	Construction Print Reading	3
CMGT 105	Project Management and Administration	3
CMGT 106	Construction Planning and Scheduling	3
----------	Elective	3
		18
	Fourth Semester	
BUSA 152	Business Law I	3
CMGT 201	Construction Estimating	3
CMGT 202	Construction Supervision and Leadership	3
CMGT 203	Construction Management Practicum	6
----------	General Education Elective (SSHB)	3
		18
	Total Credits:	**66**

- For the General Education Electives, students must take one course from Social Science: Societies and Institutions over Time (SIT) and Social Science: Scientific Study of Human Behavior (SSHB); one course should be designated as Diversity (D).
- Completion of PHIL 202G satisfies the Writing Intensive (WI) requirement.

Career Potential: Construction technicians and tradespersons, Construction managers, Construction administrators, Construction and building inspectors, Construction cost estimators Superintendents, Project managers, Construction company owners, Construction equipment operators, Code enforcement officer, Construction specifier

Criminal Justice

Humanities & Social Sciences

Degree awarded: Associate in Applied Science

Program Narrative

Northampton's Criminal Justice program offers you a wealth of opportunities. Whether you want to enter the workforce after two years of study, transfer to a four-year program, or enhance your education as a professional already employed in this field, NCC's program is for you.

Courses taught by experts in the field include hands-on education within a classroom setting. You'll obtain an understanding of the criminal justice system, be adept with the language and culture of the criminal justice profession, and gain the knowledge you need to live up to professional expectations. The program is fully available at the Bethlehem and Monroe campuses, as well as online. Course work is offered mainly in the daytime on campus, with some courses available only in the evening.

Program Features

The program serves three types of students: those seeking entry-level employment in the field, those already employed in the system who seek professional advancement, and those who plan to pursue a bachelor's degree in criminal justice, criminology or related disciplines.

Our program readies you for employment in police departments, prisons, or community correction and treatment centers. It can also prepare you for a career in state and federal agencies such as the Federal Bureau of Investigation, Treasury Department, Drug Enforcement Agency, and the Alcohol Tobacco and Firearms Bureau. If you are interested in working for a specific agency, you should contact that agency early in your studies to determine the specific educational requirements you will need. Professionals in Northampton's Career Services and counseling offices, as well as instructors within the program, can assist you in meeting your career goals.

If your career plan includes a bachelor's degree with specialization in the field, you may want to consider the College's articulation agreements and dual admissions programs with DeSales University, Moravian College or Eastern Kentucky University's College of Law Enforcement. These special partnerships make the move to a bachelor's degree program easier, since we've already ensured that your credits from NCC will transfer. Full transfer also may be possible to other colleges and universities offering baccalaureate degrees in the field. Northampton's Academic Advising Office can offer you support and additional information.

The program can be completed in four semesters as a full-time student taking 15-16 credits per semester. The majority of courses are offered in the day, but three required courses are offered in the evening only. Courses are offered in the fall and spring only.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate understanding of criminological behavior theory as applied by the criminal justice professional in the work environment.
- Understand psychological and sociological theories of crime causation.
- Know the functions, duties and roles of law enforcement officers at various levels in the criminal justice system.
- Show knowledge of criminal law, criminal procedure, civil law and the courts as it relates to the legal system.
- Exhibit awareness of the special needs and functions of the juvenile justice system.
- Develop understanding of the corrections system in the United States.
- Apply the ability to think critically and analytically in various criminal justice work settings.
- Develop excellent professional writing and communication skills.
- Exemplify the basic professional requirements for entry level positions through the criminal justice system.
- Be prepared to transfer to a four year college/university.

Criminal Justice,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CJST 101	Introduction to Criminal Justice	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
PSYC 103	Introduction to Psychology	3
SOCA 103	Principles of Sociology	3
		15
	Second Semester	
CISC 101	Introduction to Computers	3
CJST 111	American Legal System	3
CJST 131	Juvenile Delinquency and Laws Pertaining to Children	3
ENGL 151	English II +	3
PSYC 255	Abnormal Psychology	3
SOCA 150	Deviance	3
		18
	Third Semester	
CJST 115	Criminal Law	3
CJST 121G	Criminology	3
CJST 135 or CJST 145	Law Enforcement and Investigative Techniques or Criminal Justice Ethics	3
SOCA 204	Social Problems	3
----------	Mathematics (QL) or Science Elective (SCI) ++	3/4
		15/16
	Fourth Semester	
CJST 125	Corrections and Rehabilitation	3
CJST 150	Contemporary Issues in Criminal Justice	3
POLS 105G	American Constitutional Law	3
----------	Arts and Humanities Elective (AH)	3
----------	Elective +++	3
		15
	Total Credits:	**63/64**

+ Students are strongly encouraged to complete the Report Writing option of ENGL 151.

++ Mathematics (QL) or Science (SCI) Elective must be chosen from the list of approved General Education Mathematics or Science courses. (NOTE: MATH 103 may not be used.) MATH 150 is recommended for students who intend to transfer.

+++ Elective credits may not be satisfied by any CJST course.

- Completion of both POLS 105G and CJST 121G satisfies the Writing Intensive (WI) requirement.

Career Potential: Police Officer, Correctional Officer, Security Consultant, Community Treatment Facility Staff

Leading to: Federal Security Agency Positions, Criminal Law Enforcement

Culinary Arts

Business & Technology
Degree awarded: Associate in Applied Science;
Specialized Diploma conferred

Program Narrative

Since its creation in 1993, Northampton's Culinary Arts program has earned a reputation as one of the finest of its kind. As a graduate of our program, you will be in demand in a wide variety of settings. Nearly all of the leading food service industry employers in our region - from fine dining restaurants to campus dining services - proudly employ our graduates.

The program provides a year of intensive full-time study that combines theory and lecture with nearly 1,000 hours of hands-on practical application. Students are trained in all the formal classical methods of preparing food and then put that training into practice. Once the culinary training has been completed, students can complete the additional core courses needed to earn their Associate in Applied Science degree. If you already have a college degree, you may prefer to opt for the program's specialized diploma and forgo the core courses required for the associate's degree.

Culinary Arts graduates are trained for careers including chef, line chef, banquet chef, executive chef, baker, pastry chef and caterer. Potential work settings include multi-unit chain restaurants, owner operated restaurants, four-star hotels, private country clubs, corporate food service and catering. Whether you would like to own your own restaurant or work for a large employer, you will find rewarding and satisfying career opportunities with a degree from our program.

Program Features

The program starts with an intensive series of seven culinary modules taught over the first six-month period. This period combines classroom discussion, lecture and demonstration of theories and techniques used in the food service industry, and hands-on skills training. In the second six months of the program, you will be part of the student team that runs the College's fine dining restaurant, Hampton Winds, located in the Gates Center.

Program Requirements

The Culinary Arts Program is a selective admissions program and there will be more applicants than can be accepted. You are therefore encouraged to apply with all necessary paperwork by the preferred deadline dates.

There are two opportunities during the year to enter the program. The preferred application deadline for fall enrollment (courses beginning in August) is February 1st; the preferred spring (courses beginning in March) deadline is October 1st. A completed application includes the application and fee and official high school and college (if applicable) transcripts.

Prior to acceptance, you are required to take the English Placement Test (EPT) and be able to enroll in English 101 or be able to transfer English 101 or its equivalent. Immunizations for Hepatitis A and Hepatitis B and a urinalysis are required for all Culinary Arts Students.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Understand the terminology of the commercial kitchen. This includes terms from several European languages, as well as the accepted terms and titles used in a modern food service establishment.
- Understanding of the operation, maintenance and cleaning of the tools and machines used in a modern foodservice establishment.
- Demonstrate proper sanitation and safety techniques for all aspects of the food service establishment.
- Demonstrate knowledge and application of culinary techniques and methods used in modern food preparation.
- Recognize all of the major food products used in a commercial food service establishment.
- Demonstrate an ability to maintain an organized file of recipes and preparation methods.
- Demonstrate the ability to accurately measure and formulate recipes that result in consistent desired results each and every time, both in quality and cost.
- Demonstrate the ability to organize a food preparation workstation based on menu items to be prepared.

Culinary Arts,

Associate in Applied Science Degree

Course Code	Course Title	Credits
CULA___	Culinary Arts Specialized Diploma Courses	46
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
ENGL 151C	English II	3
----------	Mathematics (QL) or Science (SCI) Elective	3/4
----------	General Education Elective	3
----------	General Education Elective	3
----------	General Education Elective	3
----------	Elective	3
	Total Credits:	**70/71**

- The Mathematics (QL) or Science (SCI) Elective must be selected from the list of General Education Mathematics or Science courses.
- For the General Education Electives, students must take three courses from the list of approved courses in at least two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One General Education course must be taken in a Writing Intensive (WI) section.

Culinary Arts,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
CULA 102	Food Safety and Sanitation	2
CULA 103	Nutrition	2
CULA 105	Product Identification and Stewarding	3
CULA 110	Baking	3
CULA 115	Meat, Poultry and Fish Cutting	3
CULA 120	Skill Development I	3
		16
	Second Semester	
CULA 130	Basic Entrees and Vegetables	3
CULA 145	Restaurant Operations I	8
CULA 170	Skill Development II	4
		15
	Third Semester	
CULA 150	Restaurant Operations II	15
	Total Credits:	**46**

Career Potential: Leading to: Chef, Line Chef, Banquet Chef, Executive Chef, Baker, Pastry Chef, Caterer

Dental Hygiene

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Program Narrative

Dental Hygiene is a rewarding field that offers flexible work schedules and attractive salaries. If you are interested in working directly with clients to help them achieve and maintain optimal oral health, a career in Dental Hygiene could be a great option.

Dental hygienists are licensed oral health professionals who play an essential role in the field of dentistry. Dental hygienists provide a variety of services that prevent, or limit the extent of, cavities and/or gum disease. They also provide educational, clinical and therapeutic services for people of all ages and in every situation. As a licensed hygienist you could have the opportunity to make a difference in the lives of a range of populations, including the medically compromised, mentally or physically challenged, and socially or culturally disadvantaged. While most dental hygienists practice in private dental offices, others provide services in hospitals, private businesses, correctional institutions and a variety of private and public centers.

Northampton's Dental Hygiene program is among the most respected in Pennsylvania. During the two-year program, all pre-clinical and clinical practice occurs in the dental clinic located at the Main campus. Professional hygienists working in the field enhance the hands-on aspects of the clinical portion of the program. The dental hygiene program is competency-based and assesses all clinical and laboratory courses using pass/fail criteria. Students must earn grades of C (75%) or better in all DENH courses to qualify for semester promotion. If you're interested in a higher level of education, Northampton has developed articulation agreements with dental hygiene baccalaureate degree programs to facilitate admissions and the transfer of credits.

Northampton's program in Dental Hygiene is accredited by the Commission on Dental Accreditation. The Commission is a specialized accrediting body recognized by the United States Department of Education. The Commission on Dental Accreditation can be contacted at (312) 440-4653 or at 211 East Chicago Avenue, Chicago, IL 60611-2678. www.ada.org

Program Mission

While upholding the mission and vision of Northampton Community College, the Dental Hygiene Program provides excellent, comprehensive learning experiences to prepare students with the knowledge and clinical skills to competently practice as dental hygienists.

Statement of Values

The Dental Hygiene Program values:

- **Excellence -** Quality in the educational experiences that we provide
- **Innovation** - Curricular responsiveness to adapt quickly to changes in the profession
- **Accountability** - Individual responsibility for his/her actions, growth and development
- **Integrity** - Academic, personal and professional honesty, fairness, ethical conduct and respect for others
- **Engagement** - Involvement in and collaboration with the communities we serve

Program Admissions Requirements

Admission is on a competitive basis. All applicants must submit:

- an application OR a re-entry form
- a change of major form (only if currently enrolled)
- official transcripts (updated copies)
- a completed Career Assessment Form (a new form must be submitted every year)

The minimum admission requirements to the program include:

- Completed high school Biology with a lab component with a grade of B and
- completed high school Chemistry with a lab component with a grade of B (if a candidate did not complete Biology and/or Chemistry with B grades in high school, equivalent courses taken at a post-secondary institution are acceptable substitutes, i.e., NCC CHEM 135 and BIOS 115) and
- an overall high school grade point average (GPA) of 3.0 (B)

The minimum admission requirements to the program for applicants who have completed more than 12 college credits include:

- The most recently completed Biology course with a lab - if completed in high school with a grade of B, or if completed in college, a grade of B minus (i.e., NCC BIOS 115, BIOS 160 or BIOS 204) and
- the most recently completed Chemistry course with a lab - if completed in high school with a grade of B, or if completed in college, a grade of B minus (i.e., NCC CHEM 135) and
- a program-specific college science GPA of 2.70 (possible courses include NCC CHEM 135, BIOS 160 and BIOS 202 only) and
- a cumulative college GPA of 2.70 in all program-specific non-science courses

Meeting the minimum admission requirements does not guarantee admission to the dental hygiene program.

Please Note: Students accepted into the Dental Hygiene program will be required to submit results of a criminal background check and Pennsylvania Child and Elder Abuse History Clearance to the program director.

Deadlines

To receive primary consideration, completed applications must be submitted by February 1. Applications received after this date will be reviewed on a space-available basis.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

1. Students will be competent as defined by the department document, "Competencies for Entry into the Profession of Dental Hygiene." Students must demonstrate competency in the following:

Core Competencies

- Adhere to state and federal laws, recommendations and regulations in the provision of dental hygiene care.
- Model professional behavior.
- Gather, evaluate and use information effectively.
- Reflect on personal performance through self-assessment.
- Communicate effectively with individuals and groups from diverse populations both verbally and in writing.

Health Promotion and Disease Prevention

- Identify risk factors, and develop, implement, and evaluate strategies to promote health and prevent disease.
- Utilize methods to ensure the health and safety of the client and the dental hygienist in the delivery of dental hygiene services.
- Community Involvement
- Assess the oral health needs of the community, and plan, implement, and evaluate programs to address those needs.
- Provide community oral health promotion and disease prevention activities in a variety of settings.

Client Care

- Systematically collect, analyze and record data on the general, oral and social health status of a variety of clients to identify client needs and oral health problems. (Assess)
- Use critical decision making skills to reach conclusions about the client's dental hygiene needs based on all available assessment data. (Diagnose)
- Collaborate with the client, and/or other health professionals, to formulate a comprehensive dental hygiene care plan that is client-centered and based on current evidence-based practices. (Plan)
- Provide specialized treatment as identified in the assessment, diagnosis, and planning phases that includes preventive and therapeutic services designed to achieve and maintain oral health. (Implement)
- Evaluate the effectiveness of the implemented clinical, preventive, and educational services and modify them as needed. (Evaluate)

2. Students will be prepared to successfully complete the National Board Dental Hygiene Examination and the Northeast Regional Board Examination.

3. Students will be satisfied with their dental hygiene education.

4. Clients will be satisfied with dental hygiene services.

Dental Hygiene,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	Summer II Session	
CHEM 135	Chemistry of Life	4
ENGL 101C	English I	3
		7
	First Semester	
BIOS 160	Human Biology	4
DENH 103	Pre-clinical Preventive Oral Health Services	3
DENH 104	Foundations of Preventive Oral Health Services	4
DENH 105	Oral Histology	1
DENH 106	Oral Anatomy	2
DENH 110	Oral Radiology	2
		16
	Second Semester	
BIOS 202	Microbiology	4
DENH 109	Oral Radiology Lab	1
DENH 150	Clinical Preventive Oral Health Services I	3
DENH 152	Preventive Oral Health Services I	2
DENH 153	Periodontology	2
DENH 154	Oral Health Care for Medically Complex Clients and Clients with Special Needs	1
DENH 155	General and Oral Pathology	2
ENGL 151	English II	3
		18
	Summer I Session	
DENH 212	Pharmacology	2
CMTH 102	Speech Communication	3
		5
	Third Semester	
DENH 205	Nutrition for the Dental Health Care Provider	2
DENH 206	Local Anesthesia	2
DENH 210	Clinical Preventive Oral Health Services II	4
DENH 211	Preventive Oral Health Services II	3
DENH 220	Community Dental Health I	1
PSYC 103	Introduction to Psychology	3
		15
	Fourth Semester	
DENH 240	Community Dental Health II	1
DENH 250	Clinical Preventive Oral Health Services III	4
DENH 251	Preventive Oral Health Services III	2
SOCA 103	Principles of Sociology	3
----------	General Education Elective	3
		13
	Total Credits:	**74**

- For the General Education Elective, students must choose one course from the list of approved courses in one of the following categories: Arts and Humanities (AH); Social Science: Societies and Institutions over Time (SIT).
- The free elective requirement has been waived for this program.
- Computer competencies and writing intensive work are included in various courses in this program. Thus, completing the program automatically satisfies the computing and writing intensive requirements for this program.
- Healthcare Provider CPR and Basic First Aid certifications are required immediately prior to Fall Semester - First Year.
- Students must earn grades of "C" or better in all DENH courses to qualify for semester promotion/ graduation.

Career Potential: Dental Hygiene Instructor, Public Health Hygienist, Dental Sales, School Hygienist, Registered Dental Hygienist in a general, periodontic, pediatric, prosthodontic and/or orthodontic private practice.

Transfer Potential: Penn College of Technology, University of West Virginia

Important Resources:

- Career Assessment Form - http://catalog.northampton.edu/Documents/Extras/CareerAssessmentForm.pdf

Diagnostic Medical Sonography

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Specialized Diploma awarded

Program Narrative

With America's growing and aging population, the healthcare sector continues to offer growth in employment opportunities. Sonography is a key part of today's advanced medical practices, and qualified sonography graduates from Northampton find good-paying, flexible and rewarding positions throughout the country.

Completion of the program requirements of Northampton's Associate in Applied Science (AAS) degree or the Specialized Diploma in Diagnostic Medical Sonography allows the graduate the opportunity to sit for the American Registry of Diagnostic Medical Sonographer's (ARDMS) examination.

NCC's sonography program is accredited by the Commission on Accreditation of Allied Health Education Programs (CAAHEP) in collaboration with the Joint Review Committee on Education in Diagnostic Medical Sonography (JRC-DMS).

Diagnostic Medical Sonography
Joint Review Committee on Education in
Diagnostic Medical Sonography
6021 University Blvd, Suite 500
Ellicott, MD 21043
Phone: (443) 973-3251
Fax: (866) 738-3444
www.jrcdms.org
markey@jrcdms.org

Mission Statement

The mission of Northampton's Diagnostic Medical Sonography Program is to provide a quality and comprehensive education in general sonography in a learner-centered environment. The graduates will have the knowledge and skills needed to perform quality sonograms. The graduates will serve as integral members of the health care team by contributing to the diagnosis of the patient's illness. The program will instill in its graduates an understanding of diversity and cultural differences, empathy, and good communication skills. The graduates will be able to critically think and problem solve in order to meet the required examination protocol and technical needs on atypical patients. The graduates will embrace the concept that learning is a life-long experience in order to maintain currency in the dynamic field of sonography.

Program Goals

To produce graduates:

- who are proficient entry-level general diagnostic medical sonographers and display compassion, professionalism, and have good communication skills.
- with a broad knowledge base that enables them to embrace life-long learning.
- who are able to adapt to ever-changing technology in the health care industry.
- who are competent to pass the certification examination.
- who meet or exceed the needs of their employers.

Deadlines

To receive primary consideration, completed applications must be submitted by February 1. Applications received after this date will be reviewed on a space-available basis.

Contact the Admissions Office at 610-861-5500 for further information.

Upon Acceptance into the Sonography Program

The Admissions Office will mail to each student, accepted into the program, a form to be completed for criminal background clearance, and a health form for a complete physical examination. The program will ask for written verification that the essential functions/technical standards can be met.

Associate in Applied Science Degree

This program is designed for the individual without an Allied Health background.

Program Features

The Associate in Applied Science Degree in Diagnostic Medical Sonography at NCC is a 24-month competency-based program beginning in the fall semester of each year. This program is designed for the individual without an Allied Health background. Practice in scanning and instrumentation is done in the lab facility on NCC's campus. The clinical education component of the program is conducted at various clinical affiliates in the Lehigh Valley, Poconos, Bucks County, and New Jersey. There are approximately 1360 hours of clinical education.

Program Admission Requirements

Admission to the program is on a competitive basis. The minimum admission requirements to the program include:

- Completion of high school or GED equivalent
- Completion of high school biology with a lab component with a grade of B or better **OR** BIOS 115
- Completion of 2 units of high school algebra with C or better **OR** MATH 022 and MATH 026 **OR** MATH 028 with a C or better
- Submission of an application
- Submission of all official transcripts
- Completion of a Career Assessment Form (CAF)

- Minimum overall GPA of 3.0
- Competitive applicants will be interviewed by the program admission committee

Meeting the minimum admission requirements does not guarantee admission into the Sonography Program. Primary consideration will be given to applicants who have completed:

- College Algebra, Human Anatomy I & II with a B or better the first time a course is taken
- The general education courses that apply to the program

Specialized Diploma

This program is designed for the individual with an Allied Health background.

Program Features

The Specialized Diploma in Diagnostic Medical Sonography at NCC is a part-time 18-month competency-based program beginning in the spring semester of each year. Practice in scanning and instrumentation is done in the lab facility on NCC's campus. The clinical education component of the program is conducted at various clinical affiliates in the Lehigh Valley, Poconos, Bucks County, and New Jersey. There are approximately 1360 hours of clinical education.

Program Admission Requirements

Admission to the program is on a competitive basis. The minimum admission requirements to the program include:

Completion of high school or GED equivalent

- Allied Health background
- Submission of an application
- Submission of all official transcripts
- Minimum overall GPA of 3.0
- MATH 140 College Algebra
- DMSG 103 Introduction to Acoustical Physics
- DMSG 101 Fundamentals of Sonography
- Human Anatomy & Physiology I & II (BIOS 204 & BIOS 254)
- Communication skills: ENGL 101 English I and CMTH 102 Speech Communications
- CISC 101 Introduction to Computers or three, one credit courses through OE/OE (OFAD 141, 142, 143)
- Competitive applicants will be interviewed by the program admission committee

Meeting the minimum admission requirements does not guarantee admission into the Sonography Program. Primary consideration will be given to applicants who have completed:

- College Algebra, Human Anatomy I & II with a B or better the first time a course is taken

Program Outcomes

Quantitative Outcomes

To produce graduates who:

- have a broad knowledge base
- pass their certification examination

Measured through the following benchmarks: student retention rate, student attrition rate, course completion rate, program completion rate, graduation rate, credentialing examination pass rate, job placement and patterns of employment.

Qualitative outcomes:

To produce graduates who:

- are proficient entry-level general diagnostic medical sonographers.
- have good patient skills.
- protect themselves, peers and co-workers, and patients from communicable diseases.
- adapt to change.
- meet or exceed the needs of their employers.

Measured through the following benchmarks: clinical performance and clinical competency evaluation, problem solving and critical thinking skills, communication skills, professional development and growth, graduate satisfaction, and employer satisfaction.

Diagnostic Medical Sonography,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	Fall Semester	
BIOS 204	Human Anatomy and Physiology I	4
DMSG 101	Fundamentals of Sonography	2
DMSG 103	Introduction to Acoustical Physics	2
ENGL 101C	English I	3
MATH 140	College Algebra	3
----------	Elective	3
		17
	Spring Semester	
BIOS 254	Human Anatomy and Physiology II	4
DMSG 105	Acoustic Physics and Instrumentation I	2
DMSG 110	Abdominal Sonography - Anatomy, Physiology, Imaging and Critique	4
DMSG 115	Obstetrical and Gynecological Sonography -	4

	Anatomy, Physiology, Imaging, and Critique I	
DMSG 120	Clinical Practice I	3
DMSG 125	Sectional Anatomy for Sectional Imagers	1
		18
	Summer Sessions	
DMSG 170	Clinical Practice II	3
	Fall Semester	
CMTH 102	Speech Communication	3
DMSG 160	Abdominal Sonography - Anatomy, Physiology, Imaging and Critique II	4
DMSG 155	Acoustic Physics and Instrumentation II	3
DMSG 220	Clinical Practice III	3
ENGL 151C	English II	3
		16
	Spring Semester	
DMSG 165	Obstetrical and Gynecological Sonography - Anatomy, Physiology, Imaging, and Critique II	4
DMSG 215G	Small Parts and Special Topics	2
DMSG 230	Clinical Practice IV	3
PSYC 103	Introduction to Psychology	3
----------	Social Science: Societies and Institutions over Time Elective (SIT)	3
		15
	Summer Sessions	
DMSG 240	Clinical Practice V	5
	Total Credits	**74**

- Human Anatomy and Physiology I is substituted for one of the Human Knowledge courses.

Diagnostic Medical Sonography,

Specialized Diploma

Course Code	Course Title	Credits
	Spring Semester	
DMSG 105	Acoustic Physics and Instrumentation I	2
DMSG 110	Abdominal Sonography - Anatomy, Physiology, Imaging and Critique I	4
DMSG 115	Obstetrical and Gynecological Sonography - Anatomy, Physiology, Imaging, and Critique I	4
DMSG 120	Clinical Practice I	3
DMSG 125	Sectional Anatomy for Medical Imagers	1
		14
	Summer Sessions	
DMSG 170	Clinical Practice II	3
	Fall Semester	
DMSG 155	Acoustic Physics and Instrumentation II	3
DMSG 160	Abdominal Sonography Anatomy, Physiology, Imaging and Critique II	4
DMSG 220	Clinical Practice III	3
		10
	Spring Semester	
DMSG 165	Obstetrical and Gynecological Sonography - Anatomy, Physiology, Imaging, and Critique II	4
DMSG 215G	Small Parts and Special Topics	2
DMSG 230	Clinical Practice IV	3
		9
	Summer Sessions	
DMSG 240	Clinical Practice V	5
	Total Credits	**41**

Career Potential: Sonographer (RDMS), Echocardiographer (RDCS), Vascular Technologist (RVT)

Transfer Potential: Thomas Jefferson University, Misercordia University

Important Resources:

- Program Highlights - http://catalog.northampton.edu/Sonography-Program-Highlights.htm
- Clinical Affiliates - http://catalog.northampton.edu/Clinical-Affiliates.htm
- Links to other Oraganizations - http://catalog.northampton.edu/Sonography-Related-Links.htm

Dietary Management

Allied Health & Sciences

Specialized Diploma conferred

Program Narrative

If you're currently working at least 20 hours per week in the healthcare food service industry and looking for a way to advance, Northampton's specialized diploma in Dietary Management offers the preparation you need. This program offers courses in nutrition, administration, personnel systems management and food safety. Core threads of nutrition principles, leadership, food safety, budgeting and quality care are integrated throughout the program. The program requires field experience to ensure hands-on, real world training.

Upon completing the program, you will be qualified for front line supervisory positions in food service departments primarily within hospitals, personal care, assisted living, and skilled nursing facilities. You will be able to take responsibility for purchasing, storing, preparing and delivering balanced nutritional meals. You'll also be prepared to provide menu variety and appetizing entrees while maintaining nutritional requirements within your institution's cost/profit objectives.

Northampton Community College is fully accredited by the Dietary Managers Association.

Program Features

The Dietary Management Specialized Diploma Program consists of 17 credits and can be completed within a 9-month time span. The program's core courses (3) are offered in ten-week sessions and run consecutively from September through May. The required Speech Communication and ServSafe® Sanitation courses are offered throughout the year.

Field study experiences enhance each of the core courses and offer students the opportunity to apply theoretical knowledge into the employment setting. Upon completion of the core program courses, Dietary Management students are eligible to take the Certified Dietary Manager (CDM) and Certified Food Protection Professional (CFPP) national credentialing examination.

Special Note:

For those students who have completed the non-credit specialized diploma and have the credential of CDM and CFFP they may apply to the credit specialized diploma program. They will be able to establish competency by taking the final examination in each of the three core courses and once admitted to the program will be given 12 college credits for course work already completed. Once completing CMTH 102 and CULA 102 they would be eligible for the credit specialized diploma. For information call Admissions at 610-861-5500 or Deb Maurer at 610-332-6536.

Program Outcomes

Graduates of this program will:

- Demonstrate competencies as outlined by the Dietary Managers Association in Nutrition, Administration and Personnel Management, Systems Administration and Food Safety.
- Incorporate an understanding of the principles of nutrition, leadership, food safety, budgeting and providing quality care throughout the theoretical and field experience portions of the program.
- Understand the role and responsibilities of a Dietary Manager position with a CDM (Certified Dietary Manager) and CFFP (Certified Food Protection Professional) credential while demonstrating skills necessary to manage a busy food service operation.
- Integrate infection control principles and patient safety into practice.
- Understand Dietary Manager's terminology affiliated with the food service industry.
- Understand and apply the legal, regulatory and ethical parameters to the role of the Dietary Manager.
- Complete a minimum of 180 hours of field experience as a dietary management student.
- Pass the Dietary Manager and Food Protection Professional National Certification Examination by the Dietary Manager's Association within the 3 years of completion of the program.

Dietary Management,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
CULA 102	Food Safety and Sanitation	2
DIET 101	Dietary Management: Nutrition	4
		6
	Second Semester	

DIET 105	Dietary Management: Administration and Personnel Management	4
		4
	Third Semester	
DIET 110	Dietary Management: Systems Management and Food Safety	4
CMTH102	Speech Communication	3
		7
	Total Credits:	**17**

Career Potential: Certified dietary manager (CDM) Certified Food Protection Professional (CFPP), Food Service Manager, Food Service Supervisor

Direct Service Provider

Allied Health & Sciences
Specialized Diploma conferred

Program Narrative

Northampton's specialized diploma in Direct Service is aimed at employees working at group homes that serve MH/MR residents. Through a carefully designed progression, the staff of these homes can gain formal training to improve their performance and advance their careers. The diploma program was developed in direct response to requests from Direct Service Providers seeking further training for their teams.

This program is an extension of the noncredit Direct Service Provider program currently being provided by Northampton. Before enrolling in the specialized diploma program students must successfully complete the competency exams for DSPI and DSPII. The career path is as follows:

Direct Service Provider I (DSPI) is an individual who has taken the Direct Service Provider I, 30-hour introductory non-credit course through their employer and has successfully completed the competency examination. Content areas include but are not limited to: Basic MR, Abuse/Neglect, Licensing - Policy/Procedure, Universal Precautions, Fire Safety, MSDS - Hazardous Materials, Household Management and Crisis Prevention. The Training team has developed an assessment tool that includes a written test and skill demonstration.

Successful completion of DSP I is a prerequisite for DSP II. The employer provides training for DSP I.

Direct Service Provider II (DSPII) is an individual who has taken the Direct Service Provider I 30 hour non-credit introductory course, and has taken the 50 hour non-credit course offered through the Northampton Community College and has successfully completed the competency examination.

The content areas are:

- Module 1 - Problem Solving, Communication and Conflict Resolution - 12 hours
- Module 2 - A Team Approach to Human Services - 6 hours
- Module 3 - Person Centered Thinking - 6 hours
- Module 4 - MH/MR Advanced Topics - 15 hours
- Module 5 - Supporting the Aging Population - 6 hours
- Module 6 - Effective Writing and Documentation for the Direct Service Provider - 6 hours

Not sure whether you are qualified to enroll in the specialized diploma program? Please contact the Northampton Community College Admissions Office.

Program Outcomes

Graduates of the program will:

- Demonstrate the ability to work professionally and collaboratively with a team to support consumers in residential care facilities needing support with mental illness, mental retardation and mental health concerns living in the community.
- Demonstrate effective residential, vocational and educational supports to consumers with disabilities in their communities.
- Enhance direct service provider skills and quality of services to supporting consumers with disabilities.
- Retain an appropriate position in a residential facility with a commitment to lifelong learning and achieve professional growth.

Direct Service Provider,

Specialized Diploma

Course Code	Course Title	Credits
CMTH 102	Speech Communication	3
HUSV 101	Direct Service Professionalism	3
HUSV 105	Facilitating Positive Behavior	3
HUSV 110	Physical and Developmental Supports	3
	Total Credits:	**12**

- Before entering the program, students must successfully complete the competency examination for Direct

Service Provider I (30-hour non credit course) and Direct Service Provider II (50-hour non credit course).

Career Potential: Social and Human Service Assistant, Social Worker, Direct Service Provider Manager, Direct Service Provider Supervisor, Group Home Supervisor, Director Group Home

Education - All Programs

Students intending to prepare to become teachers of children from infancy through twelfth grade may start their educational preparation at Northampton Community College. NCC offers five distinct degree programs that will prepare students for a variety of teaching positions in settings such as public schools, parochial and private schools, as well as childcare centers and Head Start programs.

Northampton's programs have been modified to comply with the changes in the teacher education certification system in Pennsylvania. The Pennsylvania Department of Education has reorganized teacher certification as shown on next page:

As of 2013, anyone graduating from a four-year college or university as a teacher will apply for a teaching certificate based on the new system. The matching NCC program to prepare you for these new requirements is shown in the box below.

Are you not sure which level you want to teach?

Many students that come to NCC interested in teaching as a career are unsure of which grades they would be best suited to teach. Such students should take *EDUC115 Education for All Students***,** a course which explores all grade levels, including pre-kindergarten through high school teaching. EDUC115 gives students real world experience through observations in the schools, which often helps students to determine which level of teaching is best for them.

Are you sure that you want to teach children grades Pre-Kindergarten to Grade 4 and/or aged infancy to age 9 in child care or Head Start?

Students who are sure that they want to work with students up to Grade 4 may enter directly into the *Early Childhood Education: Infant to Grade 4***,** associate in applied science degree program. The Early Childhood Education program provides extensive opportunities to observe and work with young children during your time at NCC. Students would then transfer to a bachelor's degree program at college or university to complete the requirements for teacher certification or obtain a teaching position in a Child Care or Head Start.

Do you have a subject area that you think you want to teach?

Students that think they may want to teach a subject or content area (mathematics, science, English, social studies, etc) may consider teaching at either the middle school or high school level. *The Middle School Grades 4 to 8 certification is new to Pennsylvania***.** Middle level certification will allow teachers to teach the last two grades of elementary school (grades 4 and 5) and all grades of middle school. The Middle Level Education: Grades 4 to 8 degree gives students a strong foundation in mathematics, science, language arts, and social science. Students would then transfer to a bachelor's degree program at college or university to complete the requirements for teacher certification.

Students intending to teach high school have two options. Future teachers of English, foreign language, history or social studies should enroll in the associate of arts degree in Secondary Education. Students who want to teach mathematics or science at the high school level should enroll in the associate of science degree in Secondary Education: Math & Science. It is important to work closely with an advisor to select classes that will transfer smoothly to the next college or university where students will complete their bachelor degree and obtain teacher certification.

Students interested in becoming an art teacher should refer to the Individualized Transfer Studies major which is the pathway from NCC to Kutztown University for art education.

What teaching positions could I obtain with an associate degree from NCC?

Students who wish to enter directly into a job after completing an associate degree from NCC have several options. *The Early Childhood Education: Infant to Grade 4* prepares students to work in childcare centers and Head Start programs.

NCC also offers the gateway to a career as a paraeducator or teacher assistants through the **Special Education: Paraeducator Training** degree. For students who wish to help classroom teachers, the position of teacher assistant offers another opportunity to work in schools.

Students who have completed the **Middle Level Education: Grades 4-8** associate in arts degree may also gain employment as teacher assistants.

Northampton offers a wide range of programs for students intending to make teaching a career. The programs are more fully described on the pages that follow.

Please refer to the Special Education: Paraeducator Training program page for more information.

Education - Early Childhood Education: Infant to Grade 4

Please note: Overview information for Education Majors can be found by clicking here.

ECE Homepage

Education & Academic Success

Degree awarded: Associate in Applied Science;

Certificate and Specialized Diplomas conferred

Program Narrative

Teaching young children is rewarding and inspiring! Highly qualified faculty prepare students to be effective teachers of children aged infant to nine years. Graduates may transfer seamlessly to four-year institutions or immediately enter the early care and education profession.

Graduates who transfer within Pennsylvania may enter a four-year institution at the junior level where they will earn a baccalaureate degree and Pre-K to Grade 4 Pennsylvania certification required to teach pre-kindergarten to grade four in public and private schools.

Graduates who enter the early care and education profession are qualified to work as lead teachers in child care centers, Head Start programs, nursery schools, and assistant teachers in pre-kindergarten classrooms. With experience and additional education, graduates may be employed as program directors.

Program Features

The program holds National Association for the Education of Young Children Associate Degree Accreditation. The entire program is available both on the Bethlehem and Monroe campuses, and online. English Language Learner (ELL) competencies are introduced in three courses and integrated along with special needs across all courses. Observational and supervised field experiences with children from infancy through age nine occur in accredited campus lab schools, students' work-site classrooms and/or approved off-campus locations. As part of the field experience, students are required to submit video documentation of their teaching. Students need access to digital video and still cameras.

Students are prepared to respect and value the uniqueness of each child within the context of the child's culture, language, abilities and interests. Building collaborative relationships with families is a foundational skill. The arts are included across all courses as symbol systems used to represent, express and construct meaning. The program's conceptual framework, Art as a Way of Learning®, was developed in partnership with Crayola LLC.

Proof of current health and criminal record clearances are required prior to enrolling in a course.Further information is available at www.northampton.edu

Contact Northampton's Admissions Office at 610-861-5500 for advising and additional information regarding this program.

The following are available via the NCC Online Learning: Early Childhood AAS and Certificate, CDA Specialized Diplomas, School Age Child Care SD, and Leadership for Early Childhood Program Directors SD.

This is a Tech Prep program . . . ask your high school counselor.

Program Outcomes

Graduates of the program will:

- Child Development and Learning: Students use knowledge of child development and learning to understand that each child's learning and development is unique due to multiple interacting influences. Students apply this knowledge to create inclusive, responsive learning environments and experiences that are healthy, safe, and arts-integrated.
- Building Family and Community Relationships: Students integrate their knowledge about the complex characteristics of families and communities with their abilities to incorporate multiple perspectives to build reciprocal relationships with families and the community.
- Observing, Documenting, and Assessing to Support Young Children and Families: Students systematically record observations that are consistent with the goals, benefits, and appropriate uses of assessment. These observations are the basis for informing their decisions about creating inclusive learning environments, arts-integrated curriculum and learning experiences, and responsive interactions with children and their families.
- Teaching and Learning: Students integrate knowledge of child development, families and communities, effective teaching strategies, assessment and early childhood content areas to design, implement, and evaluate learning experiences for all young children.
- Becoming a Professional: Students implement their knowledge of ethical guidelines and professional standards to become continuous, collaborative learners who demonstrate knowledgeable, reflective, and critical perspectives on their work; make informed decisions that integrate knowledge from a variety of sources; and advocate for sound educational practices and policies.

Early Childhood Education: Infant to Grade 4,

Associate in Applied Science

Course Code	Course Title	Credits
	Semester One	
EARL 106	Early Childhood Development and Learning	3
EARL 107	Observation and Assessment	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
SOCA 103 or	Principles of Sociology or	
SOCA 102	Cultural Anthropology (ESU Required)	3
		15

	Semester Two	
EARL 126	Early Childhood Arts	3
EARL 128	Infant-Toddler Development and Learning	3
ENGL 151	English II	3
ARTA 100 or	Art and Visual Thinking (AH) or	3
CMTH 110 or	Introduction to the Theatre, or	
MUSC 101 or	Introduction to Music or	
DANC 101	Dance History	
----------	Elective +	3
		15
	Semester Three	
EARL 208	Early Childhood Mathematics	3
EARL 216	Early Childhood Literacy and Language	3
EARL 217	Child, Family and Community	3
MATH 118	Foundations of Mathematics I	3
----------	General Education Elective in SSHB, SIT or AH++	3
		15
	Semester Four	
EARL 218	Early Childhood Science	3
EARL 244	Early Childhood Profession	3
EARL 263G	Internship - Early Childhood	3
MATH 119	Foundations of Mathematics II	3
BIOS 105	Contemporary Biology	4
		16
	Total Credits	**61**

+ SPED 160 is highly recommended.

++ Transfer elective must be selected with the advice of the academic advisor so that the course will transfer to students' intended transfer institution.

- EDUC 105 Praxis I Prep is highly recommended for students who are transferring.
- Computer competencies are included in various courses in the program.

Early Childhood Education: Infant to Grade 4,

Certificate

Course Code	Course Title	Credits
EARL 106	Early Childhood Development and Learning	3
EARL 107	Observation and Assessment	3
EARL 126	Early Childhood Arts	3
EARL 128	Infant-Toddler Development and Learning	3
EARL 208	Early Childhood Mathematics	3
EARL 216	Early Childhood Literacy and Language	3
EARL 217	Child, Family and Communities	3
EARL 218	Early Childhood Science	3
EARL 244	Early Childhood Profession	3
EARL 263G	Internship - Early Childhood	3
ENGL 101C	English I	3
----------	Elective in SSHB, SIT, AH	3
	Total Credits	**36**

Child Development Associate (CDA),

Specialized Diploma

Course Code	Course Title	Credits
EARL 106	Early Childhood Development and Learning	3
EARL 217	Child, Family and Community	3
EARL 244	Early Childhood Profession	3
	Total Credits	**9**

Infant-Toddler Child Development Associate (CDA),

Specialized Diploma

Course Code	Course Title	Credits
EARL 106	Early Childhood Development and Learning	3
EARL 128	Infant-Toddler Development and Learning	3
EARL 244	Early Childhood Profession	3
	Total Credits	**9**

Early Childhood Education for Children with Disabilities,

Specialized Diploma

This diploma is offered only in the evening.

Course Code	Course Title	Credits
EARL 130	Introduction to Young Children with Disabilities	1
EARL 131	A.D.A. and Early Childhood Education	1
EARL 132	Family/School Collaboration for Young Children with Disabilities	1
EARL 133	Fostering Social-Emotional Competency in Children with Disabilities	1
EARL 134	The Inclusive Classroom Environment	1
EARL 135	Planning Curriculum for Children with Disabilities	1
	Total Credits	**6**

School-Age Child Care,

Specialized Diploma

This diploma is offered via the College Online Learning web based program.

Course Code	Course Title	Credits
EARL 102	Introduction to School Age Child Care	3
EARL 103	Society and the School Age Child	3
EARL 104	School Age Child Care Professional	3
	Total Credits	**9**

Leadership for Early Childhood Program Directors,

Specialized Diploma

Course Code	Course Title	Credits
EARL 231	Organization and Administration of Early Childhood Programs	3
EARL 232	Leadership Seminar in Early Childhood Education	3
BUSA 101	Introduction to Business	3
	Total Credits	**9**

Program prerequisite: 15 credits in Early Childhood/Child Development course work or department approval.

Family Child Care Child Development Associate (CDA),

Specialized Diploma

This diploma is offered via the College Online Learning web based program.

Course Code	Course Title	Credits
EARL 155	Introduction to Family Child Care	3
EARL 156	Society and the Child in Family Child Care	3
EARL 157	Family Child Care Professional	3
	Total Credits	**9**

Career Potential: Preschool Teacher, Group Supervisor, Program Director, Classroom Assistants

NCC students transfer to: East Stroudsburg University, Bloomsburg University, Lock Haven University, Shippensburg University, DeSales University, Keystone College

Students are employed: Head Start, Child Care Centers, Family Child Care, School Districts

Important Resources:

- Building Inclusive Child Care - http://catalog.northampton.edu/Building-Inclusive-Child-Care.htm
- Links, Manuals, and Tools - http://catalog.northampton.edu/Links-Manuals-and-Tools.htm

Education - Middle Level Education: Grades 4 to 8

Please note: Overview information for Education Majors can be found by clicking here.

Education & Academic Success

Degree awarded: Associate in Arts

Program Narrative

The need for dedicated, caring, and highly skilled teachers in our nation's schools is greater than ever before. Northampton is committed to providing an excellent foundation for students preparing to major in middle level education when they transfer to a four-year college or university.

The College offers the first two years of the baccalaureate degree program. Completion of the Associate in Arts Degree with a major in Middle Level Education: Grades 4 to 8 allows for a smooth transition to a four-year institution. At the transfer institution students will take advanced courses leading to a degree and certification for grades 4 through 8.

Program Features

The Middle Level Education major provides students with a strong foundation in mathematics, science, language arts, and social sciences. Students start their professional courses with EDUC115 Education for All Students and SPED160 Introduction to Special Education. All teachers need to be able to work with special education students, and with students who have limited English proficiency. Northampton's program integrates content related to special education and English language learners (ELL). Students will then select education transfer electives based upon the institution to which they will transfer to complete the junior and senior years of the bachelor's degree. We encourage middle level majors to start thinking about their transfer institution as soon as possible so courses can be selected that provide a smooth transition from one college to the next.

Students interested in becoming an art teacher should refer to the Individualized Transfer Studies major which is the pathway from NCC to Kutztown University for art education.

The Middle Level Education major is offered on both the Bethlehem and Monroe campuses. All of the courses for this degree are available in the day time, and many of them are offered through evening courses.

Program Outcomes

Graduates of the program will:

- Demonstrate an understanding of the ideas, events, people, places, problems, and issues which are the historical and sociological foundations for American education today.
- Demonstrate an understanding of the ideas (theories), people (theorists), problems, and issues which define the art and science of teaching.
- Be able to discuss the relationship of educational issues and educational theories to the art and science of teaching practice.
- Be able to define and use a discipline-specific, professional vocabulary to think, speak, and write about education as a foundation for pre-professional practice and experience.
- Be able to read and interpret professional literature, demonstrating skills in analytical thinking both orally and in writing.
- Demonstrate skills in self-directed study, research, organization and learning, and relate these skills to teaching practice in the classroom setting.
- Transfer to a four-year college/university offering the B.A or B.S. degree in Middle School Education.

Middle Level Education: Grades 4-8,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
EDUC 115	Education for All Students	3
ENGL 101C	English I	3
HIST 113	American History I (SIT)	3
MATH 118	Foundations of Math I (QL)	3
		15
	Second Semester	
BIOS 105	Contemporary Biology (SCI)	4
ENGL 151C	English II	3
MATH 119	Foundations of Math II	3
SPED 160	Intro to Special Education	3
----------	Social Science Transfer Elective + (SSHB)	3
		16
	Third Semester	
CHEM 135	Chemistry of Life	4
EDUC 105	Praxis I Preparation	1
MATH 150	Introductory Statistics (QL)	3

----------	Social Science Transfer Elective + (SIT or SSHB)	3
----------	Transfer Elective +	3
----------	Transfer Elective +	3
		17
	Fourth Semester	
ENGL 215G	Multicultural Adolescent Literature (A/H) (WI)(D)	3
MATH 140	College Algebra	3
----------	Social Science Transfer Elective (SIT or SSHB) +	3
----------	Transfer Elective +	3
----------	Transfer Elective +	3
		15
	Total Credits	**63**

+ Transfer Electives must be selected with the advice of an academic advisor so that courses will transfer to the students' intended transfer institution. Refer to transfer guides.

. EDUC105 Praxis I Preparation course assists students to prepare for the standardized Praxis exam. The course is not otherwise AA/AS applicable and is not transferable.

. Writing intensive courses include ENGL215G. One other course must be taken as writing intensive. ENGL215G also fulfils the Diversity elective.

. Taking both ENGL101C and ENGL151C satisfies the general education Computer Literacy Requirement.

Education - Secondary Education

Please note: Overview information for Education Majors can be found by clicking here.

Education & Academic Success

Degree awarded: Associate in Arts

Program Narrative

The Secondary Education major is designed for students who intend to teach English, a foreign language, history, social studies, or social science, at the high school level.

Students interested in becoming an art teacher should refer to the Individualized Transfer Studies major which is the pathway from NCC to Kutztown University for art education.

The need for dedicated, caring, and highly skilled teachers in our nation's schools is greater than ever before. Northampton is committed to providing an excellent foundation for students preparing to major in secondary education when they transfer to a four-year college or university.

The College offers the first two years of the baccalaureate degree program. Completion of the Associate in Arts Degree with a major in Secondary Education allows for a smooth transition to a four-year institution. At the transfer institution students will take advanced courses leading to a degree and certification for grades 7 through 12.

Program Features

The Secondary Education major provides students with a strong foundation in mathematics, science, language arts, and social sciences. Students start their professional courses with EDUC115 Education for All Students and SPED160 Introduction to Special Education. All teachers need to be able to work with special education students, and with students who have limited English proficiency. Northampton's program integrates content related to special education and English language learners (ELL).

Students should determine which subject area they intend to teach in high school, and work with their college advisor to select courses based upon the area of specialization and the institution to which they will transfer to complete the junior and senior years of the bachelor's degree. Students will take a significant number of courses at NCC related to the subject they will teach.

We encourage secondary education majors to start thinking about their transfer institution as soon as possible so courses can be selected that provide a smooth transition from one college to the next.

The Secondary Education major is offered on both the Bethlehem and Monroe campuses. All of the courses for this degree are available in the day time, and many of them are offered through evening courses.

Program Outcomes

Graduates of the program will:

- Demonstrate the professional knowledge-base and attitudes appropriate for pre-service teachers, grounded in the social, philosophical and historical foundations of education.
- Learn to create and support learning environments that promote healthy academic and social development of all adolescents.
- Employ effective instructional principles for students from diverse backgrounds or with special needs.
- Use second language learning strategies in learning situations (ELL).
- Integrate disciplinary knowledge and dispositions relevant to content concentration.
- Complete 40 hours of field experiences that contextualizes the complexity of today's classrooms, schools and community.

- Transfer to a four-year college/university offering the B.A or B.S. degree in Secondary Education.

Secondary Education,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
EDUC 115	Education for All Students	3
ENGL 101C	English I	3
MATH _____	Mathematics Transfer Elective (QL) +	3
----------	Social Science Transfer Elective (SIT) +	3
		15
	Second Semester	
ENGL 151C	English II	3
SPED 160	Intro to Special Education	3
MATH_____	Mathematics Transfer Elective (QL) +	3
----------	Social Science Transfer Elective (SSHB) +	3
----------	Transfer Elective +	3
		15
	Third Semester	
EDUC 105	Praxis I Preparation	1
----------	Social Science Transfer Elective (SIT or SSHB) +	3
----------	Transfer Electives +	12
		16
	Fourth Semester	
ENGL 215G	Multicultural Adolescent Literature (A/H) (WI)(D)	3
----------	Social Science Transfer Elective (SIT or SSHB) +	3
----------	Science Transfer Electives (SCI) +	4
----------	Transfer Electives +	6
		16
	Total Credits	**62**

+ Transfer Electives must be selected with the advice of an academic advisor so that courses will transfer to the student's intended transfer institution, and, correspond to the area of content the student will teach at the high school level. Refer to transfer guides.

- EDUC105 Praxis I Preparation course helps students to prepare for the standardized Praxis exam. The course is not otherwise AA/AS applicable and is not transferable.
- ENGL215G fulfills one Writing Intensive requirement. One other course must be taken as writing intensive. ENGL215G also fulfils the Diversity elective.
- Taking both ENGL101C and ENGL151C satisfies the general education Computer Literacy Requirement.

Education - Secondary Education: Math & Science

Please note: Overview information for Education Majors can be found by clicking here.

Education & Academic Success

Degree awarded: Associate in Science

Program Narrative

The Secondary Education: Math & Science major is designed for students who intend to teach mathematics or science at the high school level.

Students interested in becoming an art teacher should refer to the Individualized Transfer Studies major which is the pathway from NCC to Kutztown University for art education.

The need for dedicated, caring, and highly skilled teachers in our nation's schools is greater than ever before. Northampton is committed to providing an excellent foundation for students preparing to major in secondary education when they transfer to a four-year college or university.

The College offers the first two years of the baccalaureate degree program. Completion of the Associate in Science Degree with a major in Secondary Education: Math & Science allows for a smooth transition to a four-year institution. At the transfer institution students will take advanced courses leading to a degree and certification for grades 7 through 12.

Program Features

The Secondary Education major provides students with a strong foundation in mathematics, science, language arts, and social sciences. Students start their professional courses with EDUC115 Education for All Students and SPED160 Introduction to Special Education. All teachers need to be able to work with special education students, and with

students who have limited English proficiency. Northampton's program integrates content related to special education and English language learners (ELL).

Students should determine which subject area they intend to teach in high school, and work with their college advisor to select courses based upon the area of specialization and the institution to which they will transfer to complete the junior and senior years of the bachelor's degree. Students will take a significant number of courses at NCC related to the subject they will teach.

We encourage secondary education majors to start thinking about their transfer institution as soon as possible so courses can be selected that provide a smooth transition from one college to the next.

The Secondary Education: Math & Science major is offered on both the Bethlehem and Monroe campuses. All of the courses for this degree are available in the day time, and many of them are offered through evening courses.

Program Outcomes

Graduates of the program will:

- Demonstrate the professional knowledge-base and attitudes appropriate for pre-service teachers, grounded in the social, philosophical and historical foundations of education.
- Learn to create and support learning environments that promote healthy academic and social development of all adolescents.
- Employ effective instructional principles for students from diverse backgrounds or with special needs.
- Use second language learning strategies in learning situations (ELL).
- Integrate disciplinary knowledge and dispositions relevant to content concentration.
- Complete 40 hours of field experiences that contextualizes the complexity of today's classrooms, schools and community.
- Transfer to a four-year college/university offering the B.A or B.S. degree in Secondary Education.

Secondary Education: Mathematics and Science,

Associate in Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
EDUC 115	Education for All Students	3
ENGL 101C	English I	3
MATH _____	Mathematics Transfer Elective (QL) +	3
----------	Mathematics or Science Transfer Elective +	3
		15
	Second Semester	
ENGL 151C	English II	3
SPED 160	Intro to Special Education	3
MATH_____	Mathematics Transfer Elective (QL) +	3
----------	Science Transfer Elective (SCI) +	4
----------	Mathematics or Science Transfer Elective +	3
		16
	Third Semester	
EDUC 105	Praxis I Preparation	1
----------	Social Science Transfer Elective (SIT) +	3
----------	Mathematics or Science Transfer Electives +	6
----------	Transfer Electives +	6
		16
	Fourth Semester	
ENGL 215G	Multicultural Adolescent Literature, (A/H) (WI)(D)	3
----------	Social Science Transfer Elective (SSHB) +	3
----------	Mathematics or Science Transfer Electives +	6
----------	Transfer Elective +	3
		15
	Total Credits	**62**

+ Transfer Electives must be selected with the advice of an academic advisor so that courses will transfer to the student's intended transfer institution, and, correspond to the area of content the student will teach at the high school level. Refer to transfer guides.

- EDUC105 Praxis I Preparation course helps students to prepare for the standardized Praxis exam. The course is not otherwise AA/AS applicable and is not transferable.
- ENGL215G fulfills one Writing Intensive requirement. One other course must be taken as writing intensive. ENGL215G also fulfils the Diversity elective.
- Taking both ENGL101C and ENGL151C satisfies the general education Computer Literacy Requirement.

Education - Special Education: Paraeducator Training

Please note: Overview information for Education Majors can be found by clicking here.

Program Narrative

Special Education is an important and exciting field for persons interested primarily in the education of children with disabilities. The Individuals With Disabilities Education Improvement Act 2004 (IDEIA) and No Child Left Behind (NCLB) legislation increasingly support and highlight the need for appropriately trained and qualified personnel involved in the education of children with disabilities. As more schools implement appropriate inclusion of children with disabilities, the need for education in knowledge and skills of inclusive practices becomes increasingly valuable. Northampton Community College's special education program prepares students with competencies necessary to support children with disabilities in various educational settings.

Program Features

The Special Education Paraeducator Training (A.A.S.) degree prepares students to work under the supervision of a certified teacher as paraeducators or teacher assistants in a variety of educational settings. A Special Education Paraeducator Certificate and Specialized Diploma are also available. Coursework and field experiences integrate federal and state special education professional standards and best practices. In addition, the program offers the opportunity for students pursuing dual certification (special education and an area of Pre-K - 12 teacher certification) to complete special education coursework that is transferable to four-year institutions.

The program is offered at the Bethlehem Campus and online. Some courses are also offered at the Monroe Campus. Students intending to transfer to a four-year program are advised to take the course EDUC105 Praxis I Preparation, or, to study for, take, and pass the Praxis I exam before transferring.

Program Outcomes

Graduates of the program will:

- Apply knowledge of child development and learning to create inclusive, responsive environments and experiences that are universally designed.
- Apply knowledge of special needs or exceptionalities, educational processes, resources, and skills to design, implement, and evaluate learning experiences for all children.
- Apply knowledge of families, educational systems, and communities to build reciprocal relationships with families and educational communities.
- Utilize knowledge of ethical guidelines and professional standards to make informed decisions and be advocates for sound educational practices and policies.

Special Education: Paraeducator Training,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
EDUC 115 or	Education for All Students or	
EARL 106	Early Childhood Development and Learning	3
ENGL 101C	English I	3
PSYC 103	Introduction to Psychology	3
SPED 160	Introduction to Special Education	3
SPED 164	The Paraeducator Professional	3
		15
	Second Semester	
CMTH 102	Speech Communication	3
ENGL 151C	English II	3
PSYC 251	Child Psychology	3
SPED 162	Foundations of Special Education	3
SPED 163	Instructional Strategies for Children with Exceptionalities	3
		15
	Third Semester	
EDUC ____ or	Education Elective or	
EARL 217 or	Child, Family and Community	3
MATH 103 or	Applications in Mathematics or	

MATH 118 or	Foundations of Mathematics I or	
MATH 120	The Nature of Mathematics	3
SPED 161G	Accommodating Children with Exceptionalities in the Classroom	3
SPED 166	Assistive Technology for Children with Exceptionalities	3
SOCA 103	Principles of Sociology	3
		15
	Fourth Semester	
SPED 210	Internship	6
----------	Science Elective (SCI) *	4
----------	Arts and Humanities Elective (AH) +*	3
----------	Elective *	3
		16
	Total Credits	**61**

* Students intending to transfer to complete a bachelor's degree must select electives with the advice of an academic advisor so that courses will transfer to the student's intended transfer institution.

+ The Arts and Humanities (AH) Elective must be taken from the list of approved courses in that category; ARTA 100 is recommended.

- Completion of SPED 161G satisfies the Writing Intensive (WI) requirement.

Special Education: Paraeducator Training,

Certificate

Course Code	Course Title	Credits
ENGL 101C	English I	3
PSYC 103	Introduction to Psychology	3
SPED 160 +	Introduction to Special Education +	3
SPED 161G	Accommodating Children with Exceptionalities in the Classroom	3
SPED 162	Foundations of Special Education	3
SPED 163	Instructional Strategies for Children with Exceptionalities	3
SPED 164	The Paraeducator Professional	3
SPED 166	Assistive Technology for Children with Exceptionalities	3
SPED 210 ++	Special Education Internship ++	6
	Total Credits	**30**

+ SPED 160 is a co- or prerequisite for SPED 161G, 162, 163, 164, 166.

++ SPED 210 has prerequistes of SPED 160, 161G, 162, 163, 164, 166.

Special Education: Paraeducator Training,

Specialized Diploma

Course Code	Course Title	Credits
SPED 160 +	Introduction to Special Education +	3
SPED 161 or 161G*	Accommodating Children with Exceptionalities in the Classroom	3
SPED 162	Foundations of Special Education	3
SPED 163	Instructional Strategies for Children with Exceptionalities	3
SPED 164	The Paraeducator Professional	3
SPED 166	Assistive Technology for Children with Exceptionalities	3
	Total Credits	**18**

+SPED 160 is a co- or prerequisite for SPED 161, 162, 163, 164, 166.

* SPED 161G has a prerequisite of ENGL101C

Career Potential: Career path for teaching certification, Paraeducator

NCC students have transferred to: East Stroudsburg University, Bloomsburg University, Cedar Crest College

NCC students are employed by: Intermediate Units, Early Childhood Centers, School Districts

Electrical Construction Technology

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Electrical construction involves the installation, wiring and testing of electrical equipment in residential, commercial and industrial buildings. The work itself is both physically demanding and highly rewarding. It requires a strong working knowledge of wiring practices and The National Electrical Code, a basic knowledge of the equipment used in commercial applications, industrial processes and environmental controls, as well as a journeyman's license. If you are interested in pursuing a career in Electrical Construction, our program can help you achieve your goal.

In addition to our specialized diploma in Electrical Technology, Northampton also offers an Electrical Construction Technology associate's degree program to students who wish to enter and grow in the profession. If you plan to earn a bachelor's degree in the field, our program is also a good way to get started.

In addition to this associate's degree, students at Northampton can also opt for the five-year IBEW Apprenticeship Program version of the degree. See "Electrical Construction Technology IBEW" for more information.

Program Features

The program provides an in-depth study of electrical fundamentals, wiring techniques, and the National Electrical Code that is applicable to residential, commercial and industrial installations. We prepare our students to sit for municipal (PA) and state (NJ) electrician's license exams. The program also provides fundamental knowledge of a broad range of related technologies including electricity, HVAC, fiber optics, motor controls, and PLCs. This breadth of technical knowledge enables graduates to work on a variety of projects in construction, utility and manufacturing industries. Required general education courses round out the degree requirements to provide graduates with the ability to effectively communicate and interface with other employees, customers, suppliers and other organizations.

Courses are carefully scheduled so that you can earn the AAS degree in two years of full-time study. Alternatively, course work can be completed over a longer period during the evening on a part-time basis. Students can begin the program in the fall or spring.

Completion of the degree will prepare you to grow into positions of higher responsibility in the field. It will also enable you to transfer all course work to the following online baccalaureate degree programs:

- B.S. Applied Management through Franklin University
- B.S. Industrial Management through California University of Pennsylvania

Admission to the program is open to any student meeting the standard college entrance requirements. To complete the on-campus program in a timely basis, students are required to meet with the associate dean for technology (610-861-5071) for advising prior to entering the program.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Describe the operation and application of commonly used electrical components and circuits.
- Demonstrate a basic framework of technical vocabulary and symbols.
- Demonstrate the application of commonly used methods of circuit analysis and theory.
- Test and troubleshoot electrical and electronic circuits.
- Properly use test equipment including oscilloscopes, DC power supplies, function generators, multi-meters, high voltage testers, and megohmmeters.
- Record, interpret and analyze data.
- Interpret technical information in the form of architectural drawings, schematics, specifications, graphs and procedure.
- Use a lab notebook in recording relevant and necessary project information.
- Demonstrate the ability to work both independently and as part of a team.
- Demonstrate written and oral communication skills.
- Demonstrate skills in reporting, analyzing, and researching technical information.
- Appreciate the breadth and dynamics of the electrical construction industry and be prepared to adapt to changes.
- Properly interpret and use the National Electric Code to perform electrical tasks.
- Demonstrate a thorough knowledge of the safety requirements involved in all phases of electrical work.

Electrical Construction Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
EMEC 101	Electrical Fundamentals	3
ENGG 117	Technical Drawings & Specifications	3

ENGL 101C	English I	3
		15
	Second Semester	
ELTC 107	Electrical Wiring I	2
ELTC 109	Electrical Wiring II	3
EMEC135	Electrical Motors and Controls	4
ENGL 151	English II ++	3
MATH 140	College Algebra	3
		15
	Third Semester	
ELTC 211	National Electrical Code	4
EMEC 240	Industrial Control Systems I	4
HVAC 101	Fundamentals of HVAC/R I	3
PHYS 101	Physics I	4
----------	General Education Elective +++	3
		18
	Fourth Semester	
ELTC 222	Solar Photovoltaic Systems I	3
ELTC 265	Electrical Cabling **	3
ELTC 260G	Electrical Construction Practicum	2
----------	Technical Elective +	3
----------	General Education Elective +++	3
----------	Elective	3
		17
	Total Credits	**65**

** ELTC 265 is a Summer I class.

+ Technical Elective may be selected from among any of the following courses:

- EMEC 105, 110, 245, 281, 282
- HVAC 102, 104, 120, 121, 140, 150
- ENGG (all except 117)
- WELD (all)

++ Students are advised to complete the Technical Writing option of ENGL 151.

+++ For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).

- One course should be designated as Diversity (D).

Career Potential: Inside Wireman, VDV Installer/ Technician, Residential Wireman

Electrical Construction Technology IBEW

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Electrical construction involves the installation, wiring and testing of electrical equipment in residential, commercial and industrial buildings. The work itself is both physically demanding and highly rewarding. It requires a strong working knowledge of wiring practices and electrical code, a basic knowledge of the equipment used in industrial processes and environmental control, and typically an electrical journeyman's license. In addition to a specialized diploma in Electrical Technology, Northampton offers an Electrical Construction Technology degree program in partnership with the International Brotherhood of Electrical Workers (IBEW local #375) for students who wish to enter the profession as a skilled union journeyman.

We also offer a non-IBEW version of this associate's degree. See "Electrical Construction Technology" for more information.

Program Features

The Five-Year IBEW Apprenticeship Program offers qualifying applicants occupational education under the sponsorship of the Joint Apprenticeship and Training Committee (JATC) of the International Brotherhood of Electrical Workers (IBEW Local #375).

Taught by Northampton's electrical instructors using our college-approved curriculum, IBEW apprenticeship students will complete thirty credits of Northampton's electrical construction technology coursework at the IBEW #375 facilities in Allentown, PA. Tuition for that course work is paid by IBEW's JATC.

The program provides an in-depth study of electrical fundamentals, wiring techniques, and the National Electrical Code applicable to residential, commercial and industrial installations. Students are prepared to sit for municipal and state journeyman electrician's license exams. The program also provides fundamental knowledge of a broad range of related technologies including HVAC, electronics, fiber optics, motor controls, and PLCs. This breadth of technical knowledge enables graduates to work on a variety of projects in construction, utility and manufacturing industries.

At the same time, apprentices carry out their on-the-job training requirements through Local #375 as required by the Bureau of Apprenticeship and Training. Students completing the technical classroom work and the other IBEW Apprenticeship requirements will then be qualified to work as a skilled union journeyman wireman in residential, commercial and industrial construction projects found in the electrical and teledata industries. The remaining course requirements for the associate's degree, including the General Education courses, can be fulfilled on Northampton's campus or through distance education.

Qualification to enter the IBEW-sponsored option requires acceptance into the Electrical Construction Trade apprenticeship program through the JATC at Local #375. Contact IBEW Local #375 at 610-432-9762 for more information on requirements.

All course work can be completed evenings on a part-time basis. Completion of the overall degree will prepare you to grow into positions of higher responsibility. It will also enable you to transfer all course work to the following online baccalaureate degree programs:

- B.S. Applied Management through Franklin University
- B.S. Industrial Management through California University of Pennsylvania.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Describe the operation and application of commonly used electrical components and circuits.
- Demonstrate a basic framework of technical vocabulary and symbols.
- Demonstrate the application of commonly used methods of circuit analysis and theory.
- Test and troubleshoot electrical and electronic circuits.
- Properly use test equipment including oscilloscopes, DC power supplies, function generators, multi-meters, high voltage testers, and megohmmeters.
- Record, interpret and analyze data.
- Interpret technical information in the form of architectural drawings, schematics, specifications, graphs and procedure.
- Use a lab notebook in recording relevant and necessary project information.
- Demonstrate the ability to work both independently and as part of a team.
- Demonstrate written and oral communication skills.
- Demonstrate skills in reporting, analyzing, and researching technical information.
- Appreciate the breadth and dynamics of the electrical construction industry and be prepared to adapt to changes.
- Properly interpret and use the National Electric Code to perform electrical tasks.
- Demonstrate a thorough knowledge of the safety requirements involved in all phases of electrical work.

Electrical Construction Technology - IBEW,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Year	
ELTC 110	Electrical Construction Technology I	6
ENGL 101C	English I	3
MATH 140	College Algebra	3
		12
	Second Year	
CISC 101	Introduction to Computers	3
ELTC 120	Electrical Construction Technology II	6
ENGL 151	English II (Technical Writing Option)	3
		12
	Third Year	
ELTC 230	Electrical Construction Technology III	6
PHYS 101	Physics I	4
----------	Technical Elective +	4
		14
	Fourth Year	
CMTH 102	Speech Communication	3
ELTC 240	Electrical Construction Technology IV	6
----------	General Education Elective ++	3
		12
	Fifth Year	
ELTC 250	Electrical Construction Technology V	6
----------	General Education Elective ++	3
----------	Elective	3
		12

Total Credits	**62**

+ Technical Elective options:

ELTC 265

EMEC 105, 110, 240, 245, 281, 282

HVAC 101, 102, 104, 120, 121, 140, 150

ENGG all

WELD all

++ For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB). One General Education Elective must be taken in a Writing Intensive (WI) section.

- One course should be designated as Diversity (D).

Career Potential: Inside Wireman, VDV Installer/ Technician, Residential Wireman

Electrical Technology

Business & Technology

Specialized Diploma conferred

Program Narrative

Technology used in industry today includes programmable logic controllers, robotics, electrical control and distribution panels, packaging equipment, and shop floor networks. These systems require constant maintenance and repair. That's why jobs continue to be available for well-trained electrical maintenance professionals.

If you need to re-train to improve your employment options, Northampton's specialized diploma is a convenient, fast-track program that can qualify you for immediate employment in the field. Experienced electrical students may also take tests to gain credit for their work experience, reducing the amount of class time needed to earn the diploma even further.

Our program provides the latest skills and knowledge needed to install, wire, repair and troubleshoot standard and programmable controller systems used in manufacturing. Graduates are qualified to work as an electrical maintenance technician, electrician or assistant both in manufacturing and in the electrical construction industry.

Program Features

The program begins by familiarizing students with the theory of electricity and its AC and DC characteristics, working safely with electricity, and basic circuit wiring. You will then gain practical knowledge and skills in working with industrial applications of motors, motor controls, and transformers. At the same time, you'll also be studying the various types of sensors and solid-state devices used in process control and becoming acquainted with the computer workstation used to program and debug today's process control systems.

The program is rounded out with two hands-on courses in programmable logic controllers (PLCs). These classes cover the skills you need to install, operate, program, network and troubleshoot the most popular types of PLCs. You will work as part of a team with the mechanical maintenance and production personnel to solve problems and implement solutions quickly to keep the operation running efficiently.

The program can be completed in its entirety part-time in the evening at Northampton's Main Campus and at our Lehigh Valley Industrial Park IV facilities. Daytime courses are available based on demand. If you're interested in continuing your education beyond the diploma, you can apply most of the course work towards the degree programs in Electromechanical Technology and Electrical Construction Technology.

Program Outcomes

Graduates of the Electrical Technology S.D. program will:

- Demonstrate an ability to work independently and collaboratively.
- Demonstrate safe electrical practices when working with electrical control and distribution equipment.
- Describe the operating principles and function of the electrical control and power components and circuits used in automated equipment.
- Demonstrate the proper use of common electrical diagnostic instruments.
- Operate, troubleshoot and diagnose common industrial circuits used in control and distribution.
- Analyze and present data in an acceptable and standardized manner.
- Demonstrate observational, integrative, and synthetic skills.
- Demonstrate a basic framework of technical vocabulary and graphic interpretation applicable to the area of electrical systems maintenance.
- Operate, program, troubleshoot, repair and modify programmable logic controllers and associated networks commonly found in industry.
- Size components and wire industrial control circuits based on appropriate industry standards.

Electrical Technology,

Specialized Diploma

Course Code	Course Title	Credits
ELTC 107	Electrical Wiring I	2
ELTC 109	Electrical Wiring II	3
ELTC 211	National Electrical Code	4
EMEC 101	Electrical Fundamentals	3
EMEC 135	Electrical Motors and Controls	4

EMEC 240	Industrial Control Systems I	4
EMEC 245	Industrial Control Systems II	3
OFAD 147	Introduction to Windows	1
	Total Credits	**24**

Career Potential: Industrial Electrician, Construction Electrician

Electromechanical Technology

Business & Technology

Degree awarded: Associate in Applied Science

Automated Systems Major

Program Narrative

Industrial technology is advancing at an amazing pace. The use of electromechanical automation to control manufacturing processes ensures high productivity and competitiveness in the global economy. It also demands well-trained technicians who can service, maintain, install and retrofit this sophisticated equipment.

Northampton's associate's degree prepares you for a rewarding career. Our graduates are qualified to work on such technology as robotics, material handling systems, pharmaceutical packagers and most machines and equipment being controlled with programmable logic controllers.

You can choose to complete our specialized diploma in Electrical Technology to enter the field more quickly. However, if you would like to add to your competitiveness or are considering furthering your education to the bachelor's degree level, Northampton's associate's degree in Electromechanical Technology is an excellent option.

Program Features

Northampton's Electromechanical Technology Automated Systems program curriculum was developed with the assistance of many of the areas leading manufacturers and engineering firms. We designed the program to meet the demands of local and national manufacturers for entry-level employees who have broad-based hands-on skills.

As a student in the program, you'll gain a strong understanding of basic electrical, mechanical and computer skills before actual hands-on exposure to programmable equipment and instrumentation. Industry experienced instructors introduce you to specific areas of expertise such as motor controls, fluid power, mechanisms, programmable logic controllers and industrial networks.

Two capstone courses in electromechanical systems offer the chance to apply all of the specific areas of knowledge you've gained to solve problems within complex automation systems. The Practicum course provides an internship experience with an employer, giving you first-hand experience in maintenance and plant engineering functions. As part of the associate's degree program, you will complete general education coursework that prepares you to better communicate and work with all departments within an organization. This can be vital if you wish to grow into a supervisory position.

The program can be completed on either a full-time or a part-time evening basis using the College's facilities on the Main Campus and Lehigh Valley Industrial Park IV.

Graduates of our program can transfer their coursework towards one of two online Bachelor of Science degrees: Applied Management through Franklin University and Industrial Management through California University of Pennsylvania. Check with your advisor for more information and options in course selection.

Program Outcomes Automated Systems Major

Graduates of the Electromechanical Technology Program: Automated Systems will be able to:

- Demonstrate an ability to work independently & collaboratively.
- Demonstrate competent speaking skill when working with diverse groups.
- Describe the operation and application of commonly used types of automated technology and instrumentation used in modern manufacturing and processing.
- Demonstrate observational, integrative and synthetic skills.
- Demonstrate proficient research and computer skills in data gathering and analysis.
- Demonstrate a basic framework of technical vocabulary and graphics interpretation applicable to the area of equipment maintenance and design.
- Describe the principles and function of the mechanical, electrical and fluid power components and assemblies used in automated equipment.
- Operate, program, troubleshoot, repair and modify programmable automation equipment and associated components commonly found in industry.
- Demonstrate the proper use of common mechanic tools and measuring gages used in automated systems.
- Apply mathematics to solving equipment related problems.
- Analyze and present data in an acceptable and standardized manner.
- Demonstrate the use of OSHA safety standards in servicing electromechanical equipment.
- Demonstrate competent technical writing skills.

Electromechanical Technology - Automated Systems,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Year	
CISC 101	Introduction to Computers	3
EMEC 101	Electrical Fundamentals	3
ENGG 117	Technical Drawings and Specifications	3
ENGL 101C	English I	3
MATH 140	College Algebra	3
		15
	Second Semester	
CMTH 102	Speech Communication	3
EMEC 105	Introduction to Fluid Power	3
EMEC 110	Mechanical Components	4
EMEC 135	Electrical Motors and Controls	4
ENGL 151	English II +	3
		17
	Third Semester	
EMEC 240	Industrial Control Systems I	4
EMEC 253	Electromechanical Systems I	4
PHYS 101	Physics I	4
----------	General Education Elective	3
----------	General Education Elective	3
		18
	Fourth Semester	
EMEC 245	Industrial Control Systems II	3
EMEC 254	Electromechanical Systems II	4
EMEC 260G	Electromechanical Technology Practicum	2
----------	Technical Elective ++	4
----------	Elective	3
		16
	Total Credits	**66**

+ Students are strongly advised to select the Technical Writing option of ENGL 151.

++ Technical Elective options: any EMEC, ELEC, ELTC, ENGG, CHEM, CISC, HVAC or WELD except ELEC 115, 235; ENGG 100.

- For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institution over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of EMEC 260G satisfies the Writing Intensive (WI) requirement.

Career Potential: Electromechanical Technician, Maintenance Mechanic, Service Technician

Leading To: Maintenance Supervisor, Service Manager

Indoor Environmental Control Major

Degree awarded: associate in applied science

Program Narrative

Indoor environmental controls continue to become more and more sophisticated with each technological development. High-efficiency and environmentally sustainable equipment provides affordable and reliable comfort in our factories, offices and homes. These systems create the demand for well-trained technicians who can service, maintain, install and retrofit complex equipment.

Graduates of Northampton's Indoor Environmental Control associate's degree program are qualified to work on such technology as air conditioning, oil and gas burners, heat pumps, ventilation and commercial refrigeration systems located in residences, offices, industrial plants, medical and educational institutions and retail establishments. Earning an associate's degree gives you an additional competitive edge, particularly if you are interested in growing into supervisory positions. It is also a stepping stone to an advanced degree, such as a bachelor of science.

Program Features

Northampton's Electromechanical Technology Indoor Environmental Systems program was developed with the assistance of many of the areas leading HVAC/R organizations. Because of this, you can be confident that your studies will meet the demands of local and national HVAC dealers and fuel companies.

Industry experienced instructors provide the basic fundamentals of electrical and mechanical systems as well as over 400-hours of in-depth, hands-on study of actual refrigeration, burner and ventilation systems. As a student in the program, you will be prepared to take the EPA Refrigerant Technician licensure test, which is held at NCC. The Practicum course provides an internship experience with an employer, allowing you first hand experience in HVAC and refrigeration field service. The associate's degree general

education coursework rounds out your education, allowing you to communicate and work more effectively with diverse customers, suppliers and co-workers.

Our program can be completed on either a full-time or part-time evening basis using our facilities in the Lehigh Valley Industrial Park IV. Graduates of this program can also transfer their coursework towards two online Bachelor of Science degrees: Applied Management through Franklin University and Industrial Management through California University of Pennsylvania. Check with your advisor for more information and options in course selection.

Program Outcomes Indoor Environmental Control Major

Graduates of the Electromechanical Technology Program: Indoor Environmental Systems will be able to:

- Demonstrate an ability to work independently & collaboratively.
- Demonstrate competent speaking skill when working with diverse groups.
- Describe the operation and application of commonly used types of heating, ventilating, air conditioning and refrigeration systems used in residential and commercial facilities.
- Demonstrate observational, integrative and synthetic skills.
- Demonstrate proficient research and computer skills in data gathering and analysis.
- Demonstrate a basic framework of technical vocabulary and graphics interpretation applicable to the area of equipment maintenance and design.
- Describe the principles and function of the mechanical, electrical and fluid power components and assemblies used in HVAC/R systems.
- Operate, program, troubleshoot, repair and modify equipment and associated components commonly found in air conditioners, heat pumps, gas burners, oil burners and commercial refrigeration systems.
- Demonstrate the proper use of common mechanic tools and measuring gages used in HVAC/R construction and troubleshooting.
- Apply mathematics to solving equipment related problems.
- Analyze and present data in an acceptable and standardized manner.
- Demonstrate the use of OSHA safety standards in servicing electromechanical equipment.
- Demonstrate competent technical writing skills.

Electromechanical Technology - Indoor Environmental Control,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Year	
CISC 101	Introduction to Computers	3
EMEC 101	Electrical Fundamentals	3
ENGG 117	Technical Drawings and Specifications	3
ENGL 101C	English I	3
MATH 140	College Algebra	3
		15
	Second Semester	
CMTH 102	Speech Communication	3
EMEC 105	Introduction to Fluid Power	3
EMEC 110	Mechanical Components	4
EMEC 135	Electrical Motors and Controls	4
ENGL 151	English II +	3
		17
	Third Semester	
HVAC 101	Fundamentals of HVAC/R I	3
HVAC 102	Fundamentals of HVAC/R II	3
HVAC 120	Heating: Oil Systems	2
HVAC 121	Heating: Gas Systems	2
HVAC 140	Heat Pump Systems	2
PHYS 101	Physics I	4
----------	Elective	3
		19
	Fourth Semester	
ELTC 107	Wiring I	2
HVAC 104	Refrigeration Troubleshooting	3
HVAC 110	Print Reading for HVAC/R	1
HVAC 150	Airflow and Distribution	3
EMEC 260G	Electromechanical Technology Practicum	2
----------	General Education Elective	3
----------	General Education Elective	3
		17

Total Credits 68

+ Students are strongly advised to select the Technical Writing option of ENGL 151.

++ Elective options: any EMEC, ELEC, ELTC, ENGG, CHEM, CISC, HVAC or WELD except ELEC 115, 235; ENGG 100.

- For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of EMEC 260G satisfies the Writing Intensive (WI) requirement.

Career Potential: Facilities Maintenance Mechanic, HVAC Service Technician, Refrigeration Technician

Electronics Technology

Business & Technology

Degree awarded: Associate in Applied Science; Specialized Diploma conferred

Program Narrative

Today's high technology companies want to hire well-rounded electronics technicians who can help their businesses grow profitably. Northampton's Electronics Technology program integrates comprehensive electronic circuit theory with practical hands-on lab work. Students develop solid troubleshooting skills using modern industry-quality instruments.

Northampton graduates are employed in areas such as manufacturing, installation, repair, operation, and product design. Other graduates choose power generation, industrial control, or sales. Employers value Northampton graduates because they are well-trained and can step right in to resolve many design and application problems.

Program Features

Our program is based on continuous industry input and evaluation of electronics programs nationwide. The result is a practical curriculum that emphasizes a strong foundation in electronics fundamentals while developing skills critical to success in the field. Your studies will include:

- *Core Coursework:* Two semesters of DC/AC circuit analysis, digital electronics, and solid state devices; one semester of linear integrated circuits and microprocessors.
- *Mechanical Skills:* Courses include Electronics Manufacturing, Mechanical Skills, and Team Projects.
- *Computer Skills:* We emphasize applications such as MultiSIM, MS Word, Excel, PowerPoint, and AutoCAD.
- *Communication Skills:* Your reading, writing, and presentation skills, as applied to technical topics, will be developed over the course of the program.
- *Project Work:* Integrated into all semesters.

Upon graduation, you will be well prepared to enter and advance in the workforce, or you may choose to continue your education toward a four-year bachelor of science degree in electronics technology. We have relationships that can create a smooth transitions at institutions such as Bloomsburg University (BS in Electrical and Electronic Technology), Pennsylvania State University (Harrisburg Campus), Pennsylvania College of Technology (Williamsport), New Jersey Institute of Technology (Newark, NJ), Rochester Institute of Technology (Rochester, NY), or at many other colleges and universities.

Students completing this program may also complete their Bachelor of Science degree in Applied Management through Franklin University by completing approximately 24 additional course credits at NCC and an additional 40 course credits through Franklin University's online courses. Check with your advisor for more information and options in course selection.

We carefully schedule the program's courses so that you can earn the A.A.S. degree in two years of full-time study. Students generally begin the program in August. You can also complete your degree in four years through evening part-time study. An attractive option for many students is to complete the A.A.S. degree through part-time evening study, with employers supporting the continuing education through tuition reimbursement.

Program Outcomes

Graduates of the program will:

- Prototype, evaluate, and assist in the design of electronic circuits using fundamental analog and digital concepts.
- Fabricate electronic circuit layouts and electromechanical prototypes.
- Use computer technology to conduct research, analyze data, simulate circuit performance, design circuits, program microprocessors, and document findings.
- Select and operate electronic test equipment such as digital multimeters, oscilloscopes, power supplies, and function generators to test and troubleshoot analog and digital circuits.
- Apply mathematics and reasoning to predict electronic circuit performance and to analyze data.
- Effectively speak, write, and graphically illustrate the discourse of electronics technology.
- Work both independently and as a contributing member of an effective team.
- Use applied research, critical thinking, and problem solving skills to support lifelong professional development.

Electronics Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ELEC 101	DC/AC Circuit Analysis I	4
ELEC 121	Technical Computer Applications	2
ELEC 177	Electronics Manufacturing I	2
ENGL 101C	English I	3
MATH 140	College Algebra	3
----------	General Education Elective	3
		17
	Second Semester	
CMTH 102	Speech Communication	3
ELEC 126	Digital Electronics I	3
ELEC 151	DC/AC Circuit Analysis II	4
ELEC 155	Introduction to Solid State Devices	2
EMEC 115	Mechanical Skills for Technicians	1
ENGL 151	English II +	3
		16
	Third Semester	
ELEC 207	Solid State Circuits	4
ELEC 208	Digital Electronics II	3
ENGG 100	Engineering Graphics	3
PHYS 101 or	Physics I or	
CHEM 120	General Chemistry I	4
		14
	Fourth Semester	
ELEC 226	Microprocessors I	3
ELEC 230	Team Project	2
ELEC 232	Linear Integrated Circuits	4
----------	General Education Elective	3
----------	Elective	3
		15
	Total Credits	**62**

+ Students are strongly advised to take the Technical Writing Option of ENGL 151.

- For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH), Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- One General Education Elective must be taken in a Writing Intensive (WI) section.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirement.

NOTE: Students planning to transfer to BS in Electrical Engineering Technology programs should consult with the 4-year institution and the program advisor before selecting courses.

Electronics Technology,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
ELEC 101	DC/AC Circuit Analysis I	4
ELEC 121	Technical Computer Applications	2
ELEC 177	Electronics Manufacturing I	2
MATH 140	College Algebra	3
		11
	Second Semester	
ELEC 126	Digital Electronics I	3
ELEC 151	DC/AC Circuit Analysis II	4
ELEC 155	Introduction to Solid State Devices	2
EMEC 115	Mechanical Skills for Technicians	1
		10
	Total Credits	**21**

Career Potential: Senior Electronics Technician

Emergency Services Administration

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Whether an emergency is the result of a natural disaster or man-made, governments, schools, hospitals and industry need to be able to respond effectively. Emergency Services administrators are the managers who are charged with meeting this important challenge by providing fire, police, emergency medical services and more. Northampton's associate's degree is open to all qualified applicants. If you are an experienced first responder interested in advancing your career, this program could be an excellent option for you. Individuals employed in the private sector as safety officers or security professionals can also develop and strengthen their capabilities and effectiveness by completing this program.

Northampton's graduates are employed in positions with job titles such as emergency management coordinator, deputy or assistant emergency management coordinator, public safety director, emergency operations director, fire fighter, emergency medical technician, law enforcement official, safety professional or security coordinator.

Program Features

Our program and course content has been developed to be congruent with concepts established by the Federal Emergency Management Agency (FEMA), Pennsylvania Emergency Management Agency (PEMA) and local emergency planning committees. Courses emphasize an interoperable approach to the total cycle of emergency management. We develop your administrative skills, including accounting and human resources management, so that you can function at an operational level within an emergency response organization or agency. Required General Education courses round out your training so that you are equipped to communicate well with diverse staff and the community.

Program Requirements

The Emergency Services Administration degree contains provisions for a free elective of three credits in addition to the General Education electives. This program can be completed in the day or evening, on a full-time or part-time basis.

Program Outcomes

Graduates of the program will:

- Demonstrate an understanding of administrative principles as it relates to accounting/finance and management.
- Apply emergency service and public safety skills as they relate to agency/organization operations.
- Acquire and demonstrate strong presentation and communication skills.
- Acquire and practice an understanding of ethics and legal responsibility as it pertains to the gravity of emergency response and public safety.
- Work effectively in both individual and team environments.
- Design and implement a cohesive administrative strategy, effectively combining all elements of successful business practice.
- Employ critical thinking and problem solving techniques relevant to emergency situations.

Emergency Services Administration,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
EMGS 120	Emergency Services Health and Safety	3
ENGL 101C	English I	3
MATH 150	Introduction to Statistics	3
		15
	Second Semester	
EMGS 122	Emergency Action Planning	3
EMGS 231	Law for Emergency Services	3
ENGL 151	English II (Report Writing option)	3
----------	General Education Elective (AH)	3
----------	General Education Elective (SSHB)	3
		15
	Third Semester	
ACCT 101	Financial Accounting I	3
BUSA 226	Human Resource Management	3
EMGS 217	Public Information and Relations	3
EMGS 221	Emergency Service Management	3
POLS 251	State and Local Government (SIT)	3

		15
	Fourth Semester	
BUSA 152	Business Law	3
EMGS 216	Emergency Fiscal Administration	3
EMGS 218	Incident Command and Management	3
EMGS 219	Regulatory Compliance	3
----------	Elective	3
		15
	Total Credits	**60**

- For the General Education Electives, students must select one course from the list of approved courses in each of the following categories: Arts & Humanities (AH) and Social Science: Scientific Study of Human Behavior (SSHB).
- One General Education Elective must be taken in a Writing Intensive (WI) section, and one should be designated as Diversity (D).

Career Potential: Emergency Management Coordinators, Fire Officer, Law Enforcement Officer, Emergency Medical Supervisor, Safety and Security Director, Corrections Officer, Emergency Management Specialist, Emergency Response Manager

Emergency Services Technology

Business & Technology
Degree awarded: Associate in Applied Science;
Specialized Diploma conferred

Program Narrative

In the emergency services professions, masterful skills and attention to detail aren't just job assets: they save lives.

NCC's Emergency Services Technology program trains you to carry out safely and effectively the difficult and dangerous duties of saving lives and property. The program is primarily designed for recent high school graduates who are interested in emergency services, and those who are already serving with a unit and want to upgrade their skills.

Program Features

A number of program electives are available to allow you to select and focus on your area of personal interest. You will learn the professional techniques you need to meet the challenges in your specific area. In addition, you will take courses in general education to help give you a broader understanding of the type of work for which you are preparing. To help students and graduates stay up-to-date, we will announce through the program special "brush-up" and recertification seminars in EMT, CPR, and other related offerings.

Enrollment in the EMT program is limited and priority will be given to students who are affiliated with a state-recognized Emergency Services program. If you are currently in active service with any approved Northampton County emergency unit, you will be able to take all EMGS titled courses tuition-free. Please be aware that even though you may qualify for tuition waivers in EMGS courses, you will pay regular tuition for your general education courses and the textbooks they might require.

You can enter this program any given semester and can complete it within four years by attending evening classes on a part-time basis.

Program Requirements

To qualify for the tuition waiver, you must complete the College Application for Admission form and present your certification document. You will be required to enroll in the degree program in order to take advantage of the tuition waiver.

Contact the Admissions Office at 610-861-5500 for further information.

Emergency Services Specialist
Specialized Diplomas conferred

Program Narrative

The demand for well-trained people in the emergency services field is ongoing and the employment outlook is very good. NCC's Emergency Services Specialist diploma program was created to respond to the workforce needs of our region and is unique in Northampton County.

The program provides an opportunity for anyone wanting to enter or advance quickly in this challenging career field. The program is an excellent option for people currently employed as emergency service personnel who want additional training and education for professional advancement or for personal growth in the profession. A tuition-free enrollment option is in place for emergency services personnel currently employed by the County.

Program Features

If you are interested in a fast-track option, our Emergency Services Specialist program provides an alternative level of achievement in a shorter period of time compared to our associate's degree program. The curriculum includes five required courses (16 credits) and nine credits of EMGS elective courses allowing you to tailor the program to your individual goals and interests. Electives include advanced firefighting courses, rescue courses, Emergency Medical Technician courses, and inspection and management courses.

After you've completed the specialized diploma, you may choose to continue your studies. In this case, you can apply all of your specialized diploma courses toward an associate degree program or transfer your credits to another institution. All of the courses in the specialized diploma curriculum are offered as part of the current degree program.

The program can be completed on a part-time schedule.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Utilize skills to develop decision making and problem solving abilities in an emergency situation.
- Function safely and effectively as a member of an emergency services team.
- Develop a management approach in the various segments of emergency services, Public Safety (Fire/ Emergency Medical), and the Private Sector (Industry).
- Develop standard operating procedures for emergency operations.
- Develop a pre-plan for fire and hazardous materials emergencies.
- Develop a fire prevention program aimed at a particular target audience.

Emergency Services Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
EMGS 104	Essentials of Firefighting and Emergency Response	5
EMGS___	Program Elective +	3
ENGL 101C	English I	3
MATH 103	Applications in Mathematics	3
----------	General Education Elective	3
		17
	Second Semester	
CMTH 102	Speech Communication	3
EMGS 151	Fire Prevention	3
EMGS___	Program Elective +	3
ENGL 151	English II	3
----------	General Education Elective	3
		15
	Third Semester	
CISC 101	Introduction to Computers	3
EMGS 221	Emergency Service Management	3
EMGS 231	Emergency Service Law	3
----------	General Education Elective	3
----------	Elective	3
		15
	Fourth Semester	
EMGS 201	Hazardous Materials	3
EMGS___	Program Electives +	9
----------	General Education Elective	3
		15
	Total Credits	**62**

+ Program electives are restricted to courses with an EMGS prefix.

- For the General Education Electives, students must select one course from the list of approved courses in each of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB); Science (SCI) - PHYS 152 is recommended.
- One course should be designated as Diversity (D).
- One General Education Elective must be taken in a Writing Intensive (WI) section.

Emergency Services Technology

Emergency Services Specialist,

Specialized Diploma

Course Code	Course Title	Credits
EMGS 104	Essentials of Firefighting and Emergency Response	5
EMGS 151	Fire Prevention	3
EMGS 221	Emergency Services Management	3
EMGS 231	Emergency Services Law	3
EMGS 201	Hazardous Materials	3
EMGS___	Program Electives +	9
	Total Credits	**26**

+ Program electives are restricted to courses with an EMGS prefix. **Emergency Services Technology**

Emergency Medical Technician,

Specialized Diploma

Allied Health and Sciences

Course Code	Course Title	Credits
EMGS 115	Emergency Medical Technician	6
	Total Credits	**6**

Career Potential: Emergency Services Technician, Emergency Medical Technician, Firefighter

NCC students have transferred to: Holy Family College

Engineering

Business & Technology

Degree awarded: Associate in Science

Program Narrative

Northampton's Engineering program is designed primarily for transfer to a baccalaureate degree program in engineering. If your goal is to earn a bachelor's degree in engineering, our program can be an affordable and convenient way to get started. Many of our students transfer and complete degrees at Lehigh and Drexel Universities, Lafayette College, Penn State, Rutgers, Northeastern and many other engineering schools. By beginning your studies at Northampton, you could save thousands of dollars.

If you plan to transfer to a four-year institution, we encourage you to check with that institution to see what its requirements are. Then carefully select your courses here with the help of an advisor to be sure that they will meet your transfer school's requirements. Historically, our transfer students generally perform as well or better in their transfer school as they did when they were enrolled at Northampton.

As a graduate of our program you may also choose to transfer into engineering technologies or go directly into industry in a position that requires math, science, and computing skills.

Program Features

Engineering students at Northampton take courses designed to develop skills common to all engineering specialties - chemical, civil, electrical, mechanical, and more. Our curriculum parallels that of the first two years in typical engineering schools.

Your professors are full-time and will conduct both the lecture and lab segments of your studies. You can also look forward to small class sizes, which ensures personal attention when you need it. As part of our program, you will have access to a full range of student services, including career and personal counseling, transfer counseling, tutoring, and job placement.

More importantly, you may study full-time or part-time. Courses in this program are offered primarily during the day; however, many have evening sections.

Program Requirements

Engineering is one of the most demanding and challenging of all college majors. Most students pursuing an engineering degree have strong background in math (algebra, geometry, trigonometry, pre-calculus), physics, and chemistry. If you feel you need help or haven't had classes in these areas, NCC advisors can help you schedule specific courses to prepare you for engineering study.

For further information contact the Admissions Office at 610-861-5500 or e-mail us at engineering@northampton.edu .

Program Outcomes

Graduates of NCC's Engineering Program will:

- Transfer to a four-year engineering program in any engineering discipline.
- Move directly into industry in a position requiring math, science, and computing skills.
- Demonstrate an ability to work independently and collaboratively as a team.
- Demonstrate basic skills common to all engineering specialties.
- Effectively research and collect data using various published resources and the Internet.
- Analyze and present data in an acceptable, methodical, and standardized manner.
- Demonstrate competent technical knowledge in engineering-related areas.
- Demonstrate competent speaking skills when working with diverse groups.
- Demonstrate observational, integrative, and synthetic skills.
- Demonstrate a basic framework of technical vocabulary and graphical interpretation skills.
- Successfully apply mathematics (algebra, trigonometry, geometry and calculus) to solving engineering problems.

Engineering,

Associate in Science Degree

Course Code	Course Title	Credits
	First Semester	
CHEM 120	General Chemistry I	4
ENGL 101C	English I	3
MATH 180	Calculus I	4
----------	Social Science: Societies and Institutions over Time Elective (SIT)	3

		14
	Second Semester	
CISC 115	Computer Science I	4
ENGL 151C	English II	3
MATH 181	Calculus II	4
PHYS 215	Physics for Science & Engineering I	5
		16
	Third Semester	
CMTH 102	Speech Communication	3
MATH 210	Calculus III	4
PHYS 225	Physics for Science & Engineering II	5
----------	Engineering Elective +	3/4
		15/16
	Fourth Semester	
MATH 211	Differential Equations	4
----------	Engineering Elective +	3/4
----------	Arts & Humanities Elective (AH)	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
----------	Technical Elective ++	3/4
		16/18
	Total Credits	**61/64**

+ Engineering Elective options: ENGG 201, 251, 252, 191, 192, 193, 194 or a course approved by the Engineering Department.

++ Technical Elective options: any Engineering Elective (above list); ENGG 100; CHEM 201, 220; CISC 125, 230; or a course approved by the Engineering Department.

- One course should be designated as Diversity (D).
- One General Education Elective (AH, SIT or SSHB) must be taken in Writing Intensive (WI) section. The program-related writing intensive competency is satisfied by the combination of PHYS 215 and PHYS 225.
- All electives must be chosen from the list of courses which are applicable to AA and AS degrees.

Career Potential: Transfer program, Leading to: Engineer

NCC students have transferred to: Lehigh University, Lafayette College, Drexel University, Pennsylvania State University, Rutgers University, Northeastern University, and others . . .

Fine Art

Humanities & Social Sciences

Degree awarded: Associate in Arts

Program Narrative

Northampton's Fine Art Program is a transfer degree meant to parallel the first two years of a bachelor's degree. The program provides students with a thorough introduction to the basic areas of study in the visual arts. We help you develop a strong set of foundation skills for future artistic growth.

Upon successful completion of our program, you will have a clear understanding of the core technical, conceptual and aesthetic issues involved in creating successful works of art. You also will have prepared a portfolio, drawn from examples of your course work, for transfer to a four-year baccalaureate program (B.A. or B.F.A.) at a college, university or art school.

In NCC's well-equipped studio facilities you will have the opportunity to explore the arts in small classes with close student-instructor interaction. In your fourth semester, studio time will increase greatly to allow you to hone your talents while working on art projects for credit. Also during this semester, you will have the chance to consult one-to-one with a professional artist from a gallery in New York City, who will examine and critique your work. Courses in this program are offered primarily during the day.

Program Features

First year art offerings include Drawing I, Drawing II, Principles of 2-D Design & Color, and Principles of 3-D Design. These courses emphasize essential skills for studying all of the visual arts. You will also take introductory courses in Art History, Computer Graphics, and Painting. Advanced Drawing and Painting follow, along with additional choices in 2-D and 3-D media such as Photography, Printmaking, Sculpture, and Ceramics. In the final semester, Media Art features a synthesis of traditional art techniques and experimental digital technology.

During the final capstone course, Individual Studio/ Professional Practices, students have the opportunity and personal challenge of synthesizing their accumulated experience and knowledge into a highly individualized series of artworks for a final group exhibition. Students also maintain an extensive sketchbook/journal and use this resource for writing assignments and studio work. The program also expands your knowledge of the professional fine art world through visits to museums, galleries, and art centers in New York City, Philadelphia, and the Lehigh Valley. There, you will speak with artists, curators, gallery directors, and art museum personnel who will share their wealth of experience.

Program Requirements

Applicants to the program are required to submit a portfolio or pass an art test as part of the admission requirements.

Interested in seeing examples of our students' art work? Visit the NCC Art Department website - http://art.northampton.edu - for more information.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Understand basic art *media* (materials) and create artworks demonstrating acquired core techniques and their applications with proficient *craftsmanship*.
- Understand and utilize *design* (elements of art and principles of organization) in the creation of successful artworks.
- Show *creativity* (the process of synthesizing understanding and imagination) in design solutions on issues of *form, style, and content*.
- Recognize and use the *technical* and *aesthetic terminology* of the fine arts.
- Develop and use *critical thinking* skills to analyze artworks, both verbally and in writing.
- Understand the essential workings of the *professional art world* and be prepared to *transfer* to four year colleges/universities/art schools offering the B.A. or B.F.A. degree.

Fine Art,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
ARTA 101	Art History Survey	3
ARTA 107	Drawing I	3
ARTA 111	Principles of 2-D Design and Color	3
ARTA 170	Computer Graphics	4
ENGL 101C	English I	3
		16
	Second Semester	
ARTA 110	Principles of 3-D Design	3
ARTA 124	Drawing II	3
ARTA 158	Painting I	3
CMTH 102	Speech Communication	3
ENGL 151C	English II	3
		15
	Third Semester	
ARTA 162 or	Sculpture or	3
ARTA 161	Ceramics	
ARTA 204	Drawing III	3
ARTA 226	Painting II	3
----------	Science Elective (SCI)	3/4
----------	Social Science: (WI) Societies and Institutions over Time Elective (SIT)	3
		15/16
	Fourth Semester	
ARTA 164 or	Printmaking or	
ARTA 151	Black and White Photography	3
ARTA 220	Media Art	3
ARTA 260	Individual Studio/ Professional Practices	4
MATH 120	The Nature of Mathematics	3
----------	Social Science: (WI) Scientific Study of Human Behavior Elective (SSHB)	3
		16
	Total Credits	**62/63**

- The electives specified above must be taken from the list of approved courses in each of the categories.
- One course should be designated as Diversity (D).
- Students must take two General Education Electives (SIT, SSHB or SCI) in Writing Intensive (WI) sections. WI course sections are identified with a "G" following the course number.
- Computer competencies are included in various courses in this program, specifically ARTA 111, 170, and 220. Thus, completing the program automatically satisfies the computing requirement.

Career Potential: Transfer program for artists, art educators, and visual art related careers

NCC FINE ART students have transferred to: Kutztown University, East Stroudsburg University, Millersville University, Moravian College, Cedar Crest College, University of the Arts (UArts), Tyler School of Art/Temple University, School of Visual Arts (SVA), The Cooper Union for the Advancement of Science and Art, Pratt Institute, Parsons The New School for Design, Fashion Institute of Technology (FIT), Herron School of Art and Design - Indiana University-Purdue University, Massachusetts College

of Art, Rhode Island School of Design (RISD), School of the Art Institute of Chicago (SAIC)

Important Resources:

- Art Department Website - http://art.northampton.edu/artdepartment/index.php

Funeral Service Education

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Program Narrative

Are you interested in:

- Helping Others?
- The Human Biological Sciences?
- Community Involvement?
- A business environment?

Have you considered a career in Funeral Service?

The funeral service professional:

- Provides support to the bereaved during initial stages of grief.
- Arranges and directs funeral ceremonies.
- Performs the transfer of the deceased from the place of death.
- Prepares the body according to the wishes of the survivors and requirements of the law.
- Sells funeral related services and merchandise.
- Establishes pre-arranged/pre-financed funeral accounts.
- Secures information for legal documents.
- Files death certificates and other legal papers.
- Assists survivors with details for filing claims for death benefits.
- Helps individuals adapt to changes in their lives following a death through post-death counseling and support group activities.

Why should you enter funeral service?

- You are a caregiver who desires to serve others.
- You believe ceremony is an effective way of expressing feelings.
- You are open-minded about ways in which people of different faiths and cultures express their feelings and practice their beliefs.
- You are interested in the technical sciences.
- You exhibit sensitivity and compassion for those with whom you are in contact.
- You are interested in learning all aspects of a business.

Funeral Service Education provides you with a comprehensive understanding of all phases of funeral service necessary to serve the bereaved in a professional and ethical manner. The need for funeral directors and embalmers will escalate over the next twenty years and the earning potential has never been better.

Mission Statement

Our mission as Northampton Community College Funeral Service Education is to educate students in the fundamental skills, knowledge, and practice of funeral service. We strive to create a supportive learning environment which fosters communication, critical thinking, self-discipline, and compassion. The program embraces the college's mission, vision and values, and is committed to providing an unexcelled educational experience that is inclusive and diverse.

Funeral Service Education Aims and Objectives

The Funeral Service Education Program has as its central aim recognition of the importance of funeral service education personnel as:

- members of a human service profession,
- members of the community in which they serve,
- participants in the relationship between bereaved families and those engaged in the funeral service profession,
- professionals knowledgeable of and compliant with federal, state, and local regulatory guidelines,
- professionals sensitive to the responsibility for public health, safety and welfare in caring for human remains.

Objectives of the Funeral Service Education Program:

- To enlarge the background and knowledge of students about the funeral service profession.
- To educate students in every phase of funeral service, and to help enable them to develop the proficiency and skills necessary in the profession, as defined above.
- To educate students concerning the responsibilities of the funeral service profession to the community at large.
- To emphasize high standards of ethical conduct.
- To provide a curriculum at the post secondary level of instruction.
- To encourage research in the field of funeral service.

Program Features

Northampton's Funeral Service Education is designed to meet the educational requirements for licensure set forth by the Pennsylvania State Board of Funeral Directors. Students have the option of participating in clinical embalming laboratories on campus or in field study at a funeral home. The Funeral Service Education core is offered in two sequences, **Traditional** (for high school applicants) or **Accelerated** (for college transfer students). Funeral Service Education core courses (courses prefixed with FUNS) may be taken only by those admitted to the traditional or accelerated sequence.

- All students of Funeral Service Education sit for the National Board Examination of the International

Conference of Funeral Service Examining Boards prior to graduation.

Upon graduation you will be awarded an Associates in Applied Science degree and will be eligible to begin your 12-month Resident Internship. Our graduates have experienced a high level of placement within the profession.

Northampton Community College is a member of the University Mortuary Science Education Association, and is accredited by the American Board of Funeral Service Education (ABFSE), 3414 Ashland Ave., Suite G, St. Joseph, MO 64506, 816-233-3747. The annual passage rate of first-time takers on the National Board Examination (NBE) for the most recent three-year period for this institution and all ABFSE accredited funeral service education programs is posted on the ABFSE web site (www.abfse.org).

Students are admitted to the program in the Summer and Fall sessions of each year and are encouraged to participate in the social and community service activities of Sigma Phi Sigma-The Funeral Service Education Student Association. Funeral Service Education core courses are offered during the day.

Program Admission Requirements

Acceptance is competitive and you will need to be academically prepared before being accepted into one of the two sequences. If you are not academically prepared, we may consider you for the **Pre-Core Funeral Service Education** program.

High school applicants for the traditional degree sequence (FSED) will need to have completed minimum admission requirements of Biology and Chemistry (with labs) with a grade of C or better. Also, all applicants must have achieved an overall high school G.P.A. of 2.5 or better.

Northampton welcomes transfer students. If you have earned general education credits prior to admission you may be able to complete this program via an accelerated degree sequence (FSAD) in two academic semesters. You may transfer up to 69 semester credits toward the FSAD program, providing you have completed the work at a regionally accredited college/university and achieved a grade of C or better in each course. Students who have completed college level work prior to applying to the accelerated degree program must have a minimum G.P.A. of 2.50 to be considered.

A physical examination and completed medical health form are also required for acceptance.

The application procedure for Funeral Service Education is as follows:

1. Forward completed application with $25 (non-refundable) fee to the Admissions Office.

2. Have official transcripts from all institutions attended (high school and college, if applicable) to the Admissions Office. Your file will not be reviewed until all transcripts are received.

3. Files completed by February 1st will be given primary consideration for acceptance. Applications received after this date will be reviewed on a space available basis only.

The **Pre-Core Funeral Service Education** program is designed for applicants who do not meet the requirements for the Traditional or Accelerated Sequences. A Funeral Service Education advisor will guide you in selecting the appropriate courses that will prepare you to enter the Funeral Service Education core. When you are ready to pursue the Funeral Service Education core phase (which includes all FUNS courses) you need to submit a Clinical/Core Readiness form to the Admissions Office by February 1st. Priority for core seats will be given to those students with the most general education program courses completed and highest G.P.A.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Possess the necessary skills and knowledge to succeed in funeral service
- Complete state and national board examinations requirements.
- Promote funeral service with professionalism and compassion.
- Be satisfied with their education and meet or exceed the expectations of their employers.

Funeral Service Education,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester (Fall)	
BIOS 160	Human Biology	4
ENGL 101C	English I	3
FUNS 101	Principles of Funeral Service	2
FUNS 102	Introduction to Funeral Service	4
MATH ___	Mathematics Elective (QL)	3
		16
	Second Semester (Spring)	
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3

ENGL 151	English II	3
PHIL 111	On Death & Dying	3
----------	Elective	3
		15
	Summer Sessions	
BUSA 152	Business Law I	3
CHEM 135	Chemistry of Life	4
PSYC 103	Introduction to Psychology	3
SOCA 103	Principles of Sociology	3
		13
	Third Semester (Fall)	
BIOS 202	Microbiology	4
FUNS 201	Funeral Home Operations I	4
FUNS 203	General Pathology	3
FUNS 210	Embalming Theory I	3
FUNS 212 or	Clinical Embalming I or	
FUNS 241	Field Study I	1
----------	Business Elective	3
		18
	Fourth Semester (Spring)	
FUNS 105	Funeral Directing	3
FUNS 220	Embalming Theory II	3
FUNS 222 or	Clinical Embalming II or	
FUNS 242	Field Study II	1
FUNS 231	Funeral Home Operations II	2
FUNS 251	US & PA Funeral Law	3
FUNS 255	Cosmetology & Restorative Art	3
PSYC 221	Responding to the Bereaved	3
		18
	Summer Sessions	
ACCT 101	Financial Accounting I	3
BUSA ___	Business Elective	3
----------	Social Science: Societies and Institutions over Time Elective (SIT)	3
----------	Prescribed Elective +	3
		12
	Total Credits	**92**

+ Prescribed Elective options: ACCT 151, BUSA 202, BUSA 221, CISC 104

- For their Social Science: Societies and Institutions over Time (SIT) Elective, students must select a course from the list of approved courses in that category.
- One General Education course must be taken in a Writing Intensive (WI) section. In addition, writing intensive work is included in various courses in this program; thus completing the program automatically satisfies the program-related Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program as well as in CISC101. Thus, completing the program automatically satisfies the computing requirement.
- For their Mathematics (QL) Elective, students must select a course from the list of approved courses in that category.
- Students must earn a grade of "C" or better in all FUNS courses to progress in the program.
- A student must sit for the National Board Examination of the International Conference of Funeral Service Examining Boards prior to graduation.

Funeral Service Education, (Accelerated Sequence)

Associate in Applied Science Degree

Course Code	Course Title	Credits
	Summer Sessions	
BIOS 160	Human Biology	4
ENGL 101C	English I	3
MATH___	Mathematics Elective (QL)	3
PSYC 103	Introduction to Psychology	3
		13
	First Semester (Fall)	
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
ENGL 151	English II	3
----------	Business Elective	3
----------	Elective	3

		15
	Second Semester (Spring)	
ACCT 101	Financial Accounting I	3
BIOS 202	Microbiology	4
BUSA 152	Business Law I	3
PHIL 111	On Death & Dying	3
SOCA 103	Principles of Sociology	3
		16
	Summer Sessions	
CHEM 135	Chemistry of Life	4
BUSA___	Business Elective	3
----------	Social Science: Societies and Institutions over Time Elective (SIT)	3
----------	Prescribed Elective +	3
		13
	Third Semester (Fall)	
FUNS 101	Principles of Funeral Service	2
FUNS 102	Introduction to Funeral Service	4
FUNS 201	Funeral Home Operations I	4
FUNS 203	General Pathology	3
FUNS 210	Embalming Theory I	3
FUNS 241 or	Field Study I or	
FUNS 212	Clinical Embalming I	1
		17
	Fourth Semester (Spring)	
FUNS 105	Funeral Directing	3
FUNS 220	Embalming Theory II	3
FUNS 231	Funeral Home Operations II	2
FUNS 242 or	Field Study II or	
FUNS 222	Clinical Embalming II	1
FUNS 251	US & PA Funeral Law	3
FUNS 255	Cosmetology & Restorative Art	3
PSYC 221	Responding to the Bereaved	3
		18
	Total Credits	**92**

+ Prescribed Elective options: ACCT 151, BUSA 202, BUSA 221, CISC 104

- For their Social Science: Societies and Institutions over Time (SIT) Elective, students must select a course from the list of approved courses in that category.
- One General Education course must be taken in a Writing Intensive (WI) section. In addition, writing intensive work is included in various courses in this program; thus completing the program automatically satisfies the program-related Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program as well as in CISC101. Thus, completing the program automatically satisfies the computing requirement.
- For their Mathematics (QL) Elective, students must select a course from the list of approved courses in that category.
- Students must earn a grade of "C" or better in all FUNS courses to progress in the program.
- A student must sit for the National Board Examination of the International Conference of Funeral Service Examining Boards prior to graduation.

Career Potential: Funeral Director, Embalmer, Pre-Need Funeral Counselor

General Studies

Humanities & Social Sciences

Degree awarded: Associate in Arts

Program Narrative

If you're ready for college, but you are still exploring career choices, an associate's degree in General Studies can be a good way to start your education. Northampton's General Studies major allows you to explore a variety of fields and to discover what subjects suit you best. We'll provide you with a well-rounded selection of studies in social, cultural, behavioral, scientific and computer-related subjects. Upon completion, you will be prepared to transfer to a four-year institution to complete a bachelor's degree in the major of your choice.

Program Features

Our General Studies program is specifically designed so that you can transfer your credits to a four-year college or university. Schools that are a part of the Pennsylvania state college and university system will accept all of your credits; however, if you wish to attend another school, we suggest you choose elective courses that are transferable to the institution of your choice. We encourage you to work closely

with your academic advisor, as well as the transfer advisor in the Office of Academic Advising to ensure your greatest opportunity for a smooth and successful transition to a four-year institution.

Program Outcomes

Graduates of the program will:

- Be prepared to transfer into any of a variety of programs at a four-year college or university.
- Have a broad understanding of social sciences, business, and liberal arts.
- Possess skills necessary to communicate ideas effectively in college, in business, and in life.
- Have an informed awareness of other cultures and an appreciation for the contributions of diverse peoples to the human experience.
- Be able to assess and discuss competing perspectives.
- Know how to retrieve, evaluate, and apply information from a range of sources.
- Have a working competency of basic computer applications.
- Have experience working independently and in teams.

General Studies,

Associate in Arts Degree

Course Code	Course Title	Credits
ENGL 101C	English I	3
ENGL 151C	English II	3
CMTH 102	Speech Communication	3
----------	Communications Elective +	3
----------	Social Science/ Cultural Studies Electives +	15
----------	Mathematics Elective (QL) +	3
----------	Mathematics or Science Elective +	3/4
----------	Laboratory Science Elective (SCI) +	3/4
----------	Business/Technology Electives+	6
----------	Electives	18

----------	**Total Credits**	**60/62**

+Electives must be chosen from the five groupings that follow.

Electives

- For the Electives, students must select one course from the list of approved courses in each of the following three categories: Arts and Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- The Mathematics (QL) and Laboratory Science (SCI) Electives must be selected from the list of approved General Education courses in each of those categories. Refer to list below for exclusions.
- One course should be designated as Diversity (D).
- One General Education Elective must be taken in a Writing Intensive (WI) section. In addition, students must select a second Writing Intensive (WI) course.
- In addition to satisfying the above requirements, the 18 credits of unspecified electives should be selected from those in the groupings below, or from those allowable in the Liberal Arts program, or from the list of courses which are applicable to A.A. and A.S. degrees. Within this, students should select courses which will transfer to the baccalaureate institution of their choice.
- A student who has completed the entire 15-credit Library Technical Assistant specialized diploma may apply these 15 credits to the General Studies degree as free electives.

Communications Electives (3 credits)

These courses enhance communication skills and offer students the opportunity to pursue an interest in the arts as communication.

Course Code	Course Title	Credits
ARTA 107	Drawing I	3
ARTA 124	Drawing II	3
ARTA 158	Painting I	3
ARTA 226	Painting II	3
ARTA 161	Ceramics	3
ARTA 162	Sculpture	3
CMTH 105	Public Speaking (AH)	3
CMTH 111	Acting I (AH)	3
CMTH 115	Technical Theatre	3
CMTH 120	Radio Production	3
CMTH 126	The Communication Arts (AH)	3
CMTH 170	Television Production	3
CMTH 206	Directing (AH)	3
CMTH 212	Acting II (AH)	3
CMTH 215	Intercultural Communication (D)	3
CMTH 225	Scriptwriting	3
ENGL 253	Creative Writing (AH)	3
JOUR 103	Newswriting	3
JOUR 201	Feature Writing	3

MDLA 102/112/122	Elementary French I/ II or Intermediate French I (AH)(D)	3
MDLA 103/113/123/133	Elementary Spanish I/ II or Intermediate Spanish I/II (AH)(D)	3

Business/Technology Electives (6 credits) +

These courses are the most generally valuable introduction to business and technology. They are neither too specialized, nor too technical in nature and should prove both interesting and accessible to the non-major.

Course Code	Course Title	Credits
ACCT 101	Accounting I	3
BUSA 101	Introduction to Business	3
BUSA 131	Principles of Marketing	3
ECON 201	Macroeconomics (SSHB)	3
ECON 251	Microeconomics	3
CISC 101	Introduction to Computers (C)	3
CISC 104	Microcomputer Applications (C)	4
CISC 106	Introduction to Computing with Alice (C)	3
CISC 115	Computer Science I (C)	4

+ 3 credits must be a CISC course.

Social Science/Cultural Studies Electives (15 credits)

These courses inform students about society and culture, past and present. They will help the student to place problems in a broad perspective and to make informed choices about the conduct of their lives. In fulfilling the 15-credit social science/cultural studies elective requirement, **no more than six credits may be earned from any one group below.**

Social and Behavioral Understandings

Course Code	Course Title	Credits
PHIL 111	On Death and Dying (AH)(D	3
PHIL 202	Ethics and Moral Problems (AH)(D)	3
PSYC 103	Introduction to Psychology (SSHB)	3
PSYC 251	Child Psychology	3
PSYC 254	Adoloscent Psychology	3
PSYC 255	Abnormal Psychology	3
SOCA 103	Principles of Sociology (SSHB)(D)	3
SOCA 150	Deviance	3
SOCA 204	Social Problems	3

Cultural Understanding

Course Code	Course Title	Credits
ARCH 100	Architectural History I - Antiquity to 1870	3
ARTA 101	Art History Survey (AH)	3
CMTH 110	Introduction to Theatre (AH)	3
CMTH 211/ENGL 211	Plays: Classical to Contemporary (AH) (D)	3
CMTH 220	Introduction to Film (AH)	3
ENGL 201	British Literature I (AH)	3
ENGL 203	Shakespeare (AH)	3
ENGL 205	American Literature I (AH)	3
ENGL 250	Contemporary Latin American Literature (AH)(D)	3
ENGL 251	British Literature II (AH)	3
ENGL 255	American Literature II (AH)	3
ENGL 256	Modern Poetry (AH)	3
ENGL 257	20th Century Literature by Women (AH)(D)	3
ENGL 260	Contemporary Literature (AH)(D)	3
MUSC 101	Introduction to Music (AH)	3

American Experience

Course Code	Course Title	Credits
ENGL 265G	African-American Literature (AH)(D)	3

GEOG 151	Geography of U.S. and Canada (SIT)	3
HIST 113	American History I (SIT)	3
HIST 121	The Black Experience (SIT)(D)	3
HIST 163	American History II (SIT)	3
HIST 166	Civil War and Reconstruction (SIT)	3
HUMA 121	The American Work Experience (AH)	3
HUMA 140	Women and Power (AH)(D)	3
POLS 110	American National Government (SIT)	3
POLS 251	State and Local Government (SIT)	3

World Experience

Course Code	Course Title	Credits
ENGL 257	20th Century Literature by Women (AH)(D)	3
ENGL264	Irish Literature (AH)	3
GEOG 101	World Geography (SIT)(D)	3
GEOG 121	Introduction to Environmental Problems (SSHB)(D)	3
HIST 103	Ancient and Medieval History (SIT)	3
HIST 153	Foundations of Modern European History - 1300-1815 (SIT)	3
HIST 167	Vietnam (SIT)	3
HIST 168G	History of the Middle East (SIT)(D)	3
HIST 173	Modern European History-1815 to present (SIT)	3
PHIL 121	World Religions (AH)(D)	3
PHIL 201	Introduction to Philosophy (AH)	3
POLS 101	Introduction to Political Science (SIT)	3
POLS 202	International Relations (SIT) (D)	3
SOCA 102	Cultural Anthropology (SIT)(D)	3

Mathematics/Science Electives (9-11 credits) +

These courses help the student comprehend the process of scientific inquiry, to gain quantitative skills and some of the principles of modern scientific knowledge. Such comprehension is the essential foundation for understanding advancing technology that dominates society and the natural environment in which we live.

Course Code	Course Title	Credits
BIOS 100-299	Any 4-credit BIOS Elective (except BIOS 281, 282, 283)	4
CHEM 100-299	Any 4-credit CHEM Elective	4
GEOG 150	Astronomy (SCI)	4
GEOG 210	Meteorology (SCI)	4
GEOL 201	Physical Geology (SCI)	4
MATH 100-299	Any MATH (QL) except MATH 103, 110, 118, 119	3/4
PHYS 101	Physics I (SCI)	4
PHYS 151	Physics II	4
PHYS 152	Physical Science II (SCI)	3

+ 3/4 credits must be math; 3/4 credits must be lab science.

NCC students have transferred to: East Stroudsburg University, Kutztown University, Moravian College, DeSales University, Cedar Crest College, Pennsylvania State University, Temple University

Honors Program

The Honors Program at Northampton Community College provides an enriched educational environment in which students will be challenged to reach their full intellectual potential and to better prepare themselves for the academic demands of the four-year college or university of their choice. The overall goal of the program is to provide an academic atmosphere in which students learn to think critically, creatively, and independently, and to take responsibility for their own learning.

Program Features

The Honors Program at Northampton is flexible and works well with students' intended program of study. Students select from honors sections of courses that are part of the general education core. After successfully finishing 12 credits of honors designated courses and maintaining a GPA of 3.5, students will complete the Honors Program.

Honors faculty members are dedicated to inspiring and challenging students with innovative and exciting strategies. Many honors courses include a service learning component, allowing students to relate and apply the content of their course to community service projects outside the college.

Emphases in honors courses is on participating in alternative learning strategies, producing scholarly papers and projects, and experiencing cultural and social activities both within and beyond NCC.

Program Requirements

Students will be eligible for this program by:

- Completing an NCC Application form.
- Completing an Honors Program Application form.
- Meeting the NCC placement requirement for English I.

Students must meet one of the following entrance criteria:

- Have a minimum high school GPA of 3.5 on a 4.0 scale.
- Graduate from the top 20% of high school class.
- Have a minimum college or university GPA of 3.5 after 12 credits of coursework.
- Secure a recommendation letter from a high school faculty member, counselor or other appropriate designee approved by the honors director. Students choosing the recommendation option will need to complete an interview with the Director of the Honors Program.

Contact the Admissions Office at 610-861-5500 for further information.

Honor Program Outcomes

Graduates of the program will:

- Students will actively participate in the classroom and be more responsible for their own learning.
- Students will apply the critical thinking skills of analysis, synthesis, and evaluation to course related materials.
- Students will identify, understand, and apply the methodologies, principles, and research strategies of discipline.
- Students who complete the honors program will transfer to honors programs at institutions of their choice.

Career Potential: The program will provide an enriched educational environment in which students will be challenged to reach their full intellectual potential and to better prepare themselves for the academic demands of the four-year college or university of their choice.

Hotel/Restaurant Management - A.A.S. Degree

Business & Technology

Degree awarded: Associate in Applied Science

Two options: Restaurant and Hotel

Program Narrative

Employment in the Hospitality industry has reached record-breaking levels locally and internationally. As the industry has expanded, consumer expectations about the quality of their experiences at hotels and restaurants have also been raised to new heights. The Hospitality industry offers exciting and rewarding career options. Your education makes a difference in how competitive you will be for high-paying, senior-level positions.

Northampton Community College offers state-of-the-art training facilities, classroom study, and hands-on practical application. Our program prepares you to gain entry-level management positions in restaurants, hotels, and several hundred other hospitality related careers. Your internship course at Northampton will allow you to begin your career in the hospitality field, while gaining the work experience needed to help you climb the ladder of success. Students develop their specialized skills in the area of their choice, and can advance to management positions within 6 months to 1 year. The National Restaurant Association and The American Hotel and Motel Association offers scholarships to students interested in furthering their career with a formal education.

Restaurant Option

Program Features

For students interested in a career in hospitality food and beverage management, Northampton offers students the opportunity to earn an associate degree in applied science in Restaurant Management. Some of the core classes in the program include basic culinary skills and techniques, food safety and sanitation, menu planning and cost controls, catering and convention services, dining room operations, enhancing guest services and strategic leadership. Students will have hands-on working experience at Northampton's Hampton Winds fine dining restaurant as well as at campus special events.

Because hospitality management requires intense teamwork, our program focuses on group work, professionalism, and learning through experience. Classroom lectures are supplemented by field trips, guest speakers and industry certifications. All students will complete a 225 hour management practicum, where they will complete an internship in their area of interest.

Course credit or advanced placement options may exist for students coming from local high schools and vocational schools. Northampton also has agreements with several colleges and universities for students interested in transferring to a four-year school upon completion of the program. Program instructors and college advisors can help determine the education and career path that will lead students to a successful future.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
- Listen and effectively communicate in a positive, professional, and ethical manner with customers and colleagues of diverse backgrounds
- Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
- Read and accurately interpret standard indicators of the organization's financial health.
- Use appropriate technology for written communication, information gathering, and data analysis to facilitate smooth operation of a hospitality organization.
- Demonstrate leadership and supervisory skills, and an appreciation of diversity to support the organization and its goals.
- Use organization and flexibility, as a team, to complete tasks, make decisions, and problem solve in a timely manner.
- Utilize research and problem-solving techniques to employ "out of the box" critical thinking skills in a variety of hospitality situations.

Career Potential: Restaurant Operations Supervisor/ Manager/Owner, Conference Services/, Banquet Supervisor/Manager, Contract Foodservice Supervisor/ Manager, Food Broker/Distributor, Several Other Restaurant Related Entry-level Positions

NCC students have transferred to: Pennsylvania State University, East Stroudsburg University, University of Delaware, University of Nevada, Las Vegas, Johnson and Wales University

Hotel Option

Program Features

For students interested in a career in hotel management, Northampton offers students the opportunity to earn an associate degree in applied science in Hotel Management. Some of the core classes in this program include rooms division management, enhancing guest services, hospitality law, financial reporting, sales, marketing, human resources management, and strategic leadership. To gain a competitive advantage in a specialized area of hotel management, students can supplement their core courses with classes focused on casino operations, club management, and resort management.

Because hospitality management requires intense teamwork, our program focuses on group work, professionalism, and learning through experience. Classroom lectures are supplemented by field trips, guest speakers and industry certifications. All students will complete a 225 hour management practicum, where they will complete an internship in their area of interest.

Course credit or advanced placement options may exist for students coming from local high schools and vocational schools. Northampton also has agreements with several colleges and universities for students interested in transferring to a four-year school upon completion of the program. Program instructors and college advisors can help determine the education and career path that will lead students to a successful future.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes: Hotel Option

Graduates of the program will:

- Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
- Listen and effectively communicate in a positive, professional, and ethical manner with customers and colleagues of diverse backgrounds
- Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
- Read and accurately interpret standard indicators of the organization's financial health.
- Use appropriate technology for written communication, information gathering, and data analysis to facilitate smooth operation of a hospitality organization.
- Demonstrate leadership and supervisory skills, and an appreciation of diversity to support the organization and its goals.
- Use organization and flexibility, as a team, to complete tasks, make decisions, and problem solve in a timely manner.
- Utilize research and problem-solving techniques to employ "out of the box" critical thinking skills in a variety of hospitality situations.

Hotel/Restaurant Management: Restaurant Option,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
CULA 102	Food Safety and Sanitation	2
ENGL 101C	English I	3
FOOD 110	Food Preparation I	4
HOSP 101	Introduction to the Hospitality Industry	3
		15
	Second Semester	

ENGL 151C	English II	3
FOOD 123	Menu Planning and Food and Beverage Cost Control	3
FOOD 130	Convention Services & Catering Management	3
HOSP 111	Food and Beverage Management	3
HOSP 215	Hospitality Sales and Marketing	3
----------	General Education Elective (SIT or SSHB)	3
		18
	Third Semester	
ACCT 100 or	Accounting for Non-Accountants or	
ACCT 101	Financial Accounting I	3
HOSP 105	Enhancing Guest Service	3
HOSP 201	Strategic Leadership in Hospitality	3
HOSP 210	Human Resources Management for the Hospitality Industry	3
----------	Mathematics (QL) or Science (SCI) Elective	3
----------	Elective	3
		18
	Fourth Semester	
FOOD 250	Dining Room Operation	4
HOSP 212	Hospitality Financial Reporting	3
HOSP 221G	Hospitality Management Practicum	3
PSYC 103	Introduction to Psychology	3
----------	General Education Elective (AH)	3
		16
	Total Credits	**67**

- Completion of both ENGL101C and ENGL151C satisfy the computer literacy requirement.
- For the General Education Electives, students must select one course from the list of approved Arts & Humanities (AH) courses and one course from the lists of approved courses in Social Science: Societies and Institutions over Time (SIT); or Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).

Hotel/Restaurant Management: Hotel Option,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
HOSP 101	Introduction to the Hospitality Industry	3
HOSP 105	Enhancing Guest Service	3
----------	Mathematics (QL) or Science (SCI) Elective	3
		15
	Second Semester	
ENGL 151C	English II	3
HOSP 215	Hospitality Sales and Marketing	3
HOSP 111	Food and Beverage Management	3
HOTL 110	Hospitality Law	3
HOTL 207	Rooms Division Management	3
----------	General Education Elective (SIT or SSHB)	3
		18
	Third Semester	
ACCT 100 or	Accounting for Non-Accountants or	
ACCT 101	Financial Accounting I	3
HOSP 201	Strategic Leadership in Hospitality	3
HOSP 210	Human Resources Management for the Hospitality Industry	3
----------	Required Program Elective +	3/4
----------	General Education Elective (AH)	3

		15/16
	Fourth Semester	
HOSP 212	Hospitality Financial Reporting	3
HOSP 221G	Hospitality Management Practicum	3
PSYC 103	Introduction to Psychology	3
----------	Required Program Elective +	3/4
----------	Elective	3
		15/16
	Total Credits	**63/65**

+ Choose two courses (minimum of 6 credits) from the list of Program Electives: CASN 101, CISC101, FOOD 110, 130, 250, HOTL 140, or 150.

- Completion of both ENGL101C and ENGL151C satisfy the computer literacy requirement.
- For the General Education Electives, students must select one course from the list of approved Arts & Humanities (AH) courses and one course from the lists of approved courses in Social Science: Societies and Institutions over Time (SIT); or Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).

Career Potential: Hotel Operations Supervisor/ Manager, Guest Services Supervisor/Manager, Human Resources Entry-level Manager, Sales and Marketing Coordinator, Several Other Hotel Related Entry-level Positions

NCC students have transferred to: Pennsylvania State University, East Stroudsburg University, University of Delaware, University of Nevada, Las Vegas, Johnson and Wales University

Hotel/Restaurant Management - Casino Operations

Business & Technology

Specialized Diploma

Program Narrative

The Casino Operations Management diploma prepares you to efficiently and effectively deal with the guest services and managerial challenges faced in the casino industry. Graduates may be employed in positions with job titles such as slot floor supervisor, casino cage supervisor, casino revenue auditor, casino security/risk management supervisor, casino promotions representative or player development representative

Program Features

Courses in the Casino Operations Management Diploma program cover a broad spectrum of the gaming and casino industry. You will gain knowledge and experience that prepares you for a supervisory or management career path in many operational areas of the casino and gaming industry. We emphasize the basic tenants of guest service, leadership, communication, teamwork and problem solving. The program teaches students casino gaming operations, casino industry regulations, casino supervision and leadership, casino marketing, guest services, food and beverage management for the gaming industry, casino cage operations and casino revenue management. Our program and its content were developed with extensive input from the casino industry.

Program Outcomes

Graduates of the program will:

- Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
- Listen and effectively communicate in a positive, professional, and ethical manner with customers and colleagues of diverse backgrounds
- Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
- Read and accurately interpret standard indicators of the organization's financial health.
- Use appropriate technology for written communication, information gathering, and data analysis to facilitate smooth operation of a hospitality organization.
- Demonstrate leadership and supervisory skills, and an appreciation of diversity to support the organization and its goals.
- Use organization and flexibility, as a team, to complete tasks, make decisions, and problem solve in a timely manner.
- Utilize research and problem-solving techniques to employ "out of the box" critical thinking skills in a variety of hospitality situations.

Casino Operations,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
CASN 101	Introduction to the Gaming Industry	3
HOSP 101	Introduction to the Hospitality Industry	3
HOSP 105	Enhancing Guest Service	3
HOSP 201	Strategic Leadership in Hospitality	3

HOSP 210	Human Resources Management for the Hospitality Industry	3
		15
	Second Semester	
CASN 120	Casino Industry Regulations	3
CASN 130	Casino Gaming Operations I	3
HOSP 111	Food and Beverage Management	3
HOSP 212	Hospitality Financial Reporting	3
HOSP 215	Hospitality Sales and Marketing	3
		15
	Total Credits:	**30**

Career Potential: Slot Floor Supervisor, Casino Cage Supervisor, Casino Revenue Auditor, Player Development Representative Casino Security/Risk Management Supervisor, Casino Promotions Representative,

Hotel/Restaurant Management - Dining Room Operations

Business & Technology

Specialized Diploma

Program Narrative

Northampton's Dining Room Operations diploma prepares you to effectively address the guest services and supervisory challenges faced within the various segments of the food and beverage industry. Our graduates are employed in positions such as dining room supervisor, banquet manager, convention services coordinator, catering supervisor or food service manager.

Program Features

The Dining Room Operations diploma includes broad training in all aspects of restaurant management including front of the house business, supervisory duties and convention services/catering operations. Graduates will be prepared for entry-level management opportunities in fine dining, full service and quick casual restaurants, institutional food service, hotel food service outlets, country clubs, and a variety of other food service establishments.

The program emphasizes the basic tenants of guest service, leadership, communication, teamwork and problem solving. The program teaches students dining room operations, convention services and catering operations, food service safety and sanitation, hospitality management and marketing, guest services, and food and beverage management. We developed our program and its content with extensive input from the hospitality industry.

Program Outcomes

Graduates of the program will:

- Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
- Listen and effectively communicate in a positive, professional, and ethical manner with customers and colleagues of diverse backgrounds
- Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
- Read and accurately interpret standard indicators of the organization's financial health.
- Use appropriate technology for written communication, information gathering, and data analysis to facilitate smooth operation of a hospitality organization.
- Demonstrate leadership and supervisory skills, and an appreciation of diversity to support the organization and its goals.
- Use organization and flexibility, as a team, to complete tasks, make decisions, and problem solve in a timely manner.
- Utilize research and problem-solving techniques to employ "out of the box" critical thinking skills in a variety of hospitality situations.

Dining Room Operations,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
CULA 102	Food Safety and Sanitation	2
FOOD 110	Food Preparation I	4
FOOD 130	Convention Services and Catering	3
HOSP 101	Introduction to the Hospitality Industry	3
HOSP 105	Enhancing Guest Service	3
		15
	Second Semester	
FOOD 250	Dining Room Operations	4
HOSP 111	Food and Beverage Management	3
HOSP 201	Strategic Leadership in Hospitality	3

HOSP 215	Hospitality Sales and Marketing	3
		13
	Total Credits	**28**

Career Potential: Food Service Manager Dining Room Supervisor, Catering Supervisor, Convention Services Coordinator, Banquet Manager

Hotel/Restaurant Management - Resort Management

Business & Technology
Specialized Diploma

Program Narrative

Through our Resort Management diploma program, you'll be prepared to tackle any guest services and managerial challenges faced in the resort, club, food and beverage and hotel operations fields. Our graduates are employed in positions such as resort manager, club manager, membership manager, activities manager, recreation manager or lodging manager.

Program Features

The Resort Management diploma provides you with the managerial, technical, and operational expertise that is essential to pursuing a career in the resort or club segment of the hospitality industry. We emphasize the basic tenants of guest service, leadership, communication, teamwork and problem solving. The program teaches students basic resort, club and lodging operations, resort specialty subjects, hospitality management and marketing, guest services, food and beverage management. Also included in the training are hospitality accounting and finance competencies. Our program and its content were developed with extensive input from the hospitality industry.

Program Outcomes

Graduates of the program will:

- Acquire and correctly use general industry information, technical skills, and certifications for employment in the hospitality industry.
- Listen and effectively communicate in a positive, professional, and ethical manner with customers and colleagues of diverse backgrounds
- Display a professional image, positive attitude, strong work ethic, and recognize your role in the success of the organization where you are employed.
- Read and accurately interpret standard indicators of the organization's financial health.
- Use appropriate technology for written communication, information gathering, and data analysis to facilitate smooth operation of a hospitality organization.
- Demonstrate leadership and supervisory skills, and an appreciation of diversity to support the organization and its goals.
- Use organization and flexibility, as a team, to complete tasks, make decisions, and problem solve in a timely manner.
- Utilize research and problem-solving techniques to employ "out of the box" critical thinking skills in a variety of hospitality situations.

Resort Management,
Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
HOSP 101	Introduction to the Hospitality Industry	3
HOSP 105	Enhancing Guest Service	3
HOSP 201	Strategic Leadership in Hospitality	3
HOSP 210	Human Resources Management for the Hospitality Industry	3
HOTL 110	Hospitality Law	3
		15
	Second Semester	
HOSP 111	Food and Beverage Management	3
HOSP 212	Hospitality Financial Reporting	3
HOSP 215	Hospitality Sales and Marketing	3
HOTL 150	Resort Management	2
HOTL 207	Rooms Division Management	3
		14
	Total Credits	**29**

Career Potential: Lodging Manager Resort Manager, Recreation Manager, Activities Manager, Membership Manager

Individualized Transfer Studies

Humanities & Social Sciences
Degree awarded: Associate in Arts

Program Narrative

Even if Northampton's extensive selection of degree programs doesn't include your intended major, you can still

begin your studies here by creating an Individualized Transfer Studies program. By working with your advisor, you can carefully select courses at NCC that are required by the four-year institution to which you plan to transfer. Doing so will give you an affordable head start on your baccalaureate degree with an associate's degree from Northampton.

Please note that this option is intended only for students who have identified their baccalaureate college of choice, and their intended major, and are pre-planning a program of Northampton courses to fulfill the general distribution requirements and other courses that are transferable to the four-year institution.

Program Features

The Individualized Transfer Studies program consists of a three-part curriculum, including:

- The current Northampton general education core for associate in arts programs
- The addition of one Humanities and one Social Science course to the general education electives
- 30 credit hours aligned with the requirements of the degree program at your transfer institution

The College has negotiated opportunities for students to use the Individualized Transfer Studies program to transfer to several colleges/universities for specific programs:

- East Stroudsburg University
  - Health Service Administration, BS Degree
  - Health Education, Concentration in Community Health, BS Degree
- Kutztown University
  - Art Education, BS Degree

The colleges have worked out a course for course agreement so that students may start taking classes for their major while at Northampton, and seamlessly transfer to the schools listed above.

Program Requirements

Students will be eligible for this program by:

a. Pre-planning a 61-credit program with the assistance of the Director of Advising

b. Securing the signature of the transfer counselor and appropriate academic dean

c. Agreeing to work with an academic advisor each semester before registration

d. Securing all signatures for the pre-planned program before attempting the last 15 credits at Northampton

e. Agreeing to contact an advisor at the baccalaureate institution during the first semester of study

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- With the assistance of the Transfer Advisor, have planned and completed a 61-credit program tailored to their transfer institution.
- Have fulfilled all general education objectives at Northampton and maximized their transfer to a baccalaureate institution.

Individualized Transfer Studies,

Associate in Arts Degree

Course Code	Course Title	Credits
ENGL 101C	English I	3
ENGL 151C	English II	3
CMTH 102	Speech Communication	3
MATH___	Mathematics Elective (QL) +	3
----------	Laboratory Science Elective (SCI) +	4
----------	Social Science: Societies and Institutions over Time Elective (SIT)+	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)+	3
----------	Elective from ECON, GEOG, HIST, POLS, PSYC, or SOCA	3
----------	Arts & Humanities Elective (AH) +	3
----------	Elective from ARTA, CMTH, ENGL, MDLA, MUSC, or PHIL	3
----------	Pre-planned Electives (courses that satisfy the requirements of the baccalaureate institution)	30
	Total Credits	**61**

+ Must be selected from the list of approved courses in these categories

- Students must select two Writing Intensive (WI) courses.
- One course should be designated as Diversity (D).
- Taking both ENGL 101 and 151 in computer intensive sections automatically satisfies the computing requirement for this program, i.e. ENGL101C and ENGL151C.

- Electives should be chosen from the list of courses which are applicable to AA and AS degrees. The intention in the 30 elective credits is to align the NCC courses with the baccalaureate major toward which the student is working; any substitution must be discussed and approved by the student's academic advisor.
- A joint distance learning program leading to a Bachelor's degree in Accounting is available in conjunction with DeSales University. Students complete 20 designated courses at NCC which result in the award of the AA degree in Individualized Transfer Studies. These courses apply directly to the Bachelor's degree, which is awarded by DeSales University after the completion of 20 additional distance learning courses via DeSales. Students interested in this program should contact the Director of Advising & Transfer Services for details and the pre-approved course list.

Indoor Environmental Control

Business & Technology

Specialized Diploma conferred

Program Narrative

As a graduate of Northampton's Indoor Environmental Control program, you will have the qualifications needed to find good-paying employment in the HVAC/R field. Many of our graduates command above-average salaries as facilities maintenance technicians in commercial and industrial facilities and as service technicians in heating and air conditioning service organizations.

Our program was created in response to the needs of business and industry for short-term job training programs. Students gain in-depth understanding of cooling, heating, ventilation and refrigeration systems and maintenance practices at an accelerated pace.

Program Features

Our program offers the unique opportunity to learn the concepts and practices on components and equipment used in actual HVAC/R (heating, ventilating, air conditioning/ refrigeration) systems.

The program's curriculum includes electrical theory, heating and cooling concepts, refrigeration cycle theory, equipment operation, component specification, whole system operation, system calculations, and diagnostic approaches. Depending on your choice of electives, you can gain many additional skills related to oil and gas-fired and electric heating systems, heat pumps, air conditioning, ventilation systems and unitary refrigeration systems such as icemakers and coolers. You can also learn the proper EPA-approved method of recovery and handling of refrigerants. Our technical electives allow the student to specialize in certain areas of HVAC/R to meet the needs of a variety of employers.

If you decide to advance your education further, all of the course work in this specialized diploma program can be applied toward Northampton's associate's degree in Electromechanical Technology. Courses are conveniently offered during the evening in the fall and spring semesters.

Program Outcomes

Graduates of the program will:

- Demonstrate an ability to work independently and collaboratively.
- Demonstrate an ability to operate refrigeration, heating, and air conditioning systems.
- • Demonstrate proficient use of hand tools, equipment, and gauges commonly used in the repair and troubleshooting of commercial HVAC/R (heating, ventilating, air conditioning, and refrigeration) systems.
- Describe the principles of operation of basic components and systems used in meeting specific needs in conditioning air, heating air, providing ventilating, and refrigerating objects.
- Analyze and present data in acceptable and standardized manner.
- Solve basic technical problems encountered in commercial refrigeration, cooling, and heating equipment.
- Interpret and apply the EPA regulatory laws in properly handling refrigerants and other environmentally hazardous materials used with HVAC/R systems.
- Demonstrate competent verbal communication skills when working with professional service technicians.
- Demonstrate a basic framework of technical vocabulary applicable to the HVAC/R maintenance field.
- Demonstrate observational, integrative, and synthetic skills.
- Demonstrate the proper selection and application of HVAC/R components in maintenance of a commercial system.

Indoor Environmental Control,

Specialized Diploma

Course Code	Course Title	Credits
ELTC 107	Electrical Wiring I	2
EMEC 101	Electrical Fundamentals	3
EMEC 135	Electrical Motors and Controls	4
HVAC 101	Fundamentals of HVAC/R I	3
HVAC 102	Fundamentals of HVAC/R II	3
HVAC ___	Technical Electives +	9
	Total Credits	**24**

+ Technical Elective options: HVAC 104, 110, 120, 121, 140, 150

Career Potential: Facilities Maintenance Mechanic, HVAC Service Technician, Refrigeration Technician

Interior Design

Business & Technology
Degree awarded: Associate in Applied Science
Specialized diploma conferred

Program Narrative

Do you think in color and pattern? Are you sensitive to how people's surroundings can affect their mood, productivity, even their likelihood to make purchases in stores? Interior Design might be for you. Interior Design is the application of the visual principles of color, form, and space to the planning of interior environments. It is the exacting science and vibrant art that creates the places in which we all live and work. It is also a highly skilled profession that challenges you to take into account the structure and utilities of a building, client needs, and budgetary considerations in addition to aesthetics.

Our Interior Design program has been carefully organized to meet the demand for professionally trained interior designers in both residential and contract design. With our associate's degree, you may gain employment upon graduation or consider pursuing a four-year degree.

Please keep in mind that no special system of accreditation exists for pre-professional interior design programs. Senior schools consider applicants from Northampton on an individual basis and may grant full or partial credit depending on the ability of the student and his or her own transfer requirements. You will want to meet frequently with your faculty advisor in order to structure your course options effectively.

Courses are available for students who want to attend full-time, part-time, during the day or in the evening.

Program Features

First semester courses provide foundational skills and knowledge in drafting, architecture history and interior and architectural design. Second semester courses build upon these foundational skills with the addition of a digital design studio and History II.

The second year major courses all have some prerequisites from the first year and this allows students to extend their learning into more advanced skill areas. You'll also learn more about building technology in the interior structures and materials course.

Computer technology is woven thru the curriculum utilizing ArchiCAD software as a design tool in the studios and AutoCAD in our digital production drawing course. The program includes a four-course design studio sequence where each semester you will develop and execute your own design projects, working in professional design stations. You will use computers equipped with state of the art design and production software.

We also encourage you to get involved with the faculty-advised student chapter of the American Institute of Architects which provides opportunities to enrich your education with a wide field studies and related extracurricular activities, including annual trips to major cities.

Our full-time and part-time faculty brings current knowledge into your classroom direct from the professional world where they are actively pursuing their own careers in interior design, architecture, product design, and related fields. Our faculty and advisory committee are members of the American Institute of Architects and American Society of Interior Designers. Because they regularly meet to review current developments in interior design, our program is always relevant. Committee members as well as other professionals also give presentations and participate as jurors in student project reviews and critiques.

Contact the Admissions Office at 610-861-5500 for further information.

Interior Design Program

Program Narrative

This program is designed for both full-time and part-time students. We've designed this program for those who already have a college degree or need an accelerated alternative career path in the Interior Design profession. Returning students with previously earned bachelor's degrees find this program especially appealing. By adding your general education credits previously earned to the 24 credit diploma, you're only a few part-time semesters to an AAS degree.

Along with a broad introduction to the field of Interior Design, you will learn the fundamental principles of design and gain both hand and computer graphic skills in our design studio and graphics courses. The program also offers a focus on the popular specialty area of kitchen and bath design. Your learning experience is capped with an upper level interior design studio where you will complete projects under the guidance of professional architects and designers.

Program Features

Full-time students can complete the program in two twelve-credit semesters offered during the day and in the evening. Part-time students can complete the program in four six-credit semesters all offered at night. It is important for students to become familiar with which courses are Fall offerings and which are Spring offerings so they may complete the program as scheduled.

You can apply all of your specialized diploma courses toward Northampton's AAS in Interior Design. An attractive option many students choose is to complete the Interior Design diploma either full-time or part-time while employed and then enter the associate's degree program during the evening on a part-time basis.

Kitchen and Bath Design Program
Specialized Diploma

Specialized diploma conferred

Program Narrative

This program offers students a focused learning experience in the design of kitchens and bathrooms. The program is shorter than the broader Interior Design specialized diploma. It provides an excellent opportunity for the part-time student who wishes to advance quickly in an exciting area of the field. If you decide to continue your education after earning the diploma, you can apply all of your courses toward the longer specialized diploma or to our AAS degree in Interior Design.

Program Features

At the introduction to the program, students will gain a broad knowledge of the field of interior design, followed by individual courses focused on kitchen and bathroom design, including lighting design as it relates to the kitchen and bath environment. Capping the program, students will learn how to produce a set of production drawings. You'll use our state of the art professional studio equipped with the most up-to-date computer design software.

Program Outcomes

Graduates of the program will:

- Be prepared to assist an architect or interior designer in space planning, for both residential and contract design.
- Learn to produce construction documents and presentation drawings through traditional and computer graphics (AutoCAD)(ArchiCAD).
- Develop an understanding of accessibility, safety, lighting, building systems, acoustic control and their relationship to construction and the human being.
- Develop an understanding of how our physical (built) environment is influenced by social, cultural, historical and philosophical determinants.
- Be prepared for entry into related areas of the design industry, such as industrial design, display design, furniture design, product design and product sales.
- Be prepared for transfer into a four or five-year accredited professional interior design program leading to internship and NCIDQ examination.

Interior Design,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ARCH 100	Architectural History I - Antiquity to 1870	3
ARCH 101	Architectural Graphics I	3
ARCH 110	Architectural Design Studio I	3
ENGL 101C	English I	3
INDS 105	Introduction to Interior Design	3
		15
	Second Semester	
ARCH 150	Architecture Design Studio II (Digital)	3
ARCH 155	Architectural History II - 1870 to Present	3
ENGL 151C	English II	3
INDS 121	Graphics and Presentation Techniques for Interior Designers	
INDS 130	Interior Materials & Structure	3
		15
	Third Semester	
CMTH 102	Speech Communication	3
INDS 100	History of Interior Design & Furniture	3
INDS 165	Kitchen and Lighting Design	3
INDS 225	Residential Interior Design Studio	3
----------	Elective	3
		15
	Fourth Semester	
ARCH 265	Digital Production Drawing	3
INDS 160	Bath and Lighting Design	3
INDS 255	Commercial Interior Design Studio	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
----------	Mathematics (QL) or Science (SCI) Elective	3
		15
	Total Credits	**60**

NOTE: INDS200 Interior Design Professional Internship (3 cr. optional elective) offered Fall, Spring, Summer 1 and Summer 2 semesters. Please see advisor.

- The Diversity (D) requirement is satisfied by the completion of ENGL 151C.
- The program-related writing intensive competency is satisfied by a combination of INDS 225 and INDS 255.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirements for this program.

Interior Design,
Specialized Diploma

1-YEAR SEQUENCE

Course Code	Course Title	Credits
ARCH 101	Architectural Graphics I	3
ARCH 110	Architectural Design Studio I	3
INDS 105	Introduction to Interior Design	3
INDS 165	Kitchen and Lighting Design	3
ARCH 265	Digital Production Drawing	3
INDS 121	Graphics & Presentation Techniques	
INDS 130	Interior Materials & Structure	3
INDS 255	Commercial Interior Design Studio	3
	Total Credits	**24**

Note: Students can complete the program on a Full-time or Part-time basis.

2-YEAR SEQUENCE

Course Code	Course Title	Credits
	Fall Semester	
ARCH 101	Architectural Graphics I	3
ARCH 110	Architectural Design Studio I	3
		6
	Spring Semester	
INDS 130	Interior Materials & Structure	3
INDS 121	Graphics & Presentation Techniques	3
		6
	Fall Semester	
INDS 105	Introduction to Interior Design	3
INDS 165	Kitchen and Lighting Design	3
		6
	Spring Semester	
ARCH 265	Digital Production Drawing	3
INDS 255	Commercial Interior Design Studio	3
		6
	Total Credits	**24**

Interior Design: Kitchen & Bath Design,
Specialized Diploma

Course Code	Course Title	Credits
	Fall Semester	
ARCH 101	Architectural Graphics I	3
INDS 105	Introduction to Interior Design	3
		6
	Spring Semester	
ARCH 265	Digital Production Drawing	3
INDS 121	Graphics and Presentation Graphics for Interior Designers	3
		6
	Fall Semester	
INDS 160	Bath and Lighting Design	3
INDS 165	Kitchen and Lighting Design	3
		6
	Total Credits	**18**

Career Potential: Interior Designer, Furniture Representative, Furniture Sales, Fabric Design

NCC students have transferred to: Arcadia University, Moore School of Art, New York School of Interior Design

Journalism

Humanities & Social Sciences

Degree awarded: Associate in Arts

Program Narrative

If your career goal is to become a working journalist, you will need to pursue a bachelor's degree, but starting with an associate's degree program can be both cost-effective and convenient. With supportive academic advisors who will help you plan a transfer to a four-year institution, Northampton is the smart place to begin your studies.

Northampton's Journalism program emphasizes practical skills in written journalism (print and online) for students with limited or no experience. For students with some experience, our program offers an opportunity to enhance their skills and advance professionally.

Graduates with reporting skills and a baccalaureate degree typically begin their careers at local newspapers, radio or TV stations, and online publications, or in public relations and corporate communications offices. The journalism program at Northampton provides the skills and experience editors and businesses want for the 21st century.

Program Features

Our journalism students are expected to participate in the college newspaper, *The Commuter*. Students at NCC focus on the community, both the College community and the surrounding area. We encourage our students to report on local issues that affect the College and its students. Students work in the field covering events at the school and in the cities. This practical hands-on approach gives students exposure to situations similar to those that professional journalists encounter every day.

Electives offer students the chance to begin specializing in one aspect of journalism prior to transferring to a four-year institution. Students can focus on radio and television production, photography, multimedia production and more.

Courses in this program are offered primarily during the day.

Contact the Admissions Office at 610-861-5500 for more information.

Program Outcomes

Graduates of the program will:

- Be critically aware of the roles and ethical responsibilities of journalists in a multicultural society.
- Know the laws applying to journalists and how to apply them in real situations.
- Be critically aware of the diverse functions of the media (entertainment, informational, propagandist, ideological) and how they affect society and culture.
- Be able to critically evaluate print media, including their own work and the work of others.
- Demonstrate the ability to quickly edit copy for appropriate, correct English and Associated Press (AP) style.
- Be able to write interesting headlines and captions fitting an article or picture.
- Be able to design a basic newspaper layout for print and explain and defend their selection of news items and the social, economic, and cultural factors that may influence the agenda.
- Be skilled in the basic operation of desktop publishing tools.
- Be able to combine research and firsthand accounts into an informative news and feature story.
- Understand how to find, source, research, and cover news and feature stories.
- Be able to use a journalistic style to plan and produce copy for a public relations campaign.
- Understand the basics of publishing to the Internet.
- Be able to identify and use various narrative techniques in news and feature stories.

Journalism,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
ARTA 171	Desktop Publishing	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
JOUR 101	Journalism and Society	3
JOUR 102	Copyediting	3
		16
	Second Semester	
CMTH 103	Mass Communications	3
ENGL 151C	English II	3
JOUR 103	Newswriting	3
POLS 251	State and Local Government	3
----------	Elective	3
		15
	Third Semester	
JOUR 201	Feature Writing	3
SOCA 103	Principles of Sociology	3

----------	Arts and Humanities Elective (AH)	3
----------	Mathematics Elective (QL)	3
----------	Elective	3
		15
	Fourth Semester	
JOUR 202G	Reporting in the Information Age	3
JOUR 203G	Writing for Public Relations	3
----------	Science Elective (SCI)	4
----------	Electives	6
		16
	Total Credits	**62**

Elective credits may be selected from the following groups or any AA/AS applicable elective or an AAS applicable elective upon the approval of the Journalism department.

Media

- CMTH 120 Radio Production
- CMTH170 TV Production
- CMTH180 Multimedia Production
- CMTH182 Advanced Multimedia Production

Design

- ARTA 151 Black and White Photography

Writing

- ENGL 253 Creative Writing

Communications

- CMTH 105 Public Speaking
- CMTH 126 Communication Arts
- CMTH 110 Introduction to the Theatre
- CMTH 220 Introduction to Film
- MDLA___ Modern Languages

- Computer requirements are satisfied by the completion of both ENGL 101C and ENGL 151C.
- Writing Intensive (WI) requirements are satisfied through JOUR courses.
- Students are expected to participate on *The Commuter* every semester.

Career Potential: Transfer program, leading to: Newspaper reporter, Radio reporter, On-line journalist, Media relations

NCC students have transferred to: Lehigh University, Temple University, East Stroudsburg University, University of Pittsburgh

Legal Administrative Assistant

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Northampton's Office Administration degree programs are designed to prepare you for a wide variety of opportunities in a modern office setting. The three degrees offered by the Office Administration department are: Office Administrative Assistant, Medical Administrative Assistant, and Legal Administrative Assistant. Each program provides course offerings and experiences to prepare the graduate to work as a team player in a specialized office environment.

Your studies will include state-of-the-art office equipment and software. You will learn the marketable skills required to work well with other people in an office environment, and these skills will be applied through a valuable internship experience related to your field of study. We emphasize development of professional attitudes, values, and ethics. As you grow through the program, you will gain critical thinking, priority setting, and decision-making skills needed in today's business environment.

Program Features

This program prepares you to accept the responsibilities and challenges expected of a skilled administrative assistant in the legal work environment. You'll gain proficiency in technology, office communication, human relations, time management, organization, decision-making, and creative thinking. You'll gain knowledge in legal areas including wills and probate, real estate, and legal office procedures.

The program's technology courses emphasize specialized software that is used daily by legal administrative assistants as well as standard word processing, spreadsheet, database, graphics, and communications programs. You will become an accurate, resourceful, and productive professional who can comfortably communicate with legal professionals and other administrative assistants in the legal environment.

Northampton graduates have an excellent employment placement record with area law firms, insurance companies, title companies, large corporations, and government agencies. Employer surveys indicate a very high degree of satisfaction with our graduates.

This program can be completed in the day or evening, on a full- or part-time basis.

Program Outcomes

Graduates of the program will:

- Master operation of state-of-the-art industry equipment and software and appropriately utilize these to accomplish work-related tasks accurately and productively in an office environment.

- Utilize and apply specific field-related knowledge, skills, and experiences to function effectively as a team member in today's challenging work environment.
- Exhibit oral, written, and interpersonal communication skills and poise necessary to work effectively with people in business.
- Utilize analytical skills and administrative techniques necessary to organize, prioritize, and manage the information flow in an office setting.
- Exemplify professionally acceptable attitudes, values, and ethics needed in business.
- Procure an appropriate position in business with a commitment to life long learning to achieve professional growth.

Legal Administrative Assistant,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH102	Speech Communication	3
ENGL 101C	English I	3
OFAD 101 or	Keyboarding I on Microcomputers or	3
OFAD 100+146	Electronic Keyboarding + Formatting with Word	
OFAD 111 or	Trends in Office Automation or	3
OFAD 147+148+149	Introduction to Windows + Learning the Internet + PowerPoint	
OFAD 153	Real Estate Law	3
		15
	Second Semester	
ENGL 151	English II	3
OFAD 121	Keyboarding II on Microcomputers	3
OFAD 125	Word Processing Applications	3
OFAD 131	Machine Transcription	3
OFAD/BUSA___	OFAD or BUSA elective	3
----------	General Education Elective	3
		18
	Third Semester	
BUSA 152	Business Law I	3
BUSA/OFAD 221G	Business Communications	3
OFAD 201	Advanced Document Production	3
OFAD 205	Microsoft Office Software Applications	3
----------	General Education Elective	3
----------	General Education Elective	3
		18
	Fourth Semester	
OFAD 163	Legal Office Procedures	3
OFAD 230	Modern Office Procedures	3
OFAD 250	Internship	3
----------	General Education Elective	3
----------	Elective	3
		15
	Total Credits	**66**

- For the General Education Electives, students must select one course from the list of approved courses in Mathematics (QL) or Science (SCI). In addition, students must select three courses from at least two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of BUSA/OFAD 221G satisfies the Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirement for the program.

Career Potential: Legal Office Manager, Administrative Assistant, Legal Administrative Assistant, Legal Secretary

Legal Office Specialist

Business & Technology

Specialized Diploma conferred

Program Narrative

Your education could give you a competitive edge when pursuing employment in an office setting. Northampton's Office Administration diploma programs are designed to prepare you to enter a modern office setting in a short time frame. The programs offer career-specific course work for

the student wishing to complete their studies within two semesters. Each program provides course offerings that prepare you to work as a team player in a specialized office environment.

Your studies will state-of-the-art office equipment and computer software. You will learn the marketable skills required to work effectively with other people in an office environment. We emphasize development of professional attitudes, values, and ethics. As you progress through the program, you'll gain critical thinking, priority setting, and decision-making skills needed in today's quality-oriented business environment.

Graduates of this diploma program often go on to gain employment and then pursue NCC's Legal Administrative Assistant associate's degree.

Program Features

This program prepares you for the responsibilities and challenges expected of a skilled administrative assistant in a legal work environment. Students gain proficiency in technology, human relations, time management and organizational skills. You'll also hone your decision making, and creative thinking.

Our technology training emphasizes legal, word processing, spreadsheet, database, graphics, and communications software applications. You will become an accurate, resourceful, and productive professional, comfortable communicating with other professionals in a legal environment.

The training includes development of the special administrative skills needed to work accurately and effectively in the most demanding legal setting, and prepares the student with knowledge in legal areas including wills and probate, real estate, and legal office procedures. Employment opportunities could include law firms, insurance companies, title companies, large corporations, and government agencies.

Northampton graduates have an excellent employment placement record with area law firms, insurance companies, title companies, large corporations, and government agencies. Employer surveys indicate a very high degree of satisfaction with our graduates.

This program can be completed in the day or evening, on a full- or part-time basis.

Program Outcomes

Graduates of the program will:

- Demonstrate an ability to work independently and collaboratively in a legal setting.
- Possess the necessary technical skills operating state-of-the-art equipment and job-specific knowledge related to working in a legal office environment.
- Exemplify professionally acceptable attitudes, values, and ethics needed in the legal profession.
- Procure an appropriate position in a legal setting with a commitment to lifelong learning to achieve professional growth.

Legal Office Specialist,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
OFAD111 or	Trends in Office Automation or	3
OFAD 147+148+149	Introduction to Windows + Learning the Internet + PowerPoint	
OFAD 121	Keyboarding II on Microcomputers	3
OFAD 125	Word Processing Applications	3
OFAD 153	Real Estate Law	3
		12
	Second Semester	
OFAD 131	Machine Transcription	3
OFAD 163	Legal Office Procedures	3
OFAD 201	Advanced Document Production	3
OFAD 205	Microsoft Office Software Applications	3
OFAD 230	Modern Office Procedures	3
		15
	Total Credits	**27**

Career Potential: Legal Secretary

Liberal Arts

Humanities & Social Sciences

Degree awarded: Associate in Arts

Program Narrative

The Liberal Arts program offers students planning to complete a bachelor's degree a strong foundation in both general education and a selected field of concentration. The curriculum has been designed to meet the requirements for the first two years of BA programs at many of the schools to which Northampton students commonly transfer. Northampton has also negotiated a number of Liberal Arts transfer agreements, including dual admissions agreements, with many regional colleges and universities.

Liberal Arts majors often go on to careers in communications, management, public relations, marketing, and the arts. Their generalist background makes them readily employable at many levels in a wide range of career choices.

Program Features

The program is both solid and flexible and provides you with an excellent, tailored preparation for transfer. If you are undecided about your future major, you can explore your options by taking elective courses in various departments. If you're more certain, you may use your electives to concentrate your studies in English, History, Philosophy, Political Science, Psychology, Sociology, or Women's and Gender Studies, in order to prepare to major in these disciplines at a transfer institution. We encourage you to start taking classes in your concentration in your first semester in order to ensure that you complete it.

Freedom of choice in this major extends to scheduling as well: courses are available both day and evening, on campus or online.

Concentrations

English Concentration

Students may begin their path to a BA in English or a related field by using the elective credits in the Liberal Arts program toward a concentration in English. To complete the concentration students may select four courses from any of the 200 level English courses.

In English courses students learn how to read and analyze pieces of writing and to respond critically in their own words. A major in English is widely applicable to future careers in journalism, publishing, teaching, business and government.

History Concentration

Students may begin their path to a BA in History by using the elective credits in the Liberal Arts program toward a concentration in History. Students may select 12 credits from any of the history courses.

History is a way of studying the past in order to understand the present. It focuses on how societies, cultures, institutions, and even ideas change over time. The richness of a concentration in this field might include learning Ancient, Modern, European, Eastern, and various aspects of American history. Intellectually, historians subject evidence, such as documents and secondary sources, to critical analysis. The reading, thinking, and writing required in the history concentration provide an excellent foundation to a wide range of majors and occupations that value these skills.

Philosophy Concentration

Students may prepare for a BA in Philosophy, or begin a pathway to a variety of degrees and careers including law, teaching, and public service, by using the elective credits in the Liberal Arts program toward a concentration in Philosophy. Students need to complete Introduction to Philosophy, and select three additional courses from the following: On Death and Dying, World Religions, Ethics and Moral Problems, or Asian Philosophies.

Philosophy can make one's life more intellectually interesting, deeply meaningful, and ultimately rewarding. Training includes analysis, argument, interpretation, judgment, creative and critical thinking. Students learn reading, reasoning, speaking, and writing at advanced levels - all transferable skills, for further academics and employment.

Political Science Concentration

Students may begin their path to a BA in Political Science by using the elective credits in the Liberal Arts program toward a concentration in Political Science. Students must take Introduction to Political Science, and may select the remaining three courses from any of the political science courses.

The study of political science provides a way of understanding political processes, governmental systems, and political behavior of individuals or groups in settings ranging from the global to the local. Students learn to analyze political events both in the US and in countries and regions around the world using the key skills of observation, critical thinking, and writing.

Psychology Concentration

Students may begin their path to a BA or BS in Psychology by using the elective credits in the Liberal Arts program toward a concentration in Psychology. Students must take Introduction to Psychology, and may select the remaining three courses from Adolescent Psychology, Abnormal Psychology, Psychology of Sex and Gender, and either Developmental Psychology or Child Psychology (both may not be used for credit).

The study of psychology provides a solid understanding of human behavior and development, critical for careers in education, psychology, and therapy in a variety of settings. Students learn and apply critical thinking skills and the scientific method in order to better understand the human individual.

Sociology Concentration

Students may begin their path to a BA in Sociology or a related field by using the elective credits in the Liberal Arts program toward a concentration in Sociology. Students must take Cultural Anthropology and Principles of Sociology, and may select the remaining two courses from American Ethnicity, Sociology of Families, Deviance, Sociology of Gender, and Social Problems.

Sociology allows students to study the society they live in by examining various groups within societies, cultural traditions, and social problems. Students learn the skills of observation, critical thinking, and writing.

Women's and Gender Studies Concentration

Students may begin their interdisciplinary work in Women's and Gender Studies by applying the elective credits in the Liberal Arts program toward this concentration. To complete the concentration, students may take any four of the following: 20th Century Literature by Women, Psychology of Sex and Gender, Sociology of Gender, Women and Power, and Women and Politics.

Courses in Women's and Gender Studies allow students to understand and develop an awareness of the impact of gender on the human condition as reflected in the sciences and arts as well as in day-to-day life. Students will be able to communicate and use critical thinking skills in evaluating

gender theory as they apply it to disciplines including psychology, sociology, literature, political science and others. Given that gender is a universal human condition, a concentration in Women's and Gender Studies is appropriate for students on virtually any educational path, but is especially valuable for those interested in pursuing a career in the social sciences.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- understand the historical and cultural contexts of contemporary civilization.
- aluate and discuss diverse points of view.
- communicate ideas effectively.
- speak and understand a modern language other than English.
- retrieve, evaluate, and apply information from a range of sources.
- Develop strategies for solving both abstract and practical problems.

Liberal Arts,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
ENGL 101C	English I	3
CMTH 102	Speech Communication	3
PHIL 201	Introduction to Philosophy	3
HIST _____	History Elective ++	3
----------	Concentration Elective* or Elective ++	3
		15
	Second Semester	
ENGL 151C	English II	3
PSYC 103	Introduction to Psychology	3
MATH ___	Mathematics Elective (QL) ++	3
SOCA 103 or	Principles of Sociology or	
SOCA 102	Cultural Anthropology	3
----------	Concentration Elective* or Elective ++	3
		15
	Third Semester	
CMTH 110 or	Introduction to Theatre or	
MUSC 101 or	Introduction to Music or	
ARTA 101 or	Art History Survey or	
DANC 101	Dance History	3
ENGL___	Literature Elective ++	3
MDLA___	Modern Language +	3
----------	Science Elective (SCI) ++	3/4
----------	Concentration Elective* or Elective ++	3
		15/16
	Fourth Semester	
MDLA ___	Modern Language +	3
POLS ___	Political Science Elective ++	3
----------	Mathematics (QL) or Science (SCI) Elective ++	3/4
----------	Concentration Elective* or Electives ++	6
		15/16
	Total Credits	**60/62**

*** For a Concentration Elective in:**

English - Literature Elective and 3 other courses from ENGL2__.

History - History Elective and 3 other courses from HIST ___.

Philosophy - Introduction to Philosophy and 3 courses from the following: On Death and Dying, World Religions, Ethics and Moral Problems or Asian Philosophies.

Political Science - Introduction to Political Science, Women and Politics and 2 other POLS___ classes.

Psychology - Introduction to Psychology, and may select 3 courses from Abnormal Psychology, Adolescent Psychology, Psychology of Sex and Gender, and either Child or Developmental Psychology.

Sociology - Intro to Sociology, Cultural Anthropology, and 2 courses from the following: American Ethnicity, Sociology of Families, Deviance, Sociology of Gender and Social Problems.

Women's and Gender Studies - any 4 courses in the following: 20th Century Literature by Women, Women and Power, Women and Politics, Psychology of Sex and Gender, Sociology of Gender and/or Special Studies in various disciplines.

- For the Electives, students must select one course from the list of approved courses in the category of Social Science: Societies and Institutions over Time (SIT).
- The Mathematics (QL) and Science (SCI) electives must be selected from the list of approved general education courses in each of those categories.
- One course should be designated as Diversity (D).
- One General Education course must be taken in a Writing Intensive (WI) section. In addition, students must select a second Writing Intensive course.
- Taking both ENGL 101 and 151 in computer intensive sections automatically satisfies the computing requirement for this program, i.e. ENGL101C and ENGL 151C.

+ Six credits of the same modern language are required for graduation.

++ Electives for Liberal Arts:

- Biological Science: any BIOS except not both 105 and 107
- Chemistry: any CHEM except 011, 121, 135
- Communications: all CMTH except 180, 182, 240, 252
- Computer Information Science: CISC 101, 106, 115
- Economics: only ECON 201
- English: only ENGL 201, 203, 205, 250, 251, 253, 255, 256, 257, 260, 264, 265

  (ENGL 211, 253 and 267 are not applicable literature electives, but may be used as other electives.)
- Geography: any GEOG
- Geology: only GEOL 201
- History: any HIST
- Humanities: any HUMA
- Journalism: JOUR 101, 103, 201
- Mathematics: any MATH except 020, 022, 024, 026, 028, 041, 103, 110, 118, 119
- Modern Languages: any MDLA
- Music: any MUSC
- Philosophy: any PHIL
- Physical Education: any PHED to a maximum of 2 credits
- Physics: any PHYS except 215, 225
- Political Science: any POLS
- Psychology: any PSYC
- Sociology/Anthropology: any SOCA

NOTE: Regarding majors in liberal arts - A student following one of the concentrations in liberal arts listed above or a student planning to major in another field will find it necessary to begin taking courses in that major field early in the program during the first year, and move the free elective to the second year.

Transfer to majors in: English History, Philosophy, Political Science, Psychology, Sociology

NCC students have transferred to: East Stroudsburg University, Kutztown University, West Chester University, Moravian College, DeSales University, Albright College, Cedar Crest College, Penn State, Temple University

Library Technical Assistant

Humanities & Social Sciences

Specialized Diploma conferred

Program Narrative

Today's libraries aren't simply repositories of books and journals. They are technologically-advanced media centers, managing large amounts of information in digital, print and multimedia formats. Library patrons need help navigating this new world, and libraries need trained staff who are able to organize diverse forms of information. The Library Technical Assistant program at Northampton prepares you to enter the workforce as a paraprofessional capable of working in a variety of libraries and information centers.

Northampton's convenient online program focuses particularly on information resources, services for children, and management of small public libraries. Courses address technical skills in such vital areas as acquisitions, electronic formats and cataloging of all types of materials.

Program Features

Members of Northampton Community College's admissions staff can assist you in planning your program of study. Although this program is offered only online, you will be required to visit libraries to investigate print resources and explore types of library services, in addition to reading assigned textbooks and performing online research.

The specialized diploma is a 15-credit program, although courses also can be taken on an as-needed basis to improve skills in specific areas. The specialized diploma is also a good way to start your library science education if you are interested in pursuing a degree.

Professionals in Northampton's Career Services and counseling offices, as well as instructors within the program, can help you meet your employment and career goals.

Program Outcomes

Graduates of the program will:

- Identify the multiple functions of libraries and library services.
- Summarize the role and history of libraries.
- Use critical thinking skills to explore library services, resources, and the planning process.
- Develop assessment skills for identifying, acquiring and organizing resource materials.
- Identify and use key research tools to locate relevant information.
- Evaluate information resources in both paper and electronic formats.

- Recognize the significant literature and trends in children's literature.
- Use knowledge of current challenges facing libraries to deal effectively with issues such as censorship, funding, service limitations, and technology.
- Develop skills in areas such as budget preparation, personnel, and plant management to effectively manage a small library.
- Assess and manage technology as it pertains to libraries and library services.

Library Technical Assistant,

Specialized Diploma: This diploma is offered via the College Online Learning program.

Course Code	Course Title	Credits
LIBT 101	Introduction to Library Service	3
LIBT ___	LIBT Elective Courses*	12
	Total Credits	**15**
*LIBT Elective Course Options:		
LIBT 115	Reference Resources and Services	3
LIBT 203	Technical Services	3
LIBT 207	Library Management	3
LIBT 209	Computers in Libraries	3
LIBT 253	Literature for Children & Young Adults	3

Students must take LIBT 101 Introduction to Library Service; it is strongly urged that they begin the program with this course. To receive the Specialized Diploma, student can select four out of the five elective courses to complete the 15 credit program.

Career Potential: Library Technical Assistant

Marketing

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Do you enjoy being part of a team that plans and executes promotions and special events? Perhaps you find yourself fascinated with advertising, or you want to work with the media. Marketing is a creative field that includes numerous career paths. From retail to sports to non-profit institutions, marketing is an essential tool, and marketing professionals find their work exciting and rewarding.

The Marketing program at Northampton focuses on the practical applications of both business and consumer marketing. This program emphasizes employment, specifically in a marketing or marketing-related position, upon graduation, rather than transfer to a four-year college. The program is designed to provide students with the marketing skills needed to enter into the fields of marketing, advertising, public relations, sales, retail management, media planning, customer service or e-marketing upon graduation.

Program Features

The Marketing A.A.S. Program includes a strong educational core that emphasizing marketing theory and application of marketing knowledge. Students develop necessary skills required to enhance creativity, critical thinking, problem solving, global perspectives and communication.

Students participate in a Marketing Simulation course with a focus on designing and presenting a marketing plan for an existing business. Students work in groups to conduct a market analysis related to a specific company, develop a media schedule and advertising campaign, and present the plan to company executives. In addition, students gain valuable experience working with a team on real-world projects.

Professionals in Northampton's Career Services Office, as well as instructors within the program, are available to assist students in finding employment in the field.

Program Requirements

The Business Marketing Program contains provisions for a free elective of three credits in addition to the General Education electives. This program can be completed in the day or evening, on a full-time or part-time basis.

Program Outcomes

Graduates of the program will:

- Demonstrate an understanding of general business principles in accounting/finance, management and marketing.
- Apply technological and design skills related to business and marketing promotion.
- Possess strong presentation and communication skills pertinent to business and life.
- Gain an understanding of business ethics and their application in business.
- Work effectively in both individual and team environments.
- Design a cohesive marketing strategy, effectively combining the marketing mix elements of product, price, promotion and place (distribution).

Marketing,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	

BUSA 131	Principles of Marketing	3
CISC 101	Introduction to Computers	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
MATH____	Mathematics Elective (QL)+	3
		15
	Second Semester	
ACCT 101	Financial Accounting I	3
ARTA 170	Computer Graphics	4
BUSA 205	Management Fundamentals	3
ENGL 151C	English II (D)	3
----------	General Education Elective	3
		16
	Third Semester	
ACCT 155	Accounting for Managers	3
ARTA 130	Introduction to Web Site Design	3
BUSA 221G	Business Communications	3
BUSA 235	Principles of Advertising/Public Relations	3
ECON 201	Macroeconomics	3
		15
	Fourth Semester	
BUSA 152	Business Law I	3
BUSA 137	Principles of Selling	3
BUSA 270	Marketing Simulation	3
----------	General Education Elective	3
----------	Elective	3
		15
	Total Credits	**61**

+ Mathematics Elective options: MATH 140, 150, 160, 165, 175, 176, 180, 181

- For General Education Electives, students must take two courses from at least two of the following areas: Arts & Humanities (AH), Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB). Note: ECON 201 is required, so only one additional SSHB may be used as a General Education Elective.
- ENGL151C is designated as the Diversity (D) requirement.

Career Potential:

Sales Representative, Advertising/Promotions Specialist, Retail Manager, Marketing Coordinator/Assistant

Math/Physics

Business & Technology

Degree awarded: Associate in Science

Options: Math and Physics

Program Narrative

Northampton's Math/Physics program prepares you for transfer to a four-year college or university by serving as the first two years of a baccalaureate program in the fields of mathematics, physics, or other physical sciences.

Graduates of our two-year program have successfully transferred to and graduated from institutions such as Lafayette College, Kutztown University, the University of Pittsburgh, and Florida Institute of Technology. They've earned degrees in fields as diverse as chemical or geological engineering, mathematics, and oceanography. They've also saved thousands of dollars on their education by getting their start here.

Our program also qualifies you for immediate employment as a laboratory aide or technician, a scientific assistant or in technical sales. Members of Northampton's Career Services and counseling staff, as well as instructors within the program, can assist you in meeting your employment and career goals.

Program Features

In our program, you'll study a combination of common core courses designed for all math or science majors who are specializing in math or physics. You then have the option of focusing on math or physics by selecting a set of specialized courses. In order to ensure that your courses meet the requirements of the school you plan to transfer to, you should work closely with your academic advisor when selecting your electives.

Northampton has a number of special partnerships with four-year institutions. Our admission and transfer agreements allow for smooth transfer to DeSales University, Cedar Crest College, Centenary College, Moravian College, Muhlenberg College, Lincoln or Cheyney Universities.

Program Requirements

While this program has no special admission requirements, certain courses do require a background in trigonometry and chemistry. If you are lacking background in these areas, you

should acquire it during the summer session before your first semester, or during your first semester.

For further information contact the Admissions Office at 610-861-5500 or e-mail us at physics@northampton.edu.

Program Outcomes

Graduates of the program will:

- Demonstrate proficiency in conceptualization and analysis of problems.
- Demonstrate both conceptual and quantitative ability for problem solving.
- Work independently and also collaboratively.
- Use technology to solve problems.
- Use mathematics to solve problems and make decisions.
- Use the scientific method to investigate a problem and present results and conclusions in a clear and concise form.
- Succeed in a math-physics program at a four-year institution.

Math/Physics,

Associate in Science Degree

Course Code	Course Title	Credits
CISC 115	Computer Science I	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
ENGL 151C	English II	3
MATH 180	Calculus I	4
MATH 181	Calculus II	4
MATH 210	Calculus III	4
MATH 211	Differential Equations	4
PHYS 215	Physics for Science & Engineering I	5
PHYS 225	Physics for Science & Engineering II	5
----------	Arts & Humanities Elective (AH)	3
----------	Social Science: Societies and Institutions over Time (SIT)	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
----------	Physics/Math Option Courses (see below)	12
	Total Credits	**60**

Physics Option

CHEM120	General Chemistry I	4
CHEM220	General Chemistry II	4
----------	Electives	4
		12

Math Option

MATH 202	Discrete Math	3
----------	Electives	9
		12

- One course should be designated as Diversity (D).
- One General Education Elective (AH, SIT, SSHB) must be taken in a Writing Intensive (WI) section. The program-related writing intensive competency is satisfied by completion of both combination of PHYS 215 and PHYS 225.
- All electives must be chosen from the list of courses which are applicable to AA and AS degrees.

Career Potential: Leading to transfer degrees for careers in: Research, Teaching, Medicine, Forestry Management, Biotechnology, Pharmaceutical Technology, Environmental Studies, Veterinary Medicine

NCC students have transferred to: Lehigh University, Penn State University, Lafayette College, Kutztown University, Edinboro University, Moravian College, East Stroudsburg University, Rutgers University

Medical Administrative Assistant

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Northampton's Office Administration degree programs are designed to prepare you for a wide variety of opportunities in a modern office setting. The three degrees offered by the Office Administration department are: Office Administrative Assistant, Medical Administrative Assistant, and Legal Administrative Assistant. Each program provides course offerings and experiences to prepare the graduate to work as a team player in a specialized office environment.

Your studies will include state-of-the-art office equipment and software. You will learn the marketable skills required to work well with other people in an office environment, and these skills will be applied through a valuable internship experience related to your field of study. We emphasize development of professional attitudes, values, and ethics. As you grow through the program, you will gain critical thinking, priority setting, and decision-making skills needed in today's business environment.

Program Features

This program prepares you to accept the responsibilities and challenges expected of a skilled administrative assistant in the

vast professional medical field. Students gain proficiency in technology, communication, human relations, time management and organizational skills, decision-making, and creative thinking.

Your training will include medical terminology, development of the special administrative skills needed for front office, medical transcription, health services coding, and insurance responsibilities. Technology training emphasizes specialized medical software, as well as word processing, spreadsheet, database, graphics, and communications applications. You will become an accurate, resourceful, and productive professional comfortable communicating with other medical professionals in a healthcare environment.

We have an excellent record of employment for our graduates in the full range of medical office settings. Our surveys indicate that employers are very satisfied with graduates of this program.

The American Medical Technologists (AMT) have accredited the Medical Administrative Assistant program here at NCC. This enables students to sit for the Registered Medical Assistant (RMA-AMT) Certification Exam after completing the program. Employers are becoming increasingly selective in their hiring practices, so graduates who earn the RMA credential will increase their employability. The program faculty will distribute information about the exam to students at the conclusion of the program.

This program can be completed in the day or evening, on a full- or part-time basis.

Program Outcomes

Graduates of the program will:

- Master operation of state-of-the-art industry equipment and software and appropriately utilize these to accomplish work-related tasks accurately and productively in an office environment.
- Utilize and apply specific field-related knowledge, skills, and experiences to function effectively as a team member in today's challenging work environment.
- Exhibit oral, written, and interpersonal communication skills and poise necessary to work effectively with people in business.
- Utilize analytical skills and administrative techniques necessary to organize, prioritize, and manage the information flow in an office setting.
- Exemplify professionally acceptable attitudes, values, and ethics needed in business.
- Procure an appropriate position in business with a commitment to life long learning to achieve professional growth.

Medical Administrative Assistant,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
OFAD 101 or	Keyboarding I on Microcomputers or	3
OFAD 100+146	Electronic Keyboarding + Formatting with Word	
OFAD 111 or	Trends in Office Automation or	3
OFAD 147+148+149	Introduction to Windows + Learning the Internet + PowerPoint	
OFAD 154	Medical Terminology	3
		15
	Second Semester	
ENGL 151	English II	3
OFAD 121	Keyboarding II on Microcomputers	3
OFAD 125	Word Processing Applications	3
OFAD 155	Basic Medical Transcription	3
OFAD 170	Coding for Medical Services	3
OFAD 172	Processing: Health Care Services Reimbursements	3
		18
	Third Semester	
BUSA/OFAD 221G	Business Communications	3
OFAD 201	Advanced Document Production	3
OFAD 205	Microsoft Office Software Applications	3
----------	General Education Elective	3
----------	General Education Elective	3
		15
	Fourth Semester	
OFAD 230	Modern Office Procedures	3
OFAD 240	Medical Office Management Practices	3

OFAD 250	Internship	3
----------	General Education Elective	3
----------	General Education Elective	3
----------	Elective	3
		18
	Total Credits	**66**

- For the General Education Electives, students must select one course from the list of approved courses in Mathematics (QL) or Science (SCI). In addition, students must select three courses from at least two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of BUSA/OFAD 221G satisfies the Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirement for the program.

Career Potential: Medical Office Manager, Medical Administrative Assistant, Administrative Assistant, Medical Receptionist, Medical Billing Clerk, Medical Transcriptionist, Medical Coder, Medical Records Clerk, Medical Secretary

Medical Assistant

Allied Health & Sciences

Specialized Diploma conferred

Program Narrative

Health care continues to be a growth area of our economy. Varied and satisfying employment opportunities exist, even for individuals with a minimum of science education.

Northampton developed its Medical Assistant specialized diploma program in response to requests from physicians who were looking for workers who were trained in both office and clinical skills. The curriculum is based on standards established by the Commission on Accreditation of Allied Health Education Programs (CAAHEP). The coursework includes both classroom and lab instruction. Students develop their skills in the academic setting prior to experiencing hands-on clinical instruction in physician practices.

The program progresses sequentially. You will master basic skills and competencies first before moving on to more challenging procedures. Students finish the program with a capstone clinical externship in their third semester. During the externship, you will have the chance to work in the medical office setting under the supervision of a clinical preceptor.

The specialized diploma can be completed in one calendar year and is part of a career ladder that allows successful students to gain employment at the earliest point in their academic program. Students can also choose to continue their studies in a specialized field through direct articulation with other Office Administration programs.

Program Features

Students will learn clerical skill such as keyboarding and the fundamentals health care reimbursement. Clinical skills include: history taking, vital sign measurement, documenting on the patient record, medication administration, phlebotomy and EKGs.

Students can elect to attend the program on a part-time or full-time basis, but the Medical Assistant Technique courses must be taken in sequence. This program is offered as a day program at our Fowler Family Southside Center.

After completing the program, students can sit for the Registered Medical Assistant (RMA-AMT) Certification Exam. The program faculty will distribute information about the exam to students at the conclusion of the program.

Program Requirements

This is a selective admission program. Applicants shall have completed work equal to a standard high school course as evidenced by a diploma or GED. The minimum admission requirement to the program include: 1) one year of HS biology or NCC equivalent (BIOS105, 107, 115) with a grade of C or better, and 2) one year of HS algebra with a grade of C or better or NCC equivalent (MATH022).

Prior to acceptance, the student is required to take the English Placement Test (EPT) and be able to enroll in English 101 or be able to transfer English 101 or its equivalent.

After acceptance into the program, students are required to

- Carry and maintain health insurance
- Have physical examination
- Submit results of required lab tests and immunizations and drug screens
- Submit certificate in Basic Life Support for Health Care providers throughout the program
- Submit results of Criminal History Record Information (CHRI), Child and Elder Abuse History Clearance and FBI Clearance.

Deadline

In order to be considered, applicants must submit an application and all transcripts by February 1 for Fall semester start OR September 15 for a Spring semester start. Applications received after this date will be reviewed on a space available basis.

Program Outcomes

Graduates of the program will:

- Demonstrate an understanding of basic human biology and medical terminology as they relate to the role of the medical assistant.
- Perform the administrative, clerical, and clinical competencies of the medical assistant role.
- Demonstrate knowledge of the legal and ethical responsibilities of the medical assistant.
- Function as an assistant to the physician or health care professional in the medical office setting.
- Demonstrate effective written and oral communication skills in the medical assistant role.
- Integrate biopsychosocial principles in delivering care to patients and in performing the medical assistant role.

Medical Assistant,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
BIOS 160	Human Biology	4
MDAS 101	Medical Assistant Techniques I	5
OFAD 101	Keyboarding	3
OFAD 154	Medical Terminology	3
		15
	Second Semester	
MDAS 105	Medical Assistant Techniques	5
OFAD 170	Coding for Medical Services	3
OFAD 172	Processing: Health Care Services Reimbursement	3
OFAD 240	Medical Office Management Practices	3
		14
	Third Semester	
MDAS 201	Medical Assistant Externship	5
		5
	Total Credits	**34**

Career Potential: Medical Assistant in office of: physician, dentist, podiatrist, medical clinic, chiropractor, ambulatory surgical unit, Medical Office Receptionist

Medical Billing

Business & Technology

Specialized Diploma conferred

Program Narrative

The medical records field continues to grow as does the demand for well-trained billing specialists who understand coding diagnoses and health care services. Northampton's two-semester Medical Billing Specialist program, offered at both the Main and Monroe campuses, was designed with the advice of area medical professionals to be more than an overview. The coursework is directly focused on helping you develop the essential skills you need to immediately join the expanding professional medical field.

Program Features

Coursework in the program is hands-on and taught by expert professionals. Northampton's program thoroughly prepares you to accept the responsibilities and challenges of the position. You will become comfortable using computerized office equipment, including industry-standard medical billing software. You'll become an accurate, resourceful, and productive professional, comfortable communicating with other medical professionals.

By the time you graduate, you will understand coding concepts, methodologies, and the process of medical/health service reimbursement. You'll be able to utilize your knowledge, analytical skills, and administrative techniques to organize, prioritize, and effectively code medical/health records.

As you complete your diploma, Northampton's Career Services Office and your instructors can help guide you to employment opportunities. An employee in this field will be a great asset to a professional medical employer.

Classes are offered during the evening at the Main Campus and during the day at the Monroe Campus.

Program Requirements

There is no prerequisite for this program; however, previous office experience in a medical setting is an advantage.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Understand the guidelines regarding the use of the ICD-9-CM coding system and to demonstrate the application of the codes to diagnosis/procedures.
- Understand the guidelines regarding the use of the HCPCS coding system and to demonstrate the application of the codes to medical equipment, supplies, etc.
- Understand the guidelines regarding the use of the CPT coding system and to demonstrate the application of the codes to procedures.
- Understand the proper documentation that is required in order to apply the appropriate coding system.

Medical Billing,

Specialized Diploma

Course Code	Course Title	Credits
	Fall Semester	
OFAD 101 or	Keyboarding I on Microcomputers or	3
OFAD 100+146	Electronic Keyboarding + Formatting with Word	
OFAD 154	Medical Terminology	3
		6
	Spring Semester	
OFAD 170	Coding for Medical Services	3
OFAD 172	Processing: Health Care Services Reimbursement	3
		6
	Total Credits	**12**

Career Potential: Medical coder, Medical billing specialist

Medical Office Specialist

Business & Technology

Specialized Diploma conferred

Program Narrative

Your education could give you a competitive edge when pursuing employment in an office setting. Northampton's Office Administration diploma programs are designed to prepare you to enter a modern office setting in a short time frame. The programs offer career-specific course work for the student wishing to complete their studies within two semesters. Each program provides course offerings that prepare you to work as a team player in a specialized office environment.

Your studies will state-of-the-art office equipment and computer software. You will learn the marketable skills required to work effectively with other people in an office environment. We emphasize development of professional attitudes, values, and ethics. As you progress through the program, you'll gain critical thinking, priority setting, and decision-making skills needed in today's quality-oriented business environment.

Graduates of this diploma program often go on to gain employment and then pursue NCC's Medical Administrative Assistant associate's degree.

Program Features

This program prepares you for the responsibilities and challenges expected of a skilled administrative assistant in a medical work environment. You'll start by learning key medical terminology. Your training will then include the special administrative skills needed for front office, medical transcription, health services coding, and insurance responsibilities required in the wide range of medical settings.

Through our program, you'll gain proficiency in technology, human relations, time management and organizational skills. You'll also hone your decision making and creative thinking. Our technology training emphasizes medical, word processing, spreadsheet, database, graphics, and communications software applications. By the time you graduate, you will have grown to be an accurate, resourceful, and productive professional with the skills necessary to be able to comfortably communicate with other medical professionals in a medical environment

Placement of graduates from our Medical Office Specialist program has been consistently excellent. Employer surveys indicate a very high degree of satisfaction with graduates of this program. Graduates of this diploma program often go on to pursue the Medical Administrative Assistant degree upon graduation while employed. This program can be completed in the day or evening, on a full- or part-time basis.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate an ability to work independently and collaboratively in a medical setting.
- Possess the necessary technical skills operating state-of-the-art equipment and job-specific knowledge related to working in a medical office environment.
- Exemplify professionally acceptable attitudes, values, and ethics needed in the medical profession.
- Procure an appropriate position in a medical setting with a commitment to lifelong learning to achieve professional growth.

Medical Office Specialist,

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
OFAD 101 or	Keyboarding I on Microcomputers or	3
OFAD 121 or	Keyboarding II on Microcomputers or	
OFAD 100+146	Electronic Keyboarding + Formatting with Word	
OFAD 111 or	Trends in Office Automation or	3
OFAD 147+148+149	Introduction to Windows + Learning the Internet + PowerPoint	

OFAD 154	Medical Terminology	3
OFAD___	OFAD Elective	3
		12
	Second Semester	
OFAD 121 or	Keyboarding II on Microcomputers or	3
OFAD 201	Advanced Document Production	
OFAD 155	Basic Medical Transcription	3
OFAD 170	Coding for Medical Services	3
OFAD 172	Processing: Health Care Services Reimbursement	3
OFAD 240	Medical Office Management Practices	3
		15
	Total Credits	**27**

Career Potential: Medical Receptionist, Medical Billing Clerk, Medical Transcriptionist, Medical Coder, Medical Records Clerk, Medical Secretary

Medical Transcription

Business & Technology

Specialized Diploma conferred

Program Narrative

Medical transcriptionists are essential members of any health care team. Their role is to accurately and efficiently produce medical reports created by providers in a medical setting . Skilled transcriptionists are in demand by busy medical professionals who are managing with data from an ever-increasing number of cases.

Through Northampton's two-semester Medical Transcription program you will develop the specialized skills needed to succeed in this exciting career. To achieve the level of proficiency employers expect, our program gives you concentrated basic and advanced instruction along with real-world simulations through hands-on lab activities.

Program Features

This is an accelerated program offered during the day. Students can potentially complete the program in less than 1 year.

Upon successful completion of the program, you will receive a specialized training diploma in Medical Transcription and be prepared to enter the job market. Members of Northampton's professional placement staff, as well as instructors within the program, can assist you in meeting your employment and career goals. Northampton is a member of the AHDI - Association for Healthcare Documentation Integrity Association.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Master operation of state-of-the-industry office equipment and software and appropriately utilize these to accomplish work-related tasks accurately and productively in an office environment.
- Exemplify the professionally acceptable attitudes, values, and ethics needed in business.
- Be ready to procure an appropriate position in business with a commitment to lifelong learning to achieve professional growth.

Medical Transcription,

Specialized Diploma

Course Code	Course Title	Credits
	Fall Semester	
OFAD 121	Keyboarding II on Microcomputers	3
OFAD 125	Word Processing Applications	3
OFAD 154	Medical Terminology	3
		9
	Second Semester	
OFAD 155	Basic Medical Transcription	3
OFAD 254	Advanced Medical Terminology	3
OFAD 255	Advanced Medical Transcription	3
		9
	Total Credits	**18**

Career Potential: Medical Transcriptionist

Multimedia

Humanities & Social Sciences

Specialized Diploma conferred

Program Narrative

Multimedia production involves the creation of audio, video and interactive applications (including games) for the Internet. Northampton's specialized diploma in Multimedia is a six-credit course of study designed for those with previous media and/or computer experience who wish to

broaden and update their skills by becoming proficient in multimedia production and interactive CD/DVD ROM authoring.

The diploma program consists of two courses taught in the College's state-of-the-art multimedia lab. You'll have extensive opportunities for hands-on instruction using the latest hardware and software. Because multimedia production is both a technical and an artistic process, we stress aesthetics, creativity, and design in addition to the practical understanding of computer technology. Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Students will be skilled in the basic operation of multimedia computers and related audio and video equipment.
- Students will be able to formulate and plan multimedia and Internet productions.
- Students will develop their creative intelligence and capacity for creative expression in the form of multimedia and internet applications.
- Students will be able to use various multimedia and Web technologies to communicate information, ideas and feelings to an audience.
- Students will be able to design and use text, graphics, audio and video clips for use in multimedia and the Internet.
- Students will be able to use authoring tools to create interactive applications

Multimedia,

Specialized Diploma

Course Code	Course Title	Credits
CMTH180	Multimedia Production	3
CMTH182	Advanced Multimedia Production	3
	Total Credits	**6**

Career Potential: Multimedia Producer, Interactive Game Designer

Nanofabrication Manufacturing Technology

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Nanofabrication manufacturing involves making devices at the smallest dimensions. While it was first used in the semiconductor (computer chip) industry, the technologies are now used for a wide variety of applications. These include miniature sensor arrays for biology and medicine, miniature valves, turbines for fluidics, flat panel displays for computers, and integrated circuit "microchips."

As the use of nanofabrication manufacturing technologies by high-tech industries increases, so will the need for trained individuals. Northampton's program prepares graduates for employment as entry-level nanofabrication technicians.

Program Features

The Nanofabrication Manufacturing Technology degree is a unique cooperative program established between Northampton Community College and Pennsylvania State University. In this program, you will begin with three semesters of study at NCC that covers a broad range of electronics and scientific material. You will also complete your required General Education courses at Northampton. These courses help round out your education, preparing you to communicate in the workplace and setting the stage for potential career growth.

The fourth semester of the program is an intensive "capstone" experience taught at Penn State University's Nanofabrication facility at the University Park campus. Students work in a clean room environment and gain experience in operating and troubleshooting nanofabrication processing equipment. The capstone courses are taught by Penn State faculty using state-of-the-art equipment. The Nanofabrication facility at University Park is part of the National Science Foundation's National Nanofabrication Infrastructure Network (NNIN).

Students must have a minimum GPA of 2.5 and be recommended by NCC for the capstone semester. Northampton awards the associate in applied science degree.

Program Outcomes

Graduates of the program will:

- Describe the operation and application of commonly used electronic components and circuits.
- Prototype, test, troubleshoot, and repair electronic circuits.
- Demonstrate the proper use of test equipment including oscilloscopes, DC power supplies, function generators, and multi-meters.
- Collect, record, interpret, and analyze data.
- Interpret technical information in the form of schematics, specifications, graphs, and procedure.
- Record relevant and necessary project information in a working lab notebook.
- Apply the terminology, procedures, equipment to manufacture micro and nanoscale products, and processes used in nanofabrication.
- Apply quality control methodology typical of the industry.
- Demonstrate safe and effective use of nanofabrication processing equipment.

- Demonstrate safe and appropriate maintenance techniques for basic processing equipment used in nanofabrication.
- Identify material and physical hazards associated with basic processing equipment used in nanofabrication.
- Respond appropriately to safety hazards and environmental disposal issues.
- Work both independently and as part of a team.
- Demonstrate written and oral communication skills.
- Use the computer in reporting, analyzing, and researching technical information.
- Be prepared to adapt to changes in the field of nanofabrication.
- Identify industries using nanofab such as opto-electronics, biomedical, sensors, flat panel displays, information storage, micro-electromechanical devices (MEMs), micro-fluidics, solar cells, and microelectronics.

Nanofabrication Manufacturing Technology

Electronics Option

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ELEC 101C	DC/AC Circuit Analysis I	4
ELEC 121	Technical Computer Applications	2
ELEC 177	Electronics Manufacturing I	2
ENGL 101C	English I	3
MATH 140	College Algebra	3
----------	General Education Elective	3
		17
	Second Semester	
CMTH 102	Speech Communication	3
ELEC 126	Digital Electronics I	3
ELEC 151	DC/AC Circuit Analysis II	4
ELEC 155	Introduction to Solid State Devices	2
EMEC 115	Mechanical Skills for Technicians	1
ENGL 151	English II +	3
NANF 270	Nanofabrication Seminar	1
		17
	Third Semester	
CHEM 120	General Chemistry I	4
ELEC 207	Solid State Circuits	4
QUAL 210	Statistical Quality Control	3
	General Education Elective	3
	Elective	3
		17
	Fourth Semester	
4th Semester at the Nanofabrication Facility at Pennsylvania State University, Main Campus		
NANF 211	Materials, Safety and Equipment Overview for Nanofabrication	3
NANF 212	Basic Nanofabrication Processes	3
NANF 213	Thin Films in Nanofabrication	3
NANF 214	Lithography for Nanofabrication	3
NANF 215	Materials Modification in Nanofabrication	3
NANF 216	Characterization, Packaging, and Testing of Nanofabricated Structures	3
		18
	Total Credits	**69**

+ Students are strongly advised to select the Report Writing option of ENGL 151.

- For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH), Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- One General Education course must be Writing Intensive (WI).

Career Potential: Electronics Technician, Process Analyst, Wafer Fab Operator, Engineering Support Technician, Research Technician, Technology Assistant, Project Technician, Device Technician, Photolithography Technician, Manufacturing Technician, Field Service Technician

NOTE: Students completing this program may also complete their Bachelor of Science degree in Technical Management through Franklin University by completing approximately 24 additional course credits at NCC and an

additional 40 course credits through Franklin University's online courses. Check with your advisor for more information and options in course selection.

Nursing: LPN

Allied Health & Sciences

Certificate awarded: Practical Nursing

Program Narrative

Do you have an interest in science, a deep commitment to helping people and enjoy working in teams? NCC can prepare you for a gratifying career in healthcare as a Registered Nurse (RN) through its Associate Degree Nursing Program or a Licensed Practical Nurse (LPN) through its Practical Nursing Certificate Program.

Studying nursing at Northampton Community College is an exciting challenge. If you are accepted into one of these selective admissions programs, you will work hard, but your efforts will pay off. Our graduates find numerous employment opportunities, at competitive salaries, in a wide range of health care settings. NCC's nursing department is proud of its high rate of achievement on licensing examinations and high job placement rates of our graduates.

Northampton's nursing curricula for both the RN and PN programs combine theoretical knowledge and clinical experiences. Students observe and practice what they have learned in the classroom and the college lab in excellent clinical facilities. Clinical experience settings include maternal-child health, mental health, medical-surgical units, and long-term care. Both programs are approved by the Pennsylvania State Board of Nursing and accredited by the National League for Nursing Accrediting Commission, 3343 Peachtree Road Suite 500, Atlanta, GA, 404-975-5000, www.nlnac.org.

NCC's nursing courses are traditionally offered during the day. The RN program is also offered as an Evening/ Weekend option. The college reserves the right to schedule clinical experiences during the day or evening hours and/or weekends, if necessary. Nursing courses are sequentially arranged and can be completed in four consecutive semesters (RN) or one calendar year (PN).

The Practical Nursing program is offered at both the Main and Monroe Campuses. General Education courses included in both nursing curricula are offered during the day and evening as well as on line. Students may elect to complete general education courses prior to entering the nursing program. Students choosing this option are encouraged to consult an academic advisor.

Students admitted to the nursing program are expected to perform the same essential functions of an employment position as a licensed registered or practical nurse. A detailed description of these essential functions is available online from the Nursing Department homepage -- http://www.northampton.edu/Academics/Programs-and-Majors/Nursing.htm.

Scholarship opportunities are available for qualified students.

Practical Nursing (LPN) Program Features

Northampton's Practical Nursing certificate program consists of 27 credits of nursing courses and 16 credits of general education. This program can be completed in one calendar year and prepares graduates to provide nursing care to individuals across the lifespan. Concentrated clinical experience is part of the summer courses, which are scheduled five days a week. This provides students opportunities to apply theoretical knowledge to clinical practice in a variety of settings to better prepare them for their role as a practical nurse.

Practical Nurse (LPN) Program Requirements

Admission to NCC's Practical Nurse program is also selective. Applicants shall have completed work equal to a standard high school course with a minimum of 16 units including 4 units of English, 3 units of Social Sciences, 2 units of Mathematics (one of which is Algebra), and 2 units of Science with a related laboratory or the equivalent.

The minimum admission requirements to the program include:

- Completion of high school biology with a grade of C or better
- One year of Algebra with a C or better
- An acceptable substitute for high school biology is NCC BIOS 115 with a grade of C or better.
- An acceptable substitute for Algebra, it is NCC MATH 022 with a grade of C or better.
- Courses used as admission criteria cannot be used to satisfy degree requirements.
- A minimum GPA of 2.5 is required.

Meeting the minimum admissions requirements does not guarantee admission into the Nursing program.

Primary consideration is given to those who received Bs or better in the program sciences on their first attempt. If seats are available, the College reserves the right to accept students who have in the judgment of the College, the potential to complete the Nursing Program but who fall below the standards listed above.

Students admitted to the nursing program are expected to perform the same essential functions of an employment position as a licensed practical nurse. A detailed description of the essential functions is available online from the Nursing Department homepage.

Applicants to the Advanced Placement LPN Program

The College offers an Advanced Placement program for the PN program enabling students with recent incomplete nursing education experience, licensure in another state or country, or foreign nursing education to gain advanced standing in the PN program. Qualified candidates gain

entrance into the program for the Spring semester on a seat available basis.

To qualify for the Advanced Placement program, students must:

- Meet all PN program prerequisite requirements.
- Complete the first semester General Education courses for the program prior to being accepted.
- Successfully complete a two-part challenge examination and be approved by the nursing department prior to being accepted.

Primary consideration is given to those who received Bs or better in the program sciences on their first attempt. If all spaces in the program are not filled by students who have met the aforementioned standards, the College reserves the right to accept students who have, in the judgment of the College, the potential to complete the Nursing Program.

Contact the Admissions Office at 610-861-5500 for additional information.

Deadlines

In order to be considered, applicants must submit an application and all transcripts to the Admissions Office by February 1 for Fall PN start. Applications received after this date will be reviewed on a space available basis.

Please Note:

Act 1985-109 known as the Professional Nursing Law of the Laws of Pennsylvania declares the following: "...The Board shall not issue a license or certificate to an applicant who has been convicted of a felonious act prohibited by the act of April 14, 1971 (P.L. 233, No. 64), known as 'The Controlled Substance, Drug, Device and Cosmetic Act', or convicted of a felony relating to a controlled substance in a court of law of the United States or any other state, territory, or country unless:

1. at least ten (10) years have elapsed from the date of conviction;
2. the applicant satisfactorily demonstrates to the board that he has made progress in personal rehabilitation since the conviction such that licensure of the applicant should not be expected to create a substantial risk of harm to the health and safety of patients or the public or a substantial risk of further criminal violations;
3. and the applicant otherwise satisfies the qualifications contained in or authorized by this act.

Sections 133.14. and 15.1 of the Professional Nursing Law and Sections of the Practical Nursing Law imply the will of the legislature in relation to felonies and misdemeanors reflecting questions about moral character.

As used in this section the term 'convicted' shall include a judgment, an admission of guilt or a plea of nolo contendere. An applicant's statement on the application declaring the absence of a conviction shall be deemed satisfactory evidence of the absence of a conviction, unless the board has some evidence to the contrary."

Contact the Admissions Office at 610-861-5500 or the Nursing Department at 610-861-5376 for further information.

Program Outcomes - Practical Nursing Program

The graduate of the program will:

1. Demonstrate completion of the curriculum objectives and associated competencies:

a. Assist in the application of the nursing process to provide nursing care to individuals across the lifespan through efficient and effective use of resources in structured health care settings.

b. Communicate effectively with patients, their support systems, and the health care team through the use of interpersonal skills and technology.

c. Assess the health status and health care needs of patients through the collection of data within established protocols and guidelines.

d. Employ basic clinical decision making based on critical thinking skills to deliver safe effective nursing care under the supervision of an experienced registered nurse, physician, or dentist.

e. Demonstrate caring interventions based on accepted standards of care and the physiologic and psychosocial needs of the patient.

f. Collaborate with patients, support persons, members of the health care team and community agencies to provide patient-centered quality care.

g. Utilize the teaching-learning processes to promote, maintain, and restore health to individuals within their communities.

h. Demonstrate professional accountability and commitment to standards of professional practice while practicing nursing within legal, ethical and regulatory frameworks.

2. Students will be prepared to successfully complete the National Council Licensure Examination - PN.

3. Students will be satisfied with their nursing education.

4. Students will be prepared for and gain employment in a variety of settings.

Nursing (LPN),

Practical Nursing Certificate

Course Code	Course Title	Credits
	First Semester	

BIOS 160	Human Biology	4
ENGL 101C	English I	3
NURS 101	Introduction to Nursing	8
PSYC 103	Introduction to Psychology	3
		18
	Second Semester	
NURS 151	Medical-Surgical Nursing for the Practical Nurse	8
PSYC 258	Developmental Psychology	3
SOCA 103	Principles of Sociology	3
		14
	Third Semester (Summer)	
NURS 205	Geriatric Nursing for the Practical Nurse	4
NURS 206	Maternal Nursing for the Practical Nurse	4
NURS 207	Mental Health Nursing for the Practical Nurse	3
		11
	Total Credits	**43**

Career Potential: LPN Program, LPN in: Medical-Surgical, Long Term Care, Physician Office, Outpatient Clinics, Mental Health

Nursing: RN

Allied Health & Sciences

Degree awarded: Associate in Applied Science;

Program Narrative

Do you have an interest in science, a deep commitment to helping people and enjoy working in teams? NCC can prepare you for a gratifying career in healthcare as a Registered Nurse (RN) through its Associate Degree Nursing Program or a Licensed Practical Nurse (LPN) through its Practical Nursing Certificate Program.

Studying nursing at Northampton Community College is an exciting challenge. If you are accepted into one of these selective admissions programs, you will work hard, but your efforts will pay off. Our graduates find numerous employment opportunities, at competitive salaries, in a wide range of health care settings. NCC's nursing department is proud of its high rate of achievement on licensing examinations and high job placement rates of our graduates.

Northampton's nursing curricula for both the RN and PN programs combine theoretical knowledge and clinical experiences. Students observe and practice what they have learned in the classroom and the college lab in excellent clinical facilities. Clinical experience settings include maternal-child health, mental health, medical-surgical units, and long-term care. Both programs are approved by the Pennsylvania State Board of Nursing and accredited by the National League for Nursing Accrediting Commission, 3343 Peachtree Road Suite 500, Atlanta, GA, 404-975-5000, www.nlnac.org.

NCC's nursing courses are traditionally offered during the day. The RN program is also offered as an Evening/Weekend option. The college reserves the right to schedule clinical experiences during the day or evening hours and/or weekends, if necessary. Nursing courses are sequentially arranged and can be completed in four consecutive semesters (RN) or one calendar year (PN).

The Practical Nursing program is offered at both the Main and Monroe Campuses. General Education courses included in both nursing curricula are offered during the day and evening as well as on line. Students may elect to complete general education courses prior to entering the nursing program. Students choosing this option are encouraged to consult an academic advisor.

Students admitted to the nursing program are expected to perform the same essential functions of an employment position as a licensed registered or practical nurse. A detailed description of these essential functions is available online from the Nursing Department homepage -- http://www.northampton.edu/Academics/Programs-and-Majors/Nursing.htm.

Scholarship opportunities are available for qualified students.

Associate Degree Nursing (RN) Program Features

The RN program requires a minimum of four academic semesters to complete. Students are admitted into the Day RN program twice a year (August/January). Students may choose to enter this program in the Fall or Spring. Students are admitted to the Evening/Weekend program every two years (even years) in January. Class is held in the evening and clinical experiences are scheduled on weekends and occasionally on Friday afternoons.

Associate Degree Nursing (RN) Program Requirements

Admission is on a selective basis. Applicants shall have completed work equal to a standard high school course with a minimum of 16 units including 4 units of English, 3 units of Social Sciences, 2 units of Mathematics (two of which are Algebra), and 2 units of Science with a related laboratory or the equivalent.

The minimum admission requirements to the program include:

- Completion of high school chemistry and biology with labs and grades of B or better
- Two years of algebra with a C or better
- An acceptable substitute for high school chemistry is NCC CHEM 135 with a grade of B or better; for high school biology it is NCC BIOS 115 with a B or better
- An acceptable substitute for high school algebra I and II is MATH 022 and 026 or MATH 028 with grades of Cs or better.
- Courses used to satisfy admission criteria cannot be used to satisfy degree requirements.
- Students applying to the program must have a minimum GPA of 3.00. Primary consideration is given to those who have received a grade of B or better in the program sciences on the first attempt.

Please note: Meeting the minimum admission requirements does not guarantee admission to the Nursing program. If available spaces in the program are not filled by students who have met the aforementioned standards, the College reserves the right to accept students who have, in the judgment of the College, the potential to complete the Nursing Program.

Applicants to the Advanced Placement RN Program

The College offers an Advanced Placement program for LPNs to earn an associate degree and sit for the National Council of Licensing Examination-RN.

To qualify for the Advanced Placement program, you must:

- Be an LPN
- Meet RN program prerequisite requirements
- Complete the General Education component (with "C" or better) of the RN program. LPNs may elect to take approved challenge exams for select nursing courses for credit toward the associate degree.

Qualified candidates are admitted to the program on a seat available basis. Primary consideration is given to those who received Bs or better in the program sciences on the first attempt. If all spaces in the program are not filled by students who have met the aforementioned standards, the College reserves the right to accept students who have, in the judgment of the College, the potential to complete the Nursing Program.

Contact the Admission Office at 610-861-5500 for additional information.

Deadlines

In order to be considered, applicants must submit an application and all transcripts by September 15 for Spring Semester (RN) and by February 1 for Fall Semester starts (RN/PN). Applications received after these dates will be reviewed on a space available basis.

Professional Conduct

Nursing students are expected to conduct themselves in a professional manner in accordance with the American Nurses Association Code of Ethics.

Before Beginning the Program:

Nursing students must be in good physical and mental health. After acceptance, students are required to:

- Carry and maintain health insurance
- Have a physical examination
- Submit results of required lab tests and tuberculin (TB) skin test
- Submit an immunization record or have required titers drawn
- Certification in Basic Life Support (CPR) is required throughout the program.
- Submit results of Pennsylvania State Police and FBI criminal background check, Pennsylvania Child and Elder Abuse History Clearance and nine panel urine drug screen.

Please Note:

Act 1985-109 known as the Professional Nursing Law of the Laws of Pennsylvania declares the following: "...The Board shall not issue a license or certificate to an applicant who has been convicted of a felonious act prohibited by the act of April 14, 1971 (P.L. 233, No. 64), known as 'The Controlled Substance, Drug, Device and Cosmetic Act', or convicted of a felony relating to a controlled substance in a court of law of the United States or any other state, territory, or country unless:

1. at least ten (10) years have elapsed from the date of conviction;

2. the applicant satisfactorily demonstrates to the board that he has made progress in personal rehabilitation since the conviction such that licensure of the applicant should not be expected to create a substantial risk of harm to the health and safety of patients or the public or a substantial risk of further criminal violations; and

3. the applicant otherwise satisfies the qualifications contained in or authorized by this act.

Sections 133.14. and 15.1 of the Professional Nursing Law and Sections of the Practical Nursing Law imply the will of the legislature in relation to felonies and misdemeanors reflecting questions about moral character.

As used in this section the term 'convicted' shall include a judgment, an admission of guilt or a plea of nolo contendere. An applicant's statement on the application declaring the absence of a conviction shall be deemed satisfactory evidence of the absence of a conviction, unless the board has some evidence to the contrary."

Contact the Admissions Office at 610-861-5500 or the Nursing Department at 610-861-5376 for further information.

Program Outcomes - Associate Degree Nursing Program

The graduate of the program will:

1. Demonstrate completion of the program objectives and associated competencies:

a. Use the nursing process to manage and provide care to individuals across the lifespan through efficient and effective management of resources in a variety of health care settings.

b. Communicate effectively with patients, their support systems, and the health care team through the use of interpersonal skills and technology.

c. Perform ongoing comprehensive assessments of patients' health status and changing needs.

d. Employ clinical decision making based on critical thinking skills and evidence-based practice to deliver safe effective nursing care through the nursing process.

e. Demonstrate caring interventions based on physiologic and psychosocial needs of the patient.

f. Collaborate with patients, support persons, members of the health care team and community agencies to provide patient-centered quality care.

g. Initiate the teaching-learning processes to promote, maintain, and restore health to individuals within their communities.

h. Demonstrate professional accountability and commitment to standards of professional practice while practicing nursing within legal, ethical and regulatory frameworks.

2. Students will be prepared to successfully complete the National Council Licensure Examination - RN.

3. Students will be satisfied with their nursing education.

4. Students will be prepared for and gain employment in a variety of settings.

Nursing (RN),

Associate in Applied Science Degree

Course Code	Course Title	Credits
BIOS 204	Human Anatomy and Physiology I	4
ENGL 101C	English I	3
NURS 101	Introduction to Nursing	8
PSYC 103	Introduction to Psychology	3
		18
	Second Semester	
BIOS 254	Human Anatomy and Physiology II	4
ENGL 151	English II	3
MATH 140 or	College Algebra or	
MATH 150	Introductory Statistics	3
NURS 215	Nursing Care of Patients with M/S Problems	8
		18
	Third Semester	
BIOS 202	Microbiology	4
NURS 223	Maternal Child Health Nursing	4
NURS 224	Care of Mental Health Patients	4
PSYC 258	Developmental Psychology	3
SOCA __	Sociology/ Anthropology Elective +	3
		18
	Fourth Semester	
CMTH 102	Speech Communication	3
NURS 231	Nursing Seminar	2
NURS 257	Complex Problems I: Critical Care	4
NURS 258	Complex Problems II: Gerontology/Patient Care Management	4
PHIL 202G	Ethics and Moral Problems	3
		16
	Total Credits	**70**

+ For the SOCA elective, students must select a SOCA course from the list of approved General Educations courses - SOCA 102 or 103 is recommended.

- One course should be designated as Diversity (D).
- Completion of PHIL 202G satisfies the Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirement for this program.
- The Social Science (SIT) requirement and the free elective requirement have been waived for this program.

Transfer Potential: Cedar Crest College, DeSales University, Drexel University, East Stroudsburg University, Temple University

Career Potential: RN Program, Medical-Surgical Nurse, Critical Care Nurse, Emergency Room Nurse, Operating

Room Nurse, Physician Office Nurse, Home Health Nurse, Geriatric Nurse, Mental Health Nurse, Perinatal Nurse, Pediatric Nurse

Office Administrative Assistant

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Northampton's Office Administration degree programs are designed to prepare you for a wide variety of opportunities in a modern office setting. The three degrees offered by the Office Administration department are: Office Administrative Assistant, Medical Administrative Assistant, and Legal Administrative Assistant. Each program provides course offerings and experiences to prepare the graduate to work as a team player in a specialized office environment.

Your studies will include state-of-the-art office equipment and software. You will learn the marketable skills required to work well with other people in an office environment, and these skills will be applied through a valuable internship experience related to your field of study. We emphasize development of professional attitudes, values, and ethics. As you grow through the program, you will gain critical thinking, priority setting, and decision-making skills needed in today's business environment.

Program Features

Our program prepares you to accept the responsibilities and challenges expected of a skilled administrative assistant in businesses of all sizes, from small offices to large corporations. You'll gain proficiency in technology, communication, human relations, time management and organizational skills. You'll also improve your decision-making and creative thinking. Technology training emphasizes word processing, spreadsheet, database, graphics, and communications software applications. In short, you'll grow into an accurate, resourceful, and productive professional comfortable communicating with other professionals in an office environment.

Placement of graduates from this program has been consistently excellent. Employer surveys indicate a very high degree of satisfaction with graduates of this program. Our program faculty are affiliated with the International Association of Administrative Professionals (IAAP).

This program can be completed in the day or evening, on a full- or part-time basis.

Program Outcomes

Graduates of the program will:

- Master operation of state-of-the-art industry equipment and software and appropriately utilize these to accomplish work-related tasks accurately and productively in an office environment.
- Utilize and apply specific field-related knowledge, skills, and experiences to function effectively as a team member in today's challenging work environment.
- Exhibit oral, written, and interpersonal communication skills and poise necessary to work effectively with people in business.
- Utilize analytical skills and administrative techniques necessary to organize, prioritize, and manage the information flow in an office setting.
- Exemplify professionally acceptable attitudes, values, and ethics needed in business.
- Procure an appropriate position in business with a commitment to life long learning to achieve professional growth.

Office Administrative Assistant,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
OFAD 101 or	Keyboarding I on Microcomputers or	
OFAD 100+146	Electronic Keyboarding + Formatting with Word	3
OFAD 111 or	Trends in Office Automation or	
OFAD 147+148+149	Introduction to Windows + Learning the Internet + PowerPoint	3
----------	OFAD or BUSA Elective	3
		15
	Second Semester	
ARTA 170	Computer Graphics	4
ENGL 151	English II	3
OFAD 121	Keyboarding II on Microcomputers	3
OFAD 125	Word Processing Applications	3
OFAD 131	Machine Transcription	3
----------	General Education Elective	3
		19
	Third Semester	
ACCT 100	Accounting for Non-Accountants	3

ARTA 171	Desktop Publishing I	4
OFAD 201	Advanced Document Production	3
OFAD 205	Microsoft Office Software Applications	3
OFAD/BUSA 221G	Business Communications	3
----------	General Education Elective	3
		19
	Fourth Semester	
OFAD 230	Modern Office Procedures	3
OFAD 250	Internship	3
----------	General Education Elective	3
----------	General Education Elective	3
----------	Elective	3
		15
	Total Credits	**68**

- For the General Education Electives, students must select one course from the list of approved courses in Mathematics (QL) or Science (SCI). In addition, students must select three courses from at least two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of OFAD/BUSA 221G satisfies the Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirement for the program.

Career Potential: Office/Staff Manager

Office Skills Specialist

Business & Technology
Specialized Diploma conferred

Program Narrative

If you would like to work in an office setting but have limited computer experience, you can become a more attractive job candidate by developing your skills. In particular, you'll need to become proficient in the use of the Microsoft Office suite of computer software. The NCC Office Skills Specialist program prepares you to confidently enter a modern office setting. You can earn your diploma in just one semester. Course work includes the operation of state-of-the art equipment and business-specific software applications. You'll gain the marketable skills required to work accurately and productively in an office environment.

Program Features

This diploma program provides a unique short-term vehicle to develop the entry-level office software skills needed to become employable in a general office setting. All course modules are offered in the BEST Lab on campus. As a result, students can enter the program up to the mid-semester, work at their own pace, and complete the courses in a full semester or less if they so desire. Students completing early are prepared to seek employment immediately.

Program Outcomes

Graduates of the program will:

- Master operation of state-of-the art equipment and software and appropriately utilize these to accomplish work-related tasks accurately and productively in an office environment.
- Procure an appropriate position in an office setting with a commitment to lifelong learning to achieve professional growth.

Office Skills Specialist,

Specialized Diploma

Course Code	Course Title	Credits
OFAD 101 or	Keyboarding I on Microcomputers or	
OFAD 100 + 146	Electronic Keyboarding + Formatting with Word	3
OFAD 205 or	Microsoft Office Software Applications or	
OFAD 141 + 142 + 143	Intro to Word + Intro to Excel + Intro to Access	3
OFAD 111 or	Trends in Office Automation or	
OFAD 147 + 148 + 149	Intro to Windows + Learning the Internet +PowerPoint	3
	Total Credits	**9**

Note: All courses in this diploma program are offered in an open entry/open exit format in the BEST Lab. The BEST Lab (Founders Hall 114) is open from 8:00 a.m. to 8:00 p.m. Monday through Thursday and 8:00 a.m. to 2:00 p.m. on Friday.

Career Potential: Office Support Specialist, Information Processor

Optoelectronics

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

Optoelectronics technology involves both science and electronics in the application of light to achieve voice and data communications. It is the basis of an industry that's growing rapidly both technologically and financially. The Lehigh Valley itself is now part of a growing 'opto beltway' made up of major corporations and new and exciting venture-capital start-up firms.

Today's employers want to hire electronics and opto technicians who have a command of fundamentals so they are then easily trained to keep up with change. The Optoelectronics Technology program provides the background you need to compete in the advancing world of fiber optic communications manufacturing, installation, research and development, repair, and technical sales. Technicians with this knowledge command above-average salaries and opportunities for advancement as their business grows.

Program Features

Northampton's Optoelectronics program begins with electronics courses that serve as a foundation in electronic theory. You'll gain fundamental lab skills needed to solve most design and application problems. The optoelectronics coursework will specifically give the technician the latest experience in working with the materials, electronics, and systems used in today's fiber optic communications while learning the capabilities of managing light as a transmission source.

The Optoelectronics Technology program allows students to apply their knowledge and skills to the design of communications systems and components utilizing fiber optic technology. Installation and testing in data, voice, and video communications is experienced in an industrial lab environment. All technical courses include lab work for hands-on skills in troubleshooting, test equipment operation, bread-board and hardware circuit construction, and related computer skills.

Most technical work in the program is practiced in well-equipped labs on Northampton's Main Campus, while some work may be performed at Lehigh University in the new Photo Optics Center.

There are several flexible options to this program:

1. Students can enter the program at the beginning or easily transfer courses from any accredited program in electronics technology to begin Opto studies immediately.
2. Electronics students can complete their degree and simply pick up several courses in optoelectronics to obtain Fiber Optics Association (FOA) level certification along with the knowledge of fiber optics components and systems and premise wiring.
3. Electronics students can choose to work towards a second major in Optoelectronics Technology.
4. Students can work towards a third degree in Nanofabrication Manufacturing Technology by completing a semester at Penn State University's main campus to get a highly-prized range of skills for the opto device companies in the area.

The Optoelectronics AAS degree may be completed part-time and full-time days and evenings.

Program Requirements

Good math and mechanical aptitude required.

Transfer Programs

Students who consider their AAS as a stepping stone toward longer term goals in optoelectronics engineering should work closely with an advisor to selecting math, science and engineering courses that will transfer. Students completing this program may also complete their Bachelor of Science degree in Technical Management through Franklin University by completing approximately 24 additional course credits at NCC and an additional 40 course credits through Franklin University's online courses. Check with your advisor for more information and options in course selection.

Program Outcomes

Graduates of the program will:

- Describe the theory, operation and physical principles of electronic components and circuits as commonly applied to analog, digital and optical systems used in electronics, communications and network design and repair.
- Demonstrate the application of electronic theory and commonly used methods of circuit analysis.
- Prototype, test, troubleshoot and repair electronic circuits.
- Describe the structure of analog, digital, and fiber optic systems and peripheral components and signals processed in each system.
- Interface external devices to electronic or communications systems and write appropriate technical guides to describe configuration of the system.
- Describe the structure, function and operation of electronic communications systems and their interrelated components.
- Demonstrate proficient research and computer skills in data gathering and analysis.
- Measure data accurately and safely using standard electronic and optical test equipment and analyze and present data in an acceptable and standardized manner.
- Solve common service related problems using both a reactive and proactive approach.
- Demonstrate competent technical writing skills.
- Demonstrate competent speaking skills when working with diverse groups.

- Demonstrate a basic framework of technical vocabulary and graphics interpretation as it applies to electronic, fiber optic, and communications systems.
- Demonstrate observational, integrative, and synthetic skills.
- Design, construct, and troubleshoot electronic and communications circuits of varying types.
- Perform service-related administrative functions.
- Describe the history and complexities of existing and upcoming telecommunications systems.

Optoelectronics Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
ELEC 101	DC/AC Circuit Analysis	4
ELEC 121	Technical Computer Applications	2
ELEC 177	Electronics Manufacturing I	2
ENGL 101C	English I	3
MATH 140	College Algebra	3
		17
	Second Semester	
ELEC 126	Digital Electronics I	3
ELEC 151	DC/AC Circuit Analysis II	4
ELEC 155	Introduction to Solid State Devices	2
EMEC 115	Mechanical Skills for Technicians	1
ENGL 151	English II +	3
OPTO 100	Technology of Telecommunications	3
		16
	Third Semester	
MATH 145	Trigonometry	3
OPTO 101	Introduction to Optoelectronics	4
PHYS 101 or	Physics I or	
CHEM 120	General Chemistry I	4
----------	Technical Elective: ELEC or OPTO	3
----------	General Education Elective	3
		17
	Fourth Semester	
OPTO 201	Fiber Optic Test & Measurement	4
OPTO___	Technical Electives: OPTO	6
----------	General Education Elective	3
----------	Elective	3
		16
	Total Credits	**66**

+ Students are strongly encouraged to select the Technical Writing option of ENGL 151.

- For the General Education Electives, students must select one course from the list of approved courses in two of the following categories: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- One General Education course must be taken in a Writing Intensive (WI) section.
- Computer competencies included in various courses in this program. Thus, completing the program automatically satisfies the computing requirements for program.

Career Potential: Electronics Technician, Optoelectronics Technician, Fiber Optic Installation Technician

Paralegal

Business & Technology

Degree awarded: Associate in Applied Science

Program Narrative

The U.S. Department of Labor continues to project much faster than average growth for this profession. While paralegals may not provide legal services directly to the public except as permitted by law, the Labor Department's occupational outlook notes that the wide range of tasks that paralegals may perform has helped to increase their employment opportunities in a variety of legal offices and other organizations. Northampton's student-centered learning approach to paralegal education will prepare you to enter this dynamic, high-demand profession.

Northampton's program has been approved by the American Bar Association. This prestigious approval places our program in a select group of programs nationwide that are designed and operated to meet the highest standards of paralegal education. For additional information on ABA approval, contact the American Bar Association, Standing Committee on Paralegals, 321 N. Clark Street, Mail Stop 19.1, Chicago, IL 60610-4714 or at www.abaparalegals.org.

Program Features

The program offers numerous legal specialty courses and a required internship at a local legal office. You will learn how a paralegal, working under the general supervision of an attorney, contributes to the delivery of legal services, master state-of-the-art computer software and hardware, and become a productive and efficient professional within the ever-changing legal profession. Most of the legal specialty courses are taught by attorneys and include pleadings, forms, and software used in local, state, or federal practice.

Graduates will be ready to accept positions such as paralegals, trust coordinators, title searchers, settlement clerks, or litigation specialists. If your quest for knowledge is not complete after two years of study, it is possible to transfer to four-year institutions to complete your baccalaureate degree.

Please note that classes that are offered only during the fall include: Contract Law, Criminal Law and Procedure, Family Law, and Real Estate Law. Classes offered only during the spring include: Business Organizational Law, Estates and Trusts, Law Office Procedures, Litigation Practice and Procedure, and Tort Law.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Understand the substantive legal terminology and issues, ethical values, and general office skills needed to function effectively in a legal office environment.
- Demonstrate professional behavior and necessary competencies under the supervision of an attorney in the completion of legal work on behalf of a client.
- Exhibit interpersonal communication skills necessary to work effectively with people in the legal profession.
- Understand the need for and participate in continuing education and professional development opportunities in order to enhance one's value to a legal office.

Paralegal,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
OFAD 101	Keyboarding I	3
PARL 101	Introduction to Paralegal Studies	3
PARL 153	Real Estate Law	3
		15
	Second Semester	
ENGL 151	English II	3
OFAD 125	Word Processing Applications	3
OFAD 163	Law Office Procedures	3
PARL 187	Litigation Practice and Procedure	3
PARL ____	Paralegal Elective +	3
----------	General Education Elective	3
		18
	Third Semester	
ACCT 100 or	Accounting For Non-Accountants or	
ACCT 101	Financial Accounting I	3
OFAD 205	Microsoft Office Software Applications	3
PARL 215G	Legal Research and Writing	3
PARL ____	Paralegal Elective +	3
----------	Mathematics (QL) or Science (SCI) Elective	3/4
		15/16
	Fourth Semester	
PARL 250	Internship	3
PARL ___	Paralegal Elective +	3
----------	Social Science Elective (SIT or SSHB)	3
----------	Social Science Elective (SIT or SSHB)	3
----------	Elective	3
		15
	Total Credits	**63/64**

+ Paralegal Elective options: PARL 151, 156, 161, 162, 163, 166.

- For the General Education Elective and the Social Science Electives, students must select courses so that at least two of the following categories are represented: Arts & Humanities (AH); Social Science: Societies and Institutions over Time (SIT); Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- Completion of PARL 215G satisfies the Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program. Thus, completing the program

automatically satisfies the computing requirement for this program.

Career Potential: Paralegal, Legal Assistant, Trust Coordinator Title Searcher, Settlement Clerk, Litigation specialist

Radio/TV

Humanities & Social Sciences

Degree awarded: Associate in Applied Science

Program Narrative

Northampton's Radio/TV program is a highly creative course of study that allows you to explore your potential in communicating ideas through the use of electronic media.

Graduates of this program are qualified to seek employment as television, radio and recording producers, directors, camera operators, disc jockeys, scriptwriters, audio and recording engineers.

As a graduate you may also qualify for employment as a specialist in media production and planning in radio, television and cable companies, as well as business, industry, hospitals and state and local government. The program also prepares you for new fields of media jobs in small video production houses, recording studios, industry and education.

Program Features

Northampton's program includes both academic and technical aspects of Radio/TV. Curriculum includes courses in radio and television production, editing and post-production, audio recording and mixdown, multimedia, communications and writing, social science, and computer graphics. Optional courses include film studies, portable video, and advanced television and recording studio production. Aesthetic considerations are stressed as the program strives to develop your capacity as an electronic artist.

You will gain practical hands-on experience in the college TV studio and media lab, in the college recording studio, on a student-produced cable TV show and radio show, and with local area broadcasters and businesses.

Courses in this program are offered primarily during the day. Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Students will be skilled in the basic operation of the audio, video and multimedia equipment used to produce media presentations.
- Students will know and be able to use the technical terms and "language" of media production.
- Students will be able to formulate and plan audio, video and multimedia productions and to explain their plans both orally and in writing.
- Students will be able to collaborate with and direct others in the creation of audio, video and multimedia projects.
- Students will develop their creative intelligence and capacity for creative expression in the form of media arts.
- Students will be able to use various media technologies to communicate information, ideas and feelings to an audience.
- Students will be able to combine or edit basic sound and image elements to generate more complex forms of communication messages.
- Students will be able to critically evaluate media including their own work and the work of others.
- Students will have an understanding of the business and operating procedures of radio, television and other electronic media and be able to work effectively in various positions in media companies, in companies with media departments or in entrepreneurial situations.
- Students will be aware of and able to analyze the effects of media on individuals, society and culture.
- Students will understand and be able to describe the evolution of media technologies and industries and the forces that shaped them.
- Students will know the laws applying to media and be able to apply them to real situations.

Radio/TV,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3
CMTH 103	Mass Communication	3
CMTH 120	Radio Production	3
ENGL 101C	English I	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
		15
	Second Semester	
CMTH 126	The Communication Arts	3
CMTH 170	Television Production	3
CMTH 221	History of Broadcasting	3
ENGL 151	English II	3
----------	Mathematics (QL) or Science (SCI) Elective	3/4

		15/16
	Third Semester	
CMTH 225G	Scriptwriting	3
CMTH ___	Media Elective +	3
JOUR 101 or	Journalism and Society or	
JOUR 102 or	Copyediting or	
JOUR 103	Newswriting	3
----------	Electives	6
		15
	Fourth Semester	
CMTH 275	Radio-TV Internship	3
CMTH ___	Media Elective +	3
----------	Electives	9
		15
	Total Credits	**60/61**

+ Media Elective Options: CMTH 180, 182, 245, 246, 251, 252

- The Mathematics (QL) or Science (SCI) Elective must be selected from the list of approved courses for those categories.
- Completion of CMTH 225G satisfies the Writing Intensive (WI) requirement.
- Computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the computing requirement for this program.
- Elective credits may be selected from the following groups or from any courses which meet the transfer or career goals of the students.

Production

- ARTA 130 Introduction to Web Site Design
- ARTA 131 Intro to 3-D Computer Animation
- CMTH 130 MIDI Sequencing and Synthesis
- CMTH 180 Multimedia Production
- CMTH 182 Multimedia Graphics and Animation
- CMTH 240 Portable Video Techniques
- CMTH 245 Audio Recording and Mixdown
- CMTH 252 Video Editing and Post Production
- CMTH 251 Advanced Television Production
- CMTH 246 Advanced Audio Production

Performance

- CMTH 105 Public Speaking
- CMTH 111 Acting I
- CMTH 115 Technical Theatre
- CMTH 117 Stagecraft
- CMTH 122 Radio Workshop
- CMTH 189 Stage Voice and Movement
- CMTH 206 Directing
- CMTH 212 Acting II

Theory

- CMTH 110 Introduction to the Theatre
- CMTH 211/ENGL 211 Plays: Classical to Contemporary
- CMTH 215 Intercultural Communication
- CMTH 230 Intro to Communication Theory
- CMTH 231 Small Group Communication
- CMTH 220 Introduction to Film
- JOUR___ Journalism courses
- SOCA 103 Principles of Sociology
- PSYC 103 Introduction to Psychology

Career Potential: Television/Radio Producer, Audio Producer/Engineer, Multimedia Producer, Director, Camera Operator, Editor, Disc Jockey, Scriptwriter

Important Resources:

Radio/TV Student Information - http://web.mac.com/acerra/NCC/RTV_Home.html

Radiography

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Program Narrative

Medical imaging is a dynamic, fascinating field. It's also a critical element of diagnostic medicine. Radiologists rely on their radiographers to produce optimum images for accurate interpretation.

The modalities in radiology - including sonography, MRI and more - are advancing technologically at an astounding rate. With that in mind, Northampton's Radiography Program introduces its students to all modalities within the curriculum. Our Radiography program is innovative, educationally sound, and vital in providing medical imaging services for the community-at-large.

Our graduates have the option to remain as general diagnostic radiographers or to cross-train in the following areas/modalities:

- Computed tomography (CT)
- Magnetic resonance (MR)
- Bone densitometry (BD)
- Mammography (M)
- Interventional radiology (IR)
- Nuclear medicine (N)
- Radiation therapy (T)
- Diagnostic medical sonography (RDMS)

Diagnostic Medical Sonography is offered at NCC and is listed in the NCC catalog. The other areas require transfer to another institution of higher learning. Each modality requires

additional education and an additional certification examination.

The Radiography Program at NCC is fully accredited by the:

Joint Review Committee on Education in
Radiologic Technology (JRCERT)
20 North Wacker Drive, Suite 2850
Chicago, Illinois 60606-3182
312-704-5300
312-704-5304 (Fax)

E-mail: mail@jrcert.org
Web site: www.jrcert.org

Program Features

The Radiography Program at NCC is 21 months long and operates on both traditional and non-traditional academic calendars. Clinical education at the affiliated hospitals is scheduled during the break between the fall and spring semesters and during both summer sessions at the end of the first year for 40 hours per week.

The Radiography Program has two fully energized radiographic rooms in the Wogenrich Lab on the Main Campus. One room is equipped with computed radiography (CR), coupled with a laser printer. The students practice their skills both on-campus and in clinical education.

When students have completed all of their clinical education requirements by the end of RADT 227 (Clinical Education V), they have the option to voluntarily complete 232 hours (6 weeks) in an Advanced Skills Internship in one of the following specialties:

- Bone Densitometry (BD)
- Computed Tomography (CT)
- Interventional Radiology (IR)
- Magnetic Resonance (MR)
- Mammography (M)

Program Admission Requirements

Admission to the Radiography program at Northampton is on a competitive basis. Minimum admission requirements include:

- Completion of high school diploma or GED equivalent
- Submission of official transcript(s)-high school and each college (attended/enrolled)
- One-year of high school biology with a lab and a grade of C or better; Or BIOS 115 with a grade of C or better
- Two-units of algebra with a grade of C or better; Or MATH 022 and MATH 026, Or MATH 028 with a grade of C or better
- Overall GPA of 2.5 or better
- Information session and interview for competitive applicants by program's admission committee

How to Apply:

- Complete a standard NCC application or reentry Form (if not currently enrolled)
- Request change of major (if currently enrolled)
- Shadow at a Radiography Program affiliated hospital
- Submit a completed a "Career Assessment Form" (CAF)

Meeting the minimum admission requirements does not guarantee admission to the Radiography Program.

In the event that it is difficult to make a decision during the selection process for program admission, primary consideration will be given to those who have:

- Bs or better in college courses such as College Algebra / Introductory Statistics, Human Anatomy I & II or equivalent courses at other colleges
- Completed college credit courses that apply to the program

If available spaces in the program are not filled by students who meet these standards, the College reserves the right to accept students who have, in the judgment of the College, the potential to complete the program.

Deadline:

To receive primary consideration, completed application, shadowing experience, and the CAF, along with all official transcripts must be submitted by February 1. Applications received after that date may be too late for the review process.

Contact the Admissions Office at 610-861-5500 for further information.

After You Have Been Accepted

Radiography program students must do the following:

- Complete a physical examination and submit it to the Health Center at NCC.
- Have or obtain health insurance.
- Sign a disclosure form stating that he or she understands the essential functions/technical standards and is able to comply or requests reasonable accommodations.
- Have or obtain CPR certification for Healthcare Provider.
- Sign a verification of understanding sheet for the Radiography Program's Student Handbook.
- Sign a verification of understanding sheet for the HIPAA requirements for the didactic and clinical setting.
- Criminal background check and drug screening (until clearance is received, program acceptance is provisional and may be rescinded).

Note:

According to the American Registry of Radiologic Technologists (ARRT), "violations of academic honor codes, suspension or program dismissal may prevent a graduate from taking the ARRT certification examination."

Mission Statement

The Radiography program is innovative, educationally sound, and vital in providing medical imaging services for the community-at-large.

Our graduates, in addition to their technical competence and judicious use of ionizing radiation, provide high quality patient care and leadership in their respective area of professional practice.

Our faculty and clinical affiliates work closely together in a cooperative spirit to help a diverse student body develop to its fullest potential in a learner-centered environment.

The program is committed to the profession of Radiologic Sciences by promoting high standards of practice that will serve the students throughout their professional careers.

Joint Mission Statement between NCC and the Clinical Education Settings

Through mutual respect, in a learner-centered environment, we will collectively educate students to embrace the following components of the profession:

- Effective Communication
- Technical competency and Proficiency
- Professionalism
- Problem Solving

Program Features for Certified / Registered (ARRT) Radiographers

A separate program is offered for currently certified and registered ARRT radiographers who were educated in hospital-based radiography programs and now want to earn an associate's degree. 64 - credits are required for degree completion as follows:

- 32 - credits awarded to currently registered ARRT radiographers
- 32 - credits of specified general education courses

Radiography Program Goals and Related Outcomes:

Goal:

To graduate students who are clinically competent.

The student will be able to:

- position, accurately and in a timely manner in order to visualize the appropriate anatomical structures.
- select technical factors that will produce an optimal image.
- employ principles of radiation protection.

Goal:

To graduate students who communicate effectively through word choice, level of explanation, and method of delivery.

The student will be able to:

- write an accurate patient history.
- write effectively.
- listen, understand, and judge what the speaker is saying.
- speak using effective word choice, level of explanation and method of delivery.

Goal:

To graduate students who analyze situations using problem solving principles to foster better patient care.

- The student will be able to:
- do alternative positioning methods.
- critique the image and evaluate radiographic quality.
- manipulate exposure factors.

Goal:

To graduate students who employ the five components of being a true professional - character, attitude, excellence, competency and conduct. (James R. Ball, Professionalism is for Everyone).

The student will be able to:

- look and act like professionals.
- know right from wrong, good from bad, and fair and unfair.
- approach all individuals, situations, and circumstances with respect and sound judgment.

Radiography,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
BIOS 204	Human Anatomy and Physiology I	4
RADT 102	Fundamentals of Radiologic Sciences	3
RADT 107	Clinical Education I	2
RADT 111	Radiographic Procedures I	4
RADT 113	Imaging and Exposure	2
		15
	Second Semester	
BIOS 254	Human Anatomy and Physiology II	4
ENGL 101C	English I	3
RADT 127	Clinical Education II	3
RADT 208	Imaging Equipment and Radiation Production	3
RADT 210	Level II Radiographic Procedures	4

		17
	Summer Session	
RADT 137	Clinical Education III	3
		3
	Third Semester	
CMTH 102	Speech Communication	3
ENGL 151C	English II	3
MATH 140 or	College Algebra or	
MATH 150	Introductory Statistics	3
RADT 125	Sectional Anatomy for Medical Imagers	1
RADT 201	Advanced Imaging	2
RADT 205	Pathology for Radiographers	2
RADT 207	Clinical Education IV	3
		17
	Fourth Semester	
PSYC 103	Introduction to Psychology	3
RADT 227	Clinical Education V	5
RADT 230	Radiation Biology/ Protection	3
RADT 242	Digital Imaging and Analysis	2
RADT 245	Senior Seminar	1
----------	Elective	3
		17
	Total Credits	**69**

- Human Anatomy and Physiology I is substituted for one of the Human Knowledge Courses.
- The Social Science (SIT) requirement has been included in program courses.
- The Diversity (D) requirement is satisfied by the completion of ENGL 151C.
- Writing Intensive (WI) work and computer competencies are included in various courses in this program. Thus, completing the program automatically satisfies the Writing Intensive (WI) and computing requirements for this program.

NOTE: It is recommended that those students entering the radiography program without computer skills from previous educational experiences take one if not all of the following Open Entrance/Open Exit 1-credit courses:

OFAD 141 Introduction to Word

OFAD 142 Introduction to Excel

OFAD 143 Introduction to Access

Radiography for Registered Technologists,

Associate in Applied Science Degree

Course Code	Course Title	Credits
----------	Radiography Registry (Current Certification by the ARRT)	32
BIOS 204	Human Anatomy and Physiology I	4
BIOS 254	Human Anatomy and Physiology II	4
CISC ___	Computer Elective	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
ENGL 151	English II	3
MATH 140 or	College Algebra or	
MATH 150	Introductory Statistics	3
PSYC 103	Introduction to Psychology	3
----------	Social Science: Societies and Institutions over Time (SIT) or Arts and Humanities (AH) Elective	3
----------	Elective	3
	Total Credits	**64**

Career Potential:

Transfer Potential: Bloomsburg University, Cedar Crest College, College Misericordia, DeSales University, East Stroudsburg University, Franklin University, Gwynedd-Mercy College, Kutztown University, Thomas Jefferson University, University of St. Francis, Washburn University

Radiographer (R), Administrator, Bone Densitometrist (BD), Interventional Technologist (IR), Computed Tomography Technologist (CT), Health Physicist, Instructor, Mammographer (M), Magnetic Resonance Technologist (MR), Nuclear Medicine Technologist (N), Quality Management [Quality Assurance/Quality Control] (QM), Radiation Therapist (T), Sales Representative, Sonographer (RDMS)

Real Estate

Business & Technology
Specialized Diploma conferred

Program Narrative

Whether you enjoy helping families make the biggest financial decision of their lives or facilitate commercial real estate purchases and leases, becoming a licensed real estate broker can be an exciting and financially rewarding experience. Northampton's Real Estate program is a special evening program approved by the Pennsylvania Real Estate Commission.

Northampton's program is offered as in-service training to real estate officers as well as to employees of construction firms, banks, and public utilities. The program is particularly valuable if you are preparing for state licensor examination to become a salesperson or a broker.

Program Features

Real estate students learn how a real estate salesperson, working under the supervision of a real estate broker, provides professional services to parties to a real estate transaction. After successfully completing the courses, Real Estate Fundamentals and Real Estate Practice, students will qualify to sit for the state real estate salesperson license. Upon the successful completion of the entire program, students will have met the necessary educational requirements to qualify for the state real estate broker license test.

Program Outcomes

Graduates of the program will:

- Understand the substantive real estate terminology and issues, ethical values, and general office skills to function effectively in a real estate office.
- Understand the professional requirements necessary to consummate a real estate transaction.
- Demonstrate the professional skills to properly complete the documents required for a real estate transaction.
- Demonstrate professional behavior and necessary competence under the supervision of a real estate broker in the performance of representation of real estate clients.
- Demonstrate the requisite competence necessary for the successful completion of the state real estate salesperson license.

Real Estate,

Specialized Diploma Evening Sequence Only

Course Code	Course Title	Credits
REAL 101	Real Estate Fundamentals	2
REAL 105	Real Estate Practice	2
REAL 111	Real Estate Law I	3
REAL 115	Real Estate Construction	2
REAL 121	Real Estate Law II	3
REAL 201	Real Estate Finance	4
REAL 203	Real Estate Appraisal I	3
REAL 205	Real Estate Office Management	2
REAL 223	Real Estate Appraisal II	3
	Total Credits	**24**

Career Potential: Real Estate Officer, Construction Firm Employee, Public Utility Employee

Small Business Management

Business & Technology
Specialized Diploma conferred

Program Narrative

Small business continues to be a major area of economic growth, outstripping projected rates for other business sectors. Over one half of all employed people in the United States are working in small businesses. If you are planning to be a part of that growth, you will want to have an edge on the competition.

Northampton's Small Business Management program is designed specifically for small business owners and managers, or potential owners and managers.

If you're a small business owner who thinks you can't find the time to improve your business skills, Northampton's specialized diploma program is for you. The program can be completed in a year and can be completed online for added convenience.

If you've always wanted to start your own business, this program is also a great option. By completing this sequence of courses, you can take your idea from dream to business plan.

Program Features

Course work in this program is up-to-date and practical, covering a variety of relevant topics such as marketing and sales, financial and personnel management, microcomputers for small business, and small business law.

Our program can be completed in just two semesters of study in convenient evening sessions or online, allowing you to earn your diploma and still maintain your full-time job. Upon graduation, you will be ready to succeed on your own terms in your own business. Members of Northampton's placement staff, as well as instructors within the program, can assist you in meeting your career goals.

Special Note: You can enter this program any given semester and can complete it within one year by attending evening classes on a part-time basis.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Apply practices necessary to operate a small business successfully.
- Understand the role of all major business functions in the successful operation of the small business.
- Develop comprehensive and thorough business plans.
- Understand the risks and rewards of entrepreneurship.
- Demonstrate a knowledge base that will allow them to continue to learn and develop skills to enhance their ability to operate a small business.
- Recognize where to go to find help and information to support their entrepreneurial efforts.
- Understand accounting transactions and use financial statements as decision-making tools.

Small Business Management,

Specialized Diploma

Course Code	Course Title	Credits
SBUS 101	Introduction to Small Business	1
SBUS 102	Accounting for Small Business	2
SBUS 103	Financial Management for Small Business	1
SBUS 105	Marketing Methods for Small Business	1
SBUS 106	Personnel Management	1
SBUS 110	Business Planning for Small Business	1
SBUS ___	Small Business Electives +	3
	Total Credits	**10**

+ Small Business Elective options: SBUS 107, 108, 109, 111, 112, 114

Career Potential: Business Owner, Small Business Manager

Social Work

Humanities & Social Sciences

Degree awarded: Associate in Arts

Program Narrative

If you are looking for a career with meaning, one that allows you to have a direct and positive impact on the lives of others, social work is an excellent choice. Most positions in the field of social work require a bachelor's degree. Northampton's Social Work program is an affordable beginning to your baccalaureate degree in social work.

Social work requires excellent skills in communication, problem solving, observation, and critical thinking. It is a demanding and rewarding profession. Students in our program are expected to take part in hands-on service learning opportunities and are also encouraged to get involved in Social Work Club activities. If you are interested in learning more about the field, we suggest you consider taking the Introduction to Social Work course.

After graduation from a Bachelor in Social Work degree program (BSW), you may seek professional employment in one of the many social and community agencies locally and beyond or choose to enter a graduate program in social work (MSW). You may then become a licensed social worker.

Program Features

Northampton's core liberal arts curriculum to give you the solid background you will need to transfer successfully. Courses in sociology, psychology, history, and biology compliment the knowledge, values and skills of social work practice in the United States and globally.

Our program transfers to many schools of social work in the region, including Cedar Crest College, Alvernia College, Kutztown University, Marywood University, and Misericordia University. If you have a transfer program in mind, you are encouraged to check with that institution to see what its transfer requirements may be. You can then consult with your Northampton advisor and/or social work faculty for elective recommendations and guidance. The Social Work program is offered at both the Bethlehem and Monroe campuses, and online.

Students in the Social Work program may also use it to work toward a BS in Health Service Administration by starting at Northampton and transferring to East Stroudsburg University. Northampton and ESU have developed a course-for-course agreement so that students may start taking classes for their major while at Northampton, and then seamlessly transfer to ESU to complete the degree.

Program Outcomes

Graduates of the program will:

- Be prepared for transfer to a four-year college/ university offering the B.S.W. degree.
- Relate in writing the history and nature of social work in the U.S.
- Explore and articulate cultural values and contributions of diverse cultural groups.
- Learn to think critically in several liberal arts disciplines and to articulate problems and solutions in writing and speech.

Social Work

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
BIOS 105	Contemporary Biology	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
SOCA 103	Principles of Sociology (SSHB)	3
ARTA 101 or	Art History Survey (AH) or	
MUSC 101 or	Introduction to Music (AH) or	
CMTH 110 or	Introduction to the Theatre (AH)	3
		16
	Second Semester	
BIOS 160	Human Biology	4
ENGL 151C	English II	3
PSYC 103	Introduction to Psychology	3
SCWK 101	Introduction to Social Work	3
SOCA 125	Sociology of Families	3
		16
	Third Semester	
MATH 150	Introductory Statistics	3
POLS 110	American National Government (SIT)	3
SOCA 102G	Cultural Anthropology (D)	3
PSYC 258	Developmental Psychology	3
----------	Elective +	3
		15
	Fourth Semester	
HIST 163	American History II	3
PHIL 202G	Ethics and Moral Problems	3
SOCA 105	American Ethnicity	3
SOCA 204	Social Problems	3
----------	Elective +	3
		15
	Total Credits	**62**

+ Recommended Electives: Students should consult their advisor and select electives based on the social work program at the college to which they will transfer. Students may elect Spanish; or other suitable courses from the list of AA/AS degree electives at the front of the college catalog.

- Taking both English I and English II in computer intensive sections satisfies the computing requirement for this program, i.e., ENGL 101C and ENGL 151C.
- Completion of both SOCA 102G and PHIL 202G satisfies the Writing Intensive (WI) requirement and the Diversity (D) requirement.

Career Potential: You will find Social Workers in: Administration and Management, Advocacy and Community Organization, Aging and Gerontology, Alcohol, Tobacco and Other Drugs, Child Welfare and Family, Developmental Disabilities, Health Care Social Work, Justice and Corrections, International Social Work, Mental Health and Clinical Social Work, Occupational and EAP Social Work, Policy and Planning, Politics, Public Welfare, Research, School Social Work

NCC students have transferred to BSW PROGRAMS AT: Cedar Crest College, Kutztown University, Alvernia College, Millersville University,

Sport Management

Business & Technology

Degree awarded: Associate in Arts

Program Narrative

For every professional player or coach you see on the court, the sports industry employs thousands more people behind the scenes. You could be one. Our new, highly competitive Sport Management program will prepare you to be a first-round draft choice for many professional positions in the sports industry or to launch a business of your own.

You can earn an associate's degree from Northampton after four semesters of full-time study and enter the workforce at the entry level, however to be the most competitive job candidate possible, a bachelor's degree in the field is recommended.

The Sport Management transfer program combines Northampton's two years of study with two additional years at DeSales University. The bachelor's degree will prepare you for employment in these areas: Intercollegiate Athletics, Professional Sport, Facility Management, Campus Recreation Programs, Community Based Sport, Sport Information, Sport Marketing and Promotion, Sport Law, Fund Raising and Development, Sales, Public Relations, Sport Journalism, Club Management, Corporate Fitness, Physical Fitness, Athletic Training/Sports Medicine, Aquatics Management, Consulting, and Entrepreneurship.

Program Features

The program includes four semesters of study; 21 classes for a total of either 60 or 61 credits. Our curriculum includes a strong background in general academic skills and all the specialty courses you will need to transfer into a four-year program. Courses include marketing, event planning, management fundamentals and more. Our agreement with nearby DeSales University assures you a smooth transfer into their Sport Administration program.

Our advisors are ready to coach you in how to get the most out of your NCC experience. You will work closely with professors who want to see you succeed, both academically and in the sports world. Courses in this program are offered primarily during the day.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Be prepared to transfer into a Sport Management program at a four-year college or university.
- Be able to apply the principles and functions of management to a sport management related venue.
- Be able to use sport marketing knowledge to construct and implement a comprehensive plan for a collegiate event as a member of a planning group.
- Be able to use both current and historical data in order to make a connection between sport and societal issues.
- Identify a career option within the field of Sport Management.

Sport Management,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Year	
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
SPRT 101	Introduction to Sport Management	3
CISC___	Computer Elective	3
----------	Physical Education Elective	1
----------	Mathematics Elective (QL)	3
		16
	Second Semester	
BUSA 205	Management Fundamentals	3
ENGL 151	English II	3
----------	Arts & Humanities Elective (AH)	3
----------	Social Science: Societies and Institutions over Time (SIT) or	
	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
----------	Elective	3
		15
	Third Semester	
BUSA 131	Principles of Marketing	3
PSYC 103	Introduction to Psychology	3
SPRT 152G	Sports in Society	3
----------	Mathematics (QL) or Science (SCI) Elective	3/4
----------	Social Science: Societies and Institutions over Time (SIT) or	
	Social Science: Scientific Study of Human Behavior Elective (SSHB)	3
		15/16
	Fourth Semester	
SPRT 162	Facility Management and Event Planning	3
----------	Physical Education Elective	1
----------	Social Science: Societies and Institutions over Time (SIT)	3
----------	Science Elective (SCI)	4
----------	Elective	3
		14
	Total Credits	**60/61**

- For their Arts and Humanities (AH) and Social Science: Societies and Institutions over Time (SIT) or Social Science: Scientific Study of Human Behavior (SSHB) Electives, students must select courses from the list of approved courses in each of those categories.
- The Mathematics Elective (QL) and at least one of the Science (SCI) Electives must be selected from the list of approved general education courses in each of those categories.

- One course should be designated as Diversity (D).
- Completion of SPRT 152G satisfies the Writing Intensive program-related requirement. In addition, students must take one General Education course in a Writing Intensive (WI) section.

Career Potential: Management Position in Sport

NCC students have transferred to: East Stroudsburg University, DeSales University, Bloomsburg University, Pennsylvania State University, West Chester University, Kutztown University, Temple University, York College

Sports Medicine: Athletic Training

Allied Health & Sciences

Degree awarded: Associate in Science

Program Narrative

The field of sports medicine is gaining in popularity and employment opportunities are expanding. The demand for Certified Athletic Trainers in particular is increasing. Certified Athletic Trainers are employed in secondary schools, colleges, universities, professional sports, hospitals, sports medicine clinics and the durable medical equipment industry.

A career as a Certified Athletic Trainer requires a bachelor's degree at the entry level. If you're planning to attend a four-year college or university, Northampton's Sports Medicine: Athletic Training program is an affordable way to start your education. With a curriculum that parallels the first two years of most four-year programs, NCC's program can save you thousands of dollars on your undergraduate degree.

The Associate in Science degree in Sports Medicine with a concentration in Athletic Training is designed to prepare students to successfully transfer to a four year CAATE accredited athletic training program. Students will also be prepared to transfer to other four year specialty programs within the realm of exercise science. In addition, students in our program develop a level of expertise in sports medicine that opens up additional employment opportunities as a personal trainer or health fitness instructor immediately upon graduation from NCC.

Students in the program learn basic skills in the prevention, emergency care, assessment, and rehabilitation of athletic injuries to prepare them to pursue certification as an athletic trainer. Sports Medicine courses include on-campus labs and observational hours in a variety of professional settings. The Sports Medicine program can be completed on a full-time or part-time basis. Students pursuing the degree on a part-time basis are highly encouraged to complete the science related courses prior to entering the program specific courses (i.e. Chemistry, Anatomy & Physiology, etc.). The program requires students to have a good knowledge base in science and math to be successful. Students are advised to speak with an academic advisor to discuss their entrance and success in the program.

Program Requirements

The Sports Medicine program requires a minimum of four academic semesters to complete. Students are admitted to the program once a year (August). Admission is on a competitive basis. Applicants shall have a high school diploma or GED.

The minimum admission requirements to the program include:

- Completion of high school chemistry with a grade of B or better (or NCC's CHEM 135).
- High school biology (or NCC equivalent BIOS 107, 115) with a grade of C or better.
- One year of HS algebra (or NCC MATH 022) with a grade of C or better.
- Eligibility to take English 101.

Meeting the admission requirements does not guarantee admission to the program. Primary consideration is given to those students who have Bs in program sciences. If available spaces in the program are not filled by students who have met the aforementioned standards, the College reserves the right to accept students who have, in the judgment of the College, the potential to complete the Sports Medicine program.

After You Have Been Accepted

Students who have been accepted to the Sports Medicine program will be required to submit:

- A Pennsylvania State Police Criminal Background Check or FBI Clearance.
- Required physical examination forms and immunization history.
- Documentation of recent hepatitis B vaccination or relevant titer.

Deadline

In order to be considered, you must submit an application and all transcripts by February 1 for the Fall semester start date. Applications received after that date will be reviewed on a space available basis.

Program Outcomes

The Associate in Science in Sports Medicine: Athletic Training program will:

- Prepare students to transfer to and excel in a 4 year Commission on Accreditation of Athletic Training Education (CAATE) athletic training program.
- Provide students with the knowledge to sit for the National Strength and Conditioning Association's Certified Personal Trainer (NSCA-CPT) exam, the American College of Sports Medicine's (ACSM) Certified Personal Trainer exam, or ACSM's Health Fitness Instructor (HFI) exam.
- Students will demonstrate knowledge of prevention, management, and rehabilitation of athletic injuries and begin to bridge the gap between classroom knowledge and clinical practice.

- Students will demonstrate critical thinking and problem solving skills and gain knowledge on how to apply them to athletic training situations.
- Students will gain knowledge in athletic training professional development standards.
- Provide students with knowledge of athletic training practice standards and employment settings as well as the behavioral attitudes needed to excel in the athletic training environment.
- Students will learn effective communication among health care providers and other integral members within the field of athletic training (administrators, coaches, family, and community).

Sports Medicine: Athletic Training,

Associate in Science Degree

Course Code	Course Title	Credits
	First Year	
BIOS 204	Anatomy & Physiology I	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
PSYC 103	Introduction to Psychology	3
SMAT 101	Foundations of Athletic Training & Sports Medicine	3
		16
	Second Semester	
BIOS 254	Anatomy & Physiology II	4
ENGL 151	English II	3
HEAL 150	Contemporary Health	3
SMAT 230	Prevention and Management of Sport and Fitness Injuries	3
SMAT 235	Basic Athletic Training Techniques Lab	1
SOCA 102	Cultural Anthropology	3
		17
	Third Semester	
CHEM 135	Chemistry of Life	4
MATH 140	College Algebra	3
NUTR 105	Introduction to Nutrition	3
SMAT 202	Kinesiology: Applied Anatomy	3
----------	Arts & Humanities Elective (AH)	3
		16
	Fourth Semester	
PHYS 101	Physics I	4
MATH 150	Statistics	3
SMAT 240G	Acute Care of Athletic Injuries and Illness	4
SMAT 260	Exercise Physiology and Exercise Prescription	3
		14
	Total Credits	**63**

- For the Arts and Humanities (AH) Elective, students must select courses from the list of approved courses in that category.
- Either the AH Elective, PSYC 103, or SOCA 102 must be taken in a writing intensive (WI) section.
- One course should be designated as Diversity (D).

Career Potential: Certified Athletic Trainer, Personal Trainer, Health Fitness Instructor, Group Fitness Instructor, Exercise Physiologist, Exercise Specialist, Weight Management Consultant

Transfer Potential: East Stroudsburg University, Temple University, West Chester University, DeSales University

Surgical Technology

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Program Narrative

Surgical Technicians are increasingly important members of operating room teams. Working under the supervision of surgeons, registered nurses and other surgical personnel, they are vital to providing quality patient care.

Northampton's Associate in Applied Science Degree program prepares students to assist in the operating room. Through our collaborative partnership with St. Luke's Hospital and Health Network, the program includes exceptional clinical experience. NCC's Surgical Technician graduates are ready to join the growing healthcare workforce.

Courses in the first two semesters provide students with the foundational prerequisites to the clinical experience sequence. Surgical Technology students are oriented to the surgical suite and the daily routine of the facility. They initially observe surgical cases and then begin a gradual progression to assisting in more complex surgical procedures.

The Surgical Technology Program consists of 30 credits of course work. Courses prepare graduates to care for patients

throughout the lifespan. Concentrated clinical experiences are part of all Surgical Technology courses and are scheduled up to four days a week in an operating room setting. This provides students the opportunity to apply their class work in a real-world setting and incorporate advanced critical thinking. Courses must be taken sequentially.

Core Progressive Threads of the Surgical Technology I-IV courses

- Identify the role of the Surgical Technologist as a member of the surgical team
- Apply the principles of asepsis in the operating room setting
- Demonstrate appropriate use and care of basic instruments, equipment, and supplies
- Demonstrate safe perioperative patient care in basic surgical procedures and in various specialties under the supervision of the operating room team
- Demonstrate appropriate use and care of specialty instruments, equipment, and supplies

Special Features

- Graduates of the St. Luke's Surgical Technology Certificate Program are eligible for admission for the AAS degree in Surgical Technology upon meeting the admission requirements for this program. Surgical Technology courses from St. Luke's Surgical Technology Certificate program are transferable.
- All students completing the AAS in Surgical Technology Degree Program will be expected to take the Certification for Surgical Technologist's examination within one year of completing the program.

Program Requirements

Admission is on a competitive basis. Applicants shall have completed work equivalent to a standard high school course with a minimum of 16 units including 4 units of English, 3 units of Social Sciences, 2 units of mathematics (one of which is Algebra), and 2 units of science with a related laboratory or the equivalent.

The minimum admission requirement to the program includes completion of high school biology with a grade of C or better or NCC BIOS 115 with a grade of C or better and one year of high school algebra with a C or better or NCC MATH 022 with a C or better. A minimum (high school or college) GPA of 2.50 is required. Meeting the minimum admissions requirements does not guarantee admission to the program.

Primary consideration is given to students with a strong science background. If available places in the program are not filled by students who have met the aforementioned standards, the College reserves the right to accept students who have, in the judgment of the college, the potential to complete the Surgical Technology program.

After Being Accepted to the Program

Surgical Technology students must be in good physical and mental health. After acceptance into the program, students are required to

- Carry and maintain health insurance
- Have physical examination
- Submit results of required lab tests and immunizations and drug screen
- Submit certificate in Basic Life Support for Health Care providers throughout the program
- Submit results of Criminal History Record Information (CHRI), Child and Elder Abuse History Clearance, and FBI Clearance.

Deadlines

In order to be considered, applicants must submit an application and all transcripts by February 1 for the fall semester. Applications received after these dates will be reviewed on a space available basis.

Program Goals

To produce graduates:

- who complete the program objectives and associated Surgical Technology competencies.
- who have a broad knowledge base and the intellectual skills enabling the Surgical Technologist to embrace lifelong learning.
- who protect themselves, peers, co-workers, and patients from communicable disease and are concerned with patient safety.
- who are competent to pass the Certification for Surgical Technologist's examination within one year of completing the program.
- who meet or exceed the needs of their employers.
- who have been prepared as competent entry-level surgical technologists in the cognitive (knowledge) psychomotor (skills), and affective (behavior) learning domains.
- to prepare competent entry-level surgical technologists in the cognitive (knowledge) psychomotor (skills), and affective (behavior) learning domains.
- have a broad knowledge base.
- Upon completion of the program students must demonstrate entry level proficiency in all areas of general surgery and specialty procedures. At a minimal level the student must document a total of eighty (80) procedures in the first scrub (solo) role or with assist. Fifty-five (55) of these procedures must be in the five core areas of General, Orthopedics, Otorhinolaryngology (ENT), Gynecology and Genitourinary (GU). The remaining twenty-five (25) procedures will be in the specialty areas, such as: Cardiothoracic endoscopy; Ophthalmology; Oral and maxillofacial; Plastic and Reconstructive; Neurosurgery; Cardiothoracic; Peripheral Vascular. A graduate of the Surgical Technology Program must be prepared to show evidence of eighty (80) procedures in order to sit for the credentialing examination. Clinical Case Requirements

for the surgical technology students will meet the minimum levels: This includes 80 cases first scrubbed (assisted or solo). At least 25 of these should be solo. Of the assisted cases out of these 80, ten (10) should be Level 1 core cases. Five (5) should be Level 1 Specialty cases. The rest of the assisted cases should be distributed across core and specialty areas. Of the 25 solo cases: ten (10) should be Level 1 Core cases. Procedures that are observed or scrubbed in a role where less than 70% of the 10 points of performance are documented DO NOT count toward meeting the clinical case requirements. This also includes assistant circulating duties.

- Pass their Certification for Surgical Technologist's examination within one year of completing the program.

Program Guidelines: Minimum

- Core: Level I-10; Level II-10; Level III-0
- Specialty: Level I-5; Level II-0; Level III-0
- Ratios: Cases: 80 with a ratio 55/25 (70%/30%)
- Total Independent: 25

Qualitative outcomes:

To produce graduates who:

- will attain proficient entry level surgical technologists skills.
- demonstrate competent patient skills.
- adapt to change.
- protect themselves, peers, co-workers, and patients from communicable disease and are concerned with patient safety.

Surgical Technology,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
BIOS 204	Human Anatomy and Physiology I	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
PSYC 103	Introduction to Psychology	3
SOCA 102	Cultural Anthropology	3
		16
	Second Semester	
BIOS 202	Microbiology	4
BIOS 254	Human Anatomy and Physiology II	4
ENGL 151C	English II	3
MATH 140	College Algebra	3
PHIL 202G	Ethics and Moral Problems	3
		17
	Third Semester	
SURG 101	Surgical Technology I	7
SURG 105	Surgical Technology II	5
		12
	Fourth Semester	
SURG 110	Surgical Technology III	9
----------	Elective	3
		12
	Summer Session	
SURG 115	Surgical Technology IV	9
		9
	Total Credits	**66**

- Completion of PHIL 202G satisfies the Writing Intensive (WI) requirement.
- Completion of both English I and English II in Computer-intensive sections (i.e. ENGL 101C and ENGL 151C) will satisfy the Computing requirement.

Career Potential: First Assistant Surgical Technologist, Sales Representative, Central Supplies/ Processing/Distribution, Supervisor of other Surgical Technologists, Certified Surgical Technologist (CST)

Theatre

Humanities & Social Sciences

Degree awarded: Associate in Arts

Program Narrative

The curriculum is designed to parallel the courses and experiences found in the first two years of a B.A. Theatre degree while providing the students opportunities to explore the various concentrations available in theatre arts.

Northampton graduates have transferred to a wide range of four-year institutions, including Temple University, DeSales University, Cedar Crest College, Albright College, Brooklyn College, University of Iowa, University of Missouri at Kansas City, and University of Connecticut.

Program Features

NCC Theatre produces four major productions each season in both the newly renovated 350-seat Lipkin Theatre and the 100-seat Norman R. Roberts Lab Theatre. In addition, there is a variety of ensemble, experimental, touring, and special

occasion productions mounted during the year. All NCC students are welcome to participate in productions.

The Theatre Department Faculty have diverse backgrounds and professional experience in acting, directing, technical theatre, design, performance studies, speech communications, oral interpretation, education outreach and children's theatre. The full-time faculty is augmented with a professional costumer, various guest directors, and adjunct faculty.

The program offers field trips to professional theatres in New York, New Jersey and the Philadelphia area, along with specialized workshops by visiting artists, and individual coaching of student auditions and presentations. All graduating students participate in a capstone showcase during their last semester. Graduates in good standing witha GPA of 3.0 or higher may be eligible to receive the Norman R. Roberts Theatre scholarship which is applied to their first semester at a transfer institution

Program Requirements

Before admission to the program, students must successfully complete a departmental interview and audition or presentation. Contact the admissions office at (610) 861-5500 for further information. Non-program students are welcome to enroll in any theatre class with the exception of Theatre Portfolio, CMTH 218.

Program Outcomes

Graduates of the program will:

- Demonstrate an understanding of theatre arts as a creative expression that reflects the diversity of human experiences.
- Demonstrate an understanding of the theatrical conventions and cultural/historical backgrounds behind a cross-section of plays and productions.
- Demonstrate theatre practitioners' methods and skills in the collaborative and creative process.
- Begin a lifelong participation in theatre as both audience and artist.

Theatre,

Associate in Arts Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 110	Introduction to Theater	3
CMTH 111	Acting I	3
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
MATH___	Mathematics Elective (QL)	3
		15
	Second Semester	
ARTA 101	Art History Survey	3
CMTH 115	Technical Theatre	3
CMTH 189 or	Stage Voice and Movement or	1
CMTH 190 or	Stage Production or	
MUSC 130 or	Chorus or	
DANC 1__	any 1 credit DANC course	
CMTH 105	Public Speaking	3
ENGL 151C	English II (Literature Option)	3
PSYC 103	Introduction to Psychology	3
		16
	Third Semester	
CMTH 211G	Plays: Classical to Contemporary	3
CMTH 212 or	Acting II or	
CMTH 117	Stagecraft	3
CMTH 189 or	Stage Voice and Movement or	1
CMTH 190	Stage Production + or	
MUSC 130 or	Chorus or	
DANC 1__	any 1 credit DANC course	
----------	Science Elective (SCI) ++	4
----------	Social Science: Societies and Institutions over Time Elective (SIT)	3
		14
	Fourth Semester	
CMTH 206	Directing	3
CMTH 218	Theatre Portfolio	1
ENGL 2__G	Literature Elective (WI) +	3
MUSC 101	Introduction to Music	3
CMTH___	Television/Film Elective +++	3
----------	Transfer Elective	3
		16

Total Credits 61

+ Literature Elective options: ENGL 203 (Shakespeare) is recommended; but any ENGL 2xxG, Writing Intensive, literature course is acceptable.

++Science Elective options: BIOS 105 (Contemporary Biology) or BIOS 160 (Human Biology) is recommended; but any four-credit lab science course may be taken.

+++ Television/Film Elective options: CMTH 170 (Television Production), CMTH 180 (Multimedia Production), or CMTH 240 (Portable Video Techniques) are recommended; but CMTH 103 (Mass Communication), CMTH 126 (The Communication Arts), and CMTH 220 (Introduction to Film) may be taken.

- Computer requirements are satisfied by the combination of ENGL 101C plus ENGL 151C (computer intensive sections.)

Career Potential: Transfer program for actors, technicians, designers, directors, and educators. Preparation for entry level employment in Theatre Arts. Skills and Experience to qualify for internships leading to further training and future employment.

Veterinary Technician

Allied Health & Sciences

Degree awarded: Associate in Applied Science

Program Narrative

If you love animals and want a career that keeps you in constant contact with them, being a Veterinary Technician is an affordable and accessible way to achieve your goal. Veterinary technicians are animal care professionals. Vet techs are knowledgeable in the care and handling of various species, basic principles of normal and abnormal life processes, laboratory and clinical procedures and veterinary medical and surgical nursing.

Certified veterinary technicians find employment in small and large animal veterinary facilities, the pet food industry, specialty practices, diagnostic labs, pharmaceutical research centers, zoo and wildlife organizations, and educational institutions. The job opportunities are numerous and varied. With more Americans than ever sharing their homes with companion animals, the need for formally trained veterinary technicians in veterinarian practices in particular continues to grow.

Working jointly with Lehigh Carbon Community College, Northampton's Veterinary Technician program will provide you with all the necessary coursework, hands-on training, guidance and experience you need to begin an exciting career working with animals.

Graduates of the program are prepared to sit for the veterinary technician national board examination. Students that pass the exam may obtain certification. This program has received full accreditation from the American Veterinary Medical Association.

Program Features

Northampton's program provides academic and practical experience through a combination of veterinary technology and general education core courses. One-third of veterinary technology courses include laboratory experience including exposure to small, large and exotic animal species.

The culminating experience of the program is a summer externship experience during which students can practice their clinical skills at veterinary hospitals. Instructors in the program are practicing veterinarians and veterinary technicians working in the field.

Classes are held on the NCC and LCCC campuses. There is a clinical science laboratory on the Northampton campus and a Veterinary Training facility adjacent to the LCCC campus provided exclusively for the veterinary technician students. Classes are offered during the day and the program takes 2 full years (fall, spring and summer to complete).

Program Requirements

Minimum requirements for acceptance into the program include:

- High school Biology (with a lab) with a grade of B or better.
- High school Algebra I and II with grades of C or better.
- A minimum GPA of 2.5.
- College courses may also satisfy these requirements.
- An interview, by invitation, will also be required.

Preferred application deadline is 2/1 for the fall semester

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate competence in performing and engaging in office and hospital procedures, client relations and communication.
- Demonstrate proficiency working in the pharmacy and understand and utilize pharmacologic concepts.
- Safely and competently engage in medical nursing.
- Safely and competently engage in surgical nursing.
- Safely and competently engage in anesthetic nursing.
- Competently perform laboratory procedures.
- Safely and competently perform diagnostic imaging.
- Competently perform laboratory animal and exotic patient husbandry and nursing.

Veterinary Technician,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
CMTH 102	Speech Communication	3

CHEM 135	Chemistry of Life	4
ENGL 101C	English I	3
VETC 101	Veterinary Anatomy and Physiology	4
VETC 110	Introduction to Veterinary Technology	2
		16
	Second Semester	
BIOS 202	Microbiology	4
ENGL 151C	English II	3
VETC 115	Animal Management and Nutrition	2
VETC 120	Veterinary Parasitology	2
VETC 125	Veterinary Clinical Laboratory Techniques	4
		15
	Summer Session	
VETC 210	Large Animal Clinical Procedures	3
		3
	Third Semester	
MATH 120	Nature of Mathematics	3
VETC 215G	Animal Disease	3
VETC 218	Veterinary Pharmacology and Anesthesia	3
VETC 220	Small Animal Clinical Procedures	3
----------	Arts and Humanities Elective (AH)	3
		15
	Fourth Semester	
VETC225	Veterinary Radiology and Surgical Nursing	4
VETC228	Lab Animal Science and Exotics	4
----------	Social Science: Societies and Institutions over Time (SIT) +	3
----------	Social Science: Scientific Study of Human Behavior Elective (SSHB)++	3
		14
	Summer Session	
VETC 230	Veterinary Technician Externship	4
		4
	Total Credits	**67**

+ It is recommended that students take SOCA 102 as the Social Science: Societies and Institutions over Time (SIT) Elective; this also satisfies the Diversity (D) requirement.

++ It is recommended that students take PSYC 103 as the Social Science: Scientific Study of Human Behavior (SSHB) Elective.

- One course should be designated as Diversity (D).
- Completion of VETC 215G satisfies the Writing Intensive (WI) requirement.

Career Potential: Veterinary Technician, Biologic Research Labs, Lab Animal Technician, Small Animal Practice, Large Animal Practice, Exotics and Specialty Practices, Zoos, Wildlife Rehabilitation Centers, Pharmaceutical Companies, Teaching Institutes, Diagnostic Labs, Aquariums, Animal Shelters, Animal Feed Companies

Web Development

Business & Technology

Degree awarded: Associate in Applied Sciences

Program Narrative

Web sites are indispensable tools for every aspect of business. If you're interested in being a part of this growing field of employment, you'll want to secure the right set of skills. The most attractive job candidates have the ability to design the look also to program the technical aspects of sites. We've designed our Web Development program to train students for both the creative and technical sides of the job.

Our program is geared toward gaining employment upon graduation, rather than transferring to a four-year college. Upon graduation students will be equipped with the skills to qualify for positions such as web developer, web programmer, web designer, interactive web developer, web application developer, and director of web services.

Program Features

The Web Development AAS Program offers the student a strong educational core focused on design and programming for the web. Students develop the skills necessary to develop and maintain robust, well-designed, interactive and dynamic web sites. Students study client-side scripting, server-side scripting, object-oriented programming and database systems as a means to develop programming skills. Courses such as Computer Graphics, Introduction to Web Design, Web

Animation with Flash, Interactive Programming with Flash ActionScript give students the chance to develop their design skills.

In your final semester, you will develop a portfolio in Advanced Web Portfolio and create a functional dynamic web site in the capstone course, Advanced Web Technologies. The student portfolio and capstone project will be key tools in your job search.

This program can be completed in two-years of full-time study with a combination of day and evening courses.

Program Outcomes

Graduates of the program will:

- Develop effective approaches to solving problems related to web site development.
- Analyze user needs to determine technical requirements for web site creation.
- Design, build, and/or maintain aesthetically pleasing web sites using WYSIWYG editors and graphic design tools, with a focus on usability.
- Develop proficiency with programming, scripting languages, and database design techniques needed for interactive dynamic web applications.
- Exhibit proficiency in both design and technical aspects of web design.

Web Development,

Associate in Applied Science Degree

Course Code	Course Title	Credits
	First Semester	
ARTA 170	Computer Graphics	4
CISC 100	Computer Technology I	4
CMTH 102	Speech Communication	3
ENGL 101C	English I	3
----------	General Education Elective	3
		17
	Second Semester	
ARTA 130	Introduction to Web Design	3
ARTA 180	Digital Design & Typography I	3
CISC 128	Client-side Scripting	4
ENGL 151	English II	3
MATH___	Mathematics Elective (QL) ++	3
		16
	Third Semester	
ARTA 132	Web Animation with Flash	3
ARTA 240	Advanced Web Site Design	3
CISC 158	Server-side Scripting	4
CISC 270	Data Base Systems	4
----------	General Education Elective	3
		17
	Fourth Semester	
ARTA 136	Interactive Programming with Flash ActionScript	3
CISC 150	Object-Oriented Programming	4
CISC 201	Advanced Web Technologies	4
----------	General Education Elective	3
----------	Elective +	3
		17
	Total Credits	**67**

+ Suggested elective choices: BUSA 131, ARTA 181.

++ Mathematics Elective options: MATH 140, 145, 150, 160, 165, 175, 176, 180, 181, 202, 210, 211.

- For the General Education Electives, students must take three courses from at least two of the following areas: Arts & Humanities (AH); Social Science: Society and Institutions over Time (SIT) or Social Science: Scientific Study of Human Behavior (SSHB).
- One course should be designated as Diversity (D).
- One course must be Writing Intensive (WI).

Career Potential: Web Application Developer, Web Designer, Web Programmer, Web Developer, Webmaster, Internet Developer

Web Site Design

Humanities & Social Sciences

Specialized Diploma conferred

Program Narrative

This specialized diploma 16-credit program provides hands-on training in designing compelling and functional web sites. The program is taught in NCC's state-of-the-art Macintosh computer lab. As a student, you'll work with the same top line professional graphic designer software used at major companies, advertising agencies, and corporate communication departments. By the time you complete the

program, you will have designed at least one fully functional web site to be used as a portfolio piece.

The Web Site Design program introduces you to the full cycle of creative web site design and development, as it is most commonly found within industry. You will take your original design concepts from PhotoShop and Illustrator into ImageReady for processing, and then into Dreamweaver for building a finished web site. Working with Dreamweaver's powerful WYSIWYG (What You See Is What You Get) interface, you'll quickly learn to create interactive web sites, including such features as imagemaps, Frame-sets, Cascading Style Sheets (CSS), forms, roll-overs, pop-up windows, sniffers and DHTML. You will also learn to use Flash to enhance your web sites with animation, video, sound and increased interactivity.

Students applying for admission must be knowledgeable about either Windows or Macintosh operating systems and have some working knowledge of Adobe PhotoShop and Illustrator.

Program Features

Course work provides hands-on instruction in basic HTML coding and the use and understanding of current web authoring applications, and will not focus on the use of HTML.

Your web design skills will be developed using Macintosh computers, as well as current scanning, printing and photography hardware in Northampton's well-equipped digital lab. Your assignments will give you practical experience in solving design problems for the Web. You'll also benefit from close student-teacher instruction, as well as interaction with professional Web designers.

Program Outcomes

Graduates of the program will:

- Understand the basic concepts and use of HTML scripting language.
- Know how to use current Web design authoring software.
- Know how to optimize graphic files for the Web.
- Know how to use a basic digital camera to capture content for the Web.
- Understand copyright laws as they apply to Web design.
- Understand the history and development of the World Wide Web and the Internet.
- Know how to place a Web site on line using FTP software.
- Know how to test and monitor Web sites that are on line.
- Know how to "tweak" Web sites for viewing on current Web browsers.
- Know how to use Flash ActionScript programming.

Web Site Design,

Specialized Diploma

Course Code	Course Title	Credits
ARTA 130	Introduction to Web Site Design	3
ARTA 132	Web Animation with Flash	3
ARTA 136	Interactive Programming with Flash ActionScript	3
ARTA 170	Computer Graphics	4
ARTA 240	Advanced Web Site Design	3
	Total Credits	**16**

Career Potential: Web Designer

Welding

Business & Technology

Specialized Diploma conferred

Program Narrative

Northampton's Welding program is noted for being a strong quality-oriented welding and materials program. We are proud that we have produced some of the finest welders and weld joint analyzers in the regional industry. Northampton's program emphasizes problem solving and material and joint analysis rather than simply rote welding exercises. As a result, we've earned a strong reputation and the respect of employers throughout the region.

This program will be of benefit to those who are seeking a career re-training, advancement to a supervisory position, or a career in weld inspection. It is also useful for welders in need of updated skills and certification.

Program Features

As a student in Northampton's Welding program you will gain key welding and problem solving skills. You'll also benefit from proven instructional techniques focused on analysis, gain individualized hands-on instruction, achieve a competency-based academic certification, and obtain preparation for AWS welder certification.

Your skills will be evaluated throughout each course with written exams and lab projects as well as a final comprehensive exam. Our welding and testing labs are located at the College's LVIP IV site, located near Main Campus.

Courses can be conveniently taken during the evening in the fall, spring or summer. The program can be completed in three semesters by taking courses during the evening. All of the WELD courses can be applied as pre-requisites or technical electives in the AAS degree in Applied Quality and Standards.

Contact the Admissions Office at 610-861-5500 for further information.

Program Outcomes

Graduates of the program will:

- Demonstrate an ability to work independently and collaboratively.
- Demonstrate safe welding and thermal cutting practices.
- Produce welds that consistently meet industry, American Welding Society (AWS) and pressure vessel standards.
- Analyze and present data in an acceptable and standardized manner.
- Solve common weldability problems.
- Demonstrate a basic framework of technical vocabulary and graphics interpretation applicable to the area of welding and fabrication.
- Demonstrate observational, integrative, and synthetic skills.
- Demonstrate the proper use and care of common welding equipment.
- Apply basic defect prevention philosophy and techniques to achieving weld integrity.
- Describe the key process elements and technology commonly found in industrial welding and cutting processes.

Welding Technology,

Specialized Diploma

Course Code	Course Title	Credits
WELD 100	Welding Processes I	2
WELD 101	Welding Processes II	1
WELD 102	Welding Processes III	1
WELD 103	Welding Processes IV	1
WELD 115	Weld Symbol Applications	2
WELD 120	Gas Tungsten Arc Welding Processes	2
WELD 121	Semiautomatic Welding Process	2
WELD 123	Advanced Plate Welding Processes	5
WELD 124	Advanced Pipe Welding Processes	2
	Total Credits	**18**

Career Potential: Welder

Word Processing Specialist

Business & Technology
Specialized Diploma conferred

Program Narrative

Your education could give you a competitive edge when pursuing employment in an office setting. Northampton's Office Administration diploma programs are designed to prepare you to enter a modern office setting in a short time frame. The programs offer career-specific course work for the student wishing to complete their studies within two semesters. Each program provides course offerings that prepare you to work as a team player in a specialized office environment.

Your studies will state-of-the-art office equipment and computer software. You'll gain the marketable skills required to work effectively with other people in an office environment. We emphasize development of professional attitudes, values, and ethics. As you progress through the program, you'll gain critical thinking, priority setting, and decision-making skills needed in today's quality-oriented business environment.

Program Features

This program prepares you for responsibilities and challenges expected of an entry-level word processing specialist in an office environment. You'll gain proficiency in technology, human relations, time management and organizational skills. You'll also improve your decision-making, and creative thinking. Your training will include word processing, spreadsheet, database, graphics, desktop publishing, and communications software applications.

Our graduates have an excellent record of gaining employment upon graduation. Our employer surveys indicate a very high degree of satisfaction with graduates of the program. Graduates of this diploma program often go on to pursue the Office Administrative Assistant, Medical Administrative Assistant, or Legal Administrative degree after obtaining employment.

This program can be completed in the day or evening, on a full- or part-time basis.

Program Outcomes

Graduates of the program will:

- Demonstrate an ability to work independently and collaboratively in an automated office.
- Possess the necessary technical skills operating state-of-the-art equipment and current software including the integration of word processing, database, spreadsheet, desktop publishing.
- Exemplify professionally acceptable attitudes, values, and ethics needed in an office setting.
- Procure an appropriate position in business with a commitment to life long learning to achieve professional growth.

Word Processing Specialist

Specialized Diploma

Course Code	Course Title	Credits
	First Semester	
OFAD 111 or	Trends in Office Automation or	

OFAD 147+148+149	Intro to Windows + Learning the Internet + Powerpoint	3
OFAD 121	Keyboarding II on Microcomputers	3
OFAD 125	Word Processing Applications	3
OFAD___	OFAD Elective	3
		12
	Second Semester	
ARTA 171	Desktop Publishing	4
OFAD 131	Machine Transcription	3
OFAD 201	Advanced Document Production	3
OFAD 230	Modern Office Procedures	3
OFAD 205	Microsoft Office Software Applications	3
		16
	Total Credits	**28**

Career Potential: Office Support Specialist, Information Processor, Customer Service Representative, Publications Representative

Accounting (ACCT)

ACCT 100 Accounting for Non-Accountants (Cr3) (3:0)

Introduces financial concepts to non-business majors; emphasizes the preparation of internal and external reports for use in the decision making process of business entities. Only one of the following: ACCT 100 or ACCT 101 may be applied to a degree. ACCT 100 cannot be used as a substitute for ACCT 101. Also available through Online Learning.

ACCT 101 Financial Accounting I (Cr3) (3:0)

Analysis and interpretation of basic accounting structure, systems, and controls applicable to various business entities. Only one of the following: ACCT 101 or ACCT 100 may be applied to a degree. ACCT 100 cannot be used as a substitute for ACCT 101. Also available through Online Learning.

ACCT 151 Financial Accounting II (Cr3) (3:0)

Analysis and interpretation of business organizations, relating to earnings, reserves, investments, costs, budgeting, and taxes. Prereq. - ACCT 101. Also available through Online Learning.

ACCT 155 Accounting for Managers (Cr3) (3:0)

Specialty accounting course designed for the A.A.S. in Business Management. Focus on accounting as part of the management information system, based on the information needs of managers and small business owners; using accounting information for decision making, planning, directing, controlling, motivating, and evaluating. Prereq. - ACCT 101. Also available through Online Learning.

ACCT 160 Accounting Applications (Cr3) (3:0)

Payroll accounting including personnel and payroll records, Fair Labor Standards Act, phases of the Social Security Act, and Federal Income Tax Withholding Laws; personal income tax accounting including preparation of Form 1040, and related tax schedules such as A, B, C, D, E; Turbo Tax Accounting, a self-paced, step-by-step environment in which students use QuickBooks to create financials and other reports; all homework assignments covered using Turbo Tax and QuickBooks. Pre- or coreq.- ACCT 151. Also available through Online Learning.

ACCT 201 Intermediate Accounting I (Cr4) (4:0)

Corporate accounting dealing with the principles of financial accounting theory, the development of accounting theory, analysis of financial statements, cash and markets, securities, receivables, inventories, current liabilities, long term liabilities and operational assets. Prereq. - ACCT 151. Also available through Online Learning.

ACCT 202 Managerial Accounting (Cr3) (3:0)

Emphasizes the uses of accounting information for managerial decision making, planning and control, and cost accumulation and allocation. Prereq. - ACCT 101. Also available through Online Learning.

ACCT 205 Cost Accounting (Cr3) (3:0)

Cost concepts and procedures relating to job cost systems, process cost systems and standard costs. Prereq. - ACCT 151. Also available through Online Learning.

ACCT 220 Income Tax Accounting I (Cr3) (3:0)

Review of the Internal Revenue Code applicable to individual income tax returns. Prereq. - ACCT 151. Also available through Online Learning.

ACCT 251 Intermediate Accounting II (Cr3) (3:0)

Long-term investments; acquisition, depreciation, retirement, and depletion of plant assets; intangible assets; bonds, leases, corporate capital; stock rights and warrants; treasury stock and accounting and inflation. Prereq. - ACCT 201. Also available through Online Learning.

ACCT 255 Principles of Auditing (Cr3) (3:0)

This course is an analysis and appraisal of current auditing principles and procedures involving staff organization, professional ethics and legal responsibility, internal control, audit programs and working papers and original record examination. Students are required to complete a comprehensive audit case study. Prereq.- ACCT 201. Also available through Online Learning.

ACCT 291 Special Studies in Accounting (Cr1)

See Statement on Special Studies. Offered on demand.

ACCT 292 Special Studies in Accounting (Cr2)

See Statement on Special Studies. Offered on demand.

ACCT 293 Special Studies in Accounting (Cr3)

See Statement on Special Studies. Offered on demand.

Architecture (ARCH)

ARCH 100 Architectural History I - Antiquity to 1870 (Cr3) (3:0)

Understanding the physical environment through the study of dominant architectural attitudes, forms, and functions as influenced by the social, cultural, historical and philosophical determinants of architecture through the ages, its continuity with the past, and its relation to the present; methods of historical inquiry and comparative analysis; emphasis on classical and neoclassical periods.

ARCH 101 Architectural Graphics I (Cr3) (2:2)

Basic skills of architectural communication; developing design drawings and visualization skills and their relationship to the design process; freehand and drafted methods including projections in orthographic and paraline drawings, shades and shadows; emphasis on freehand perspective drawing as a design tool; paraline and perspective drawings on the computer as a means of enhancing freehand skills; model making skills. Coreq.- ARCH 110.

ARCH 110 Architecture Design Studio I (Cr3) (2:2)

First studio in four-semester foundation design studio sequence; fundamental principles of design, design vocabulary and design process; studio projects including two and three dimensional abstract exercises architectonic in nature; organizing systems in accompaniment with the study of historical precedents; emphasis on graphic communication and model making. Coreq. - ARCH 101.

ARCH 121 Architectural Graphics II (Cr3) (2:2)

Continued development of the graphic language of architecture; hand skills with orthographic drawings extended to the formal language of architecture and developed into formal plans, elevations, sections and details; linework, notation, dimensioning, material indication and sheet layout; different types of drawings used during the design process; computer and hand skills as tools in the exploration of diagrammatic and other analytical drawings; model making. Prereq. - ARCH 101 and 110, both with a C or better; Coreq. - ARCH 150.

ARCH 150 Architecture Design Studio II (Digital) (Cr3) (2:2)

Digital studio making transition from abstract principles to architectural projects adding issues of function, space, surface and structure; continued emphasis on understanding and developing design process and historical precedent; basic programmatic research; use of the program Archicad in the digital environment for fundamental techniques required to visualize three-dimensional spaces and objects as an integral part of the design process; development of ability to create computer generated design process drawings/models including perspective, plans, sections, isometrics and axonometrics as a means to solving design problems. Formerly ARCH 205. Prereq.- ARCH 101 and 110, both with a C or better.

ARCH 155 Architectural History II - 1870 to Present (Cr3) (3:0)

History and theory of the modern era; methods of historical inquiry and comparative analysis; emphasis on the modern movement, particularly recent movements in architecture and their impact on current thinking.

ARCH 200 Professional Internship (Cr3) (0:0:11)

Practical office experience for students who qualify for sophomore standing; work under the direction of an employer with a professional degree in architecture; arrangements made through the architecture department. Prereq. - ARCH 121, 150, and 155, all with a C or better.

ARCH 204 Design & Analysis of Structural Form (Cr3) (2:2)

Fundamental concepts of statics, forms and forces for a spectrum of architectural structures; structural analysis incorporating both graphic representation and numeric investigation, with particular

emphasis on the impactof structure on design; study of structures through full scale model building. Prereq. - MATH 145.

ARCH 210 Architecture Design Studio III (Cr5) (2:6)

Continued development of design vocabulary and design process; further development of architectural projects considering program, site and context reinforced by historical precedent; use of materials and structure and their impact on design; emphasis on conceptualization and the importance of the building 'parti'; traditional model making; appropriate use of both traditional graphic representation as well as the computer as a design tool during the design process; written research papers on design problems and historical precedent as part of the exploration process. Prereq. - ARCH 121, 150, and 155, all with a C or better.

ARCH 214 Architectural Materials & Methods of Construction I (Cr3) (3:0)

First course in two-term sequence of building technology; conceptual framework integrating construction into the design process; properties of materials used in construction, their appropriate use, and impact on design; methods of construction in wood, masonry, concrete and steel. Formerly ARCH 103. Prereq. -ARCH 121 with a C or better.

ARCH 215 Advanced Digital Analysis (Cr3) (2:2)

Advanced computer design and analysis focused on complex three dimensional modeling, including animations and virtual reality 'walk throughs' using Archicad and other modeling software; building of 3D models as both a design tool and an analytical tool; 3D models to analyze structure, circulation, volume, enclosure and zoning in both historical and current projects as a precursor to modeling studio projects. Prereq. - ARCH 150 with a C or better.

ARCH 250 Architecture Design Studio IV (Cr5) (2:6)

Resolution of more complex architectural programs with the context of a community-wide environment; broad study of a local rural community, narrowing to a study of the main hub of activity, usually 'Main Street', narrowing further toan individual architectural problem important to the community; project selected as subject of the semester; site analysis and fundamental urban design issues; class publication illustrating class involvement and understanding of community design issues; studio with a physical presence in the community with student drawing and models available to citizen review, student interaction with members of the community. Prereq. - ARCH 210 with a C or better.

ARCH 254 Architectural Materials & Methods of Construction II (Cr3) (3:0)

Second course in sequence; systems integration: foundation/ wall, wall/window, floor/wall, wall/roof; integration of building assemblies including structural, mechanical and electrical and their impact on design and the design process; overview of codes, standards, safety, accessibility, documentation and specifications. Prereq. - ARCH 214 with a C or better.

ARCH 265 Digital Production Drawing (Cr3) (2:2)

Study of architectural working drawings; introduction to digital media as a basis of creating a complete set of construction documents from a schematic design; the process of working drawing development; determining the required drawing necessary to express the schematic design to a constructed project; development of the required drawings focusing on standard drawing conventions and methods currently in practice. Prereq.- ARCH 101 with a C or better.

ARCH 291 Special Studies in Architecture (Cr1)

See Statement on Special Studies. Offered on demand.

ARCH 292 Special Studies in Architecture (Cr2)

See Statement on Special Studies. Offered on demand.

ARCH 293 Special Studies in Architecture (Cr3)

See Statement on Special Studies. Offered on demand.

ARCH 294 Special Studies in Architecture (Cr4)

See Statement on Special Studies. Offered on demand.

Art (ARTA)

ARTA 100 Art and Visual Thinking (Cr3) (3:0)

Prepares students to use art as a visual language to communicate feelings and knowledge, to use art as a process for understanding one's self and others, to understand the value of imagery in the community, and to interpret the work of artists in a historical, cultural and personal context. Also available through Online Learning.

ARTA 101 Art History Survey (Cr3) (3:0)

Major trends and influences in western art from early man to present; emphasis on style and form. Also available through Online Learning.

ARTA 107 Drawing I (Cr3) (1:5)

Basic principles of representing three-dimensional objects on a two-dimensional surface; drawing media and techniques; visual language in drawing.

ARTA 110 Principles of 3-D Design (Cr3) (1:5)

This course introduces the theory and application of three-dimensional design with an emphasis on the elements of art and principles of organization as the foundation of successful visual problem solving and creativity. Projects cover a variety of media and techniques; technical, perceptual, and analytical skill development; and contemporary and historical art and design practices.

ARTA 111 Principles of 2-D Design and Color (Cr3) (1:5)

This course provides an introduction to the theory and application of two-dimensional design for the creation of pictorial space. The formal elements of art and principles of organization will be covered in depth with a special focus on the nature and properties of color. Students will be guided through a series of projects using a variety of dry, wet, digital and mixed media. Development of technical, perceptual, and analytical skills will be emphasized along with an understanding of historical and contemporary art and design practice.

ARTA 124 Drawing II (Cr3) (1:5)

Drawing the human figure; developing an awareness of proportion, composition, and design in expressive drawing involving the human form. Prereq. - ARTA 107 and 111.

ARTA 130 Introduction to Web Site Design (Cr3) (2:2)

Introduction to the skills, concepts and techniques necessary to design Web sites. Prereq. - ARTA170 or approval of instructor.

ARTA 131 Introduction to 3-D Computer Animation (Cr3) (2:2)

Introduction to computer animation and visual effects; model building, rendering, lighting, key-frame animation, and character animation; exploration of a variety of current computer animation software using state-of-the-art digital technology. Prereq. - ARTA170 or approval of instructor.

ARTA 132 Web Animation with Flash (Cr3) (2:2)

Designed to build on the skills and experiences learned in Introduction to Web Site Design. Major emphasis will be placed on creating graphics for web sites, use of Cascading Style Sheets, DHTML audio files, VR files and advanced web applications as cutting edge tools in web site design. Prereq. - ARTA 130.

ARTA 133 Advanced 3-D Computer Animation (Cr3) (2:2)

Designed to build on the skills, knowledge and experience gained in the Introduction to 3-D Computer Animation course. Emphasis will be placed on working with advanced 2-D and 3-D computer animation techniques and software for use in print, interactive multimedia and web site productions. Prereq.- ARTA 131.

ARTA 136 Interactive Programming with Flash ActionScript (Cr3) (2:2)

Introduction to programming in ActionScript, Macromedia Flash's native, object-oriented programming language, and is the companion to ARTA 132. It creates a visual and creative approach to learning computer programming and is intended for both creative and/or technical individuals. Topics covered include: ActionScript syntax and semantics, basic programming fundamentals, object-oriented programming in flash and creative scripting and interactivity. Prereq. - ARTA 132.

ARTA 138 Introduction to Video Game Design (Cr3) (2:2)

This course is an introduction to the basic technical and conceptual elements of video game design and provides a solid foundation for future work. Major emphasis will

be placed on understanding the gaming industry, the phases of the game development cycle, preparation of a game design document, and the creation of a simple 'mod' using a modern game engine. A working knowledge of personal computers, popular software, and the Internet is important for course success. Pre- or Coreq. - ARTA 131.

ARTA 139 Advanced Video Game Design (Cr3) (2:2)

This course examines advanced topics in video game design from a broad perspective, both in regard to theory and practice. In addition, the course presents an overview of best practices within the video game industry as well as an analysis of the more controversial issues within the field, including violence in video gaming and gender portrayals. Students will learn to create virtual characters, objects and environments using an integrated game development environment. Issues relating to gaming narrative structure and interactive storytelling will also be covered. Prereq. - ARTA 138.

ARTA 140 Advanced Web Portfolio (Cr3) (2:2)

Course is intended for advanced students in the specialized diploma in web design. Working independently and in collaborative teams, each student will develop a web-based portfolio showcasing work completed throughout their diploma program, as well as new pieces created during this course. In addition, advanced topics in web design and development will be covered, including server and client side scripting, introduction to databases, media integration, and a broad survey of current web technologies. Regarding technology and scripting: emphasis will be placed on best practices from a designer perspective. Prereq. - ARTA 130 or permission of instructor.

ARTA 151 Black and White Photography (Cr3) (1:5)

Introduction to 35mm camera work, black and white film and print processing; basic techniques of exposure, lighting and laboratory work; emphasis on technical/creative/aesthetic aspects of photography. Students must furnish their own manually adjustable 35mm cameras, bxw film and paper, matboard, and miscellaneous supplies. Formerly ARTA 251. Additional course fees: $20.00.

ARTA 158 Painting I (Cr3) (1:5)

Basic concepts, theories, and techniques of painting explored through still life, the figure, self portraiture, and working from photographs; emphasis on the development of observational painting skills and color mixing.

ARTA 161 Ceramics (Cr3) (2:4)

A basic introduction to the clay medium: earth, water, and fire. The techniques of hand building (pinch, coil, slab) wheel thrown forms, and clay/glaze technology will be covered. An awareness of traditional and contemporary approaches to ceramics will be emphasized. Additional course fees: $40.00.

ARTA 162 Sculpture (Cr3) (1:5)

Course provides a hands-on introduction to methods, techniques and aesthetics of sculpture. Students will be guided through a series of projects using a variety of traditional sculptural media such as wood, plaster, stone, metal, plastic, etc. Development of technical, perceptual, and analytical skills will be emphasized along with an understanding of historical and contemporary sculpture practices. Additional course fees: $30.00

ARTA 164 Printmaking (Cr3) (1:5)

This course is an introduction to the basic principles of printmaking and applies concepts of image making and editioning within the fine arts. Multiple techniques will be covered including collagraph, monoprint, linocut, drypoint , solarplate (relief, intaglio, protogravure), digital media, and non-adhesive book binding/folio creation. Foundation Design concepts, research methods and critiques will also be emphasized.

ARTA 170 Computer Graphics (Cr4) (2:4)

Introduction to computer graphics and basic design principles. Utilizing Adobe Photoshop and Illustrator software, students will learn the fundamentals of digital design, image editing/scanning and printing. Assignments, both in and outside of the classroom, will be contextually based, providing real world applications with each lesson.

ARTA 171 Desktop Publishing (Cr4) (2:4)

An introductory course in the use of Adobe InDesign and QuarkXPress software. Students will learn the basic concepts of page layout for print design, utilizing text, images, and graphics.

ARTA 180 Digital Design and Typography I (Cr3) (1:5)

Designed to introduce students to the visual and conceptual issues of graphic design and typography. Assignments investigate typography as an element of design whose form and purpose is to convey information in a structured, legible and expressive manner. Students will work with a variety of software applications as they develop their understanding of letterform, graphic design, Gestalt principles, and typographic organization. This course is a combination of lecture, demonstration and hands-on experience. Prereq.- ARTA 170.

ARTA 181 Digital Design and Typography II (Cr3) (1:5)

Designed to further develop and strengthen the skills and knowledge obtained in Digital Design and Typography I. Assignments are selected with the student's portfolio in mind and provide a variety of design challenges that will enhance the student's competitive power for industry needs. Special emphasis will be placed on typographic detail, vocabulary, the design process, presentation, assemblage, and problem solving in a "real world" context. This course concludes with a hardcopy build portfolio. Prereq.- ARTA 180.

ARTA 190 Creative Designs (Cr3) (2:2)

This course is designed to improve conceptual abilities as applied to design. Students will create innovative design projects, emphasizing best practices of the creative design process and visual problem solving. Focus will be on the use of creative thinking techniques and research typically involved with producing a workable design using an innovative approach. Prereq.- ARTA 170.

ARTA 204 Drawing III (Cr3) (1:5)

This course advances concepts, theories, media and techniques developed in Drawing II, while continuing to explore classic themes. Emphasis is on continuing development of core drawing and design skills, technique and content research, more advanced work with the figure, and the creative challenges to work inventively with various drawing media. Prereq.- ARTA 124.

ARTA 210 Package Design (Cr3) (2:2)

This is an advanced course, exploring three-dimensional graphic design, processes, and techniques and branding theories. This course specifically defines and identifies visual communication for package structure and use of typography, color and images of three-dimensional prototypes. Students will be challenged with problem-solving techniques as applied in scale, material, form and function. Prereq.- ARTA 181.

ARTA 220 Media Art (Cr3) (2:2)

Combination of elements, approaches and techniques from fine art and applied art with cutting-edge digital technology; theory, methodology and professional practices covered through lectures, in-class hands-on practice and outside assignments; students approach projects conceptually, synthesizing original integrative solutions, which hopefully expand existing conventions; concepts include collaboration, iteration, metaphor, art as commodity, making vs. finding, perfection vs. perfectionism, and creativity and transcendence. Formerly ARTA 257. Prereq. - ARTA 170.

ARTA 226 Painting II (Cr3) (1:5)

Advanced problems in still life, the figure, self-portraiture, and abstraction building on foundation skills from Painting I; discussion and exploration of historical and contemporary approaches to painting to provide an informed basis for the development of personal style and direction. Formerly ARTA 126. Offered on demand. Prereq.- ARTA 111 and 158.

ARTA 230 New Media Theory and Practice (Cr3) (2:4)

This course will introduce critical concepts and hands-on skills in the current New Media field. Students will discuss topics related to the World Wide Web, mobile devices, DVDs, CD-ROMs, digital gaming, film and animation. Students will be equiped with the skills necessary for storyboarding, script writing, character development, theories and practices used in pre-production, and creating a film or animation. Prereq.- ARTA 170.

ARTA 231 New Media Production (Cr3) (1:5)

A continuation of ARTA 230, New Media Theory and Practice. Students will form groups, devise a production strategy and create an animated short based on a storyboard they have chosen. Students will learn production techniques, including lighting, sound, character building, quick shorts, creating scenes, editing and final production. Prereq.- ARTA 230.

ARTA 240 Advanced Web Site Design (Cr3) (2:2)

An advanced course focusing on interface design, web usability, standards-based design, optimization, and cutting-edge interactivity. Students will be exposed to theories of information architecture, which aid in creating more functional, dynamic websites. Students will build on the skills presented in Introduction to Web Design to create functional, compliant, aesthetically pleasing websites. Prereq.- ARTA 130.

ARTA 256 Visual Communication: History, Theory and Practice (Cr3) (1:5)

Survey of the history, theory and practice of visual communication from the invention of alphabets and writing to electronic new media. Emphasis is placed on understanding key inventions, techniques, historical and social movements and individuals in the evolution of human visual communications. Prereq. - ARTA 101,111, and 180.

ARTA 260 Individual Studio/ Professional Practices (Cr4) (1:8)

An intensive studio experience for personal development and growth, that culminates in a final, semester-end exhibition. The critique will be the core process where aesthetic awareness and creative issues unfold. Students gain knowledge of professional practices through visits to galleries, museums, and artists' studios; and meeting artists, dealers, critics, and museum staff; researching and writing about these experiences. Prereq.- ARTA 226 and 204.

ARTA 261 Advanced Ceramics (Cr3) (2:4)

This advanced exploration of the clay medium builds on the foundation skills acquired in ARTA 161 Ceramics. The relationship of technique to concept will be examined with an emphasis on craftsmanship. Wheel throwing, hand building, glazing, and firing techniques will be covered in greater depth. Coverage of contemporary issues in ceramics will help students develop a more informed aesthetic sensibility for the ceramic arts. Offered on demand. Prereq.- ARTA 161. Additional course fees: $60.00.

ARTA 269 Advertising/ Marketing Workshop (Cr1) (1:0)

Familiarizes students with the design process as it applies to advertising, marketing and the creative process; helps students gain a greater understanding of the important relationship between advertising/marketing strategy and effective design. Prereq. - ARTA 170 and 180.

ARTA 270 Professional Workshop (Cr1) (0:2.5)

This course is designed to assist Communication Design majors in becoming professional members of the new digital media design market; developing and assembling a portfolio - both in traditional and digital formats; designing and writing their resume; identifying job opportunities and preparing for job interviews; and using the new digital media for self-promotion. Guest speakers from various visual communication fields will critique and evaluate students' portfolios during scheduled class time and at a student portfolio-day presentation.

ARTA 282 Digital Photography (Cr3) (1:5)

This course is an introduction to digital photography using an Apple Macintosh computer and a variety of digital software and peripheral devices. The course presents an overview of best practices of digital photo capture (camera work), file organization, image manipulation, and storage and output devices. Prereq.- ARTA 170. Additional course fees: $50.00.

ARTA 285 Portfolio Workshop (Cr3) (2:2)

This course is the capstone course in Communication Design curriculum. This course will assist students in becoming professional members of the new digital media design market. Students will be revising, developing and assembling a portfolio in both hard-copy and digital formats. Guest speakers from various communication design fields will critique and evaluation students' portfolios during class time and at the final capstone portfolio-day presentation. Prereq.- ARTA 181.

ARTA 291 Special Studies in Art (Cr1)

See statement on Special Studies. Offered on demand.

ARTA 292 Special Studies in Art (Cr2)

See statement on Special Studies. Offered on demand.

ARTA 293 Special Studies in Art (Cr3)

See statement on Special Studies. Offered on demand.

Automotive Technology (AUTO)

AUTO 011 Automotive Service and Maintenance (Cr2) (1:2)

Use of special automotive tools, meters and shop reference materials; basic maintenance including front-end lubrication and inspection, brakes, wheel bearings, engine, cooling system, fuel systems, ignition and electrical systems; under hood routine maintenance checks, and safe use of vehicle lifting and hoisting mechanisms. Designed for the automotive student who has had limited exposure to the automotive service industry. Additional course fees: $10.00.

AUTO 101 Automotive Engines (Cr4) (3:2)

Operational principles of basic engine systems and overhaul of the automotive engine; emphasis on proper use of precision measuring instruments and rebuilding tools, ability to locate and interpret engine specifications, engine diagnosis, and correct repair procedures. Additional course fees: $10.00.

AUTO 103 Automotive Brakes (Cr3) (3:0)

Theory, principles of operation, and terminology of brake systems designs, emphasis on system inspection, accurate malfunction diagnosis, location and interpretation of specifications, proper use of special tools and machining equipment for disc/ drum and standard/power systems, and correct repair procedures. Additional course fees: $10.00.

AUTO 104 Automotive Suspension and Alignment (Cr3) (3:0)

Theory, principles of operation, and terminology of suspension system designs; emphasis on system inspection and accurate malfunction diagnosis, parts replacement procedures, location and interpretation of specifications, measuring and adjustment of alignment angles, wheel balancing, correct use of special tools and equipment, and correct repair procedures. Additional course fees: $10.00.

AUTO 105 Automotive Electrical Systems (Cr3) (3:0)

Electricity and magnetism, basic DC circuits used in automotive electrical systems, use of meters, wiring diagrams, automotive wiring repair, location and interpretation of specifications, semiconductors, microprocessors and selected electronic devices used in automobiles. Additional course fees: $10.00.

AUTO 121 Automotive Air Conditioning & Heating Systems (Cr3) (3:0)

Operation, diagnosis, and servicing of auto air conditioning systems and components; emphasis on electronic climate control system troubleshooting and repair. Additional course fees: $10.00.

AUTO 125 Advanced Automotive Electronic Systems (Cr3) (3:0)

Theory, operation, diagnosis and repair of starting, charging, ignition, computer control and electrical-electronic accessory systems to include electronic cruise control, body controls, driver information systems, and entertainment systems. Prereq. - AUTO 105. Additional course fees: $10.00.

AUTO 145 Winter Practicum I (Cr2) (0:0:20 hrs/wk practicum)

Work experience at a sponsoring dealership, approved automotive service facility or the advanced technology lab on campus; tasks consistent with the course work of the preceding semester. Pre- or coreq. - AUTO 103, 104 and 105. Additional course fees: $10.00.

AUTO 175 Summer Practicum (Cr4) (0:0:320 practicum)

Work experience at a sponsoring dealership, approved automotive service facility or the advanced technology lab on campus; tasks consistent with the course work of

the preceding semester. Pre- or coreq. - AUTO 101, 103, 104, 105, 121 and 125. Additional course fees: $10.00.

AUTO 203 Automotive Shop Management Practices (Cr3) (3:0)

Principles of operation for today's automotive repair center to include staffing, customer relations, personnel management, schedule of work and workers, parts inventory control procedures, job costs, supervisor roles in cost control, business law with special applications to the automotive repair field, marketing, and advertising the automotive repair services. Prereq.- AUTO 175.

AUTO 211 Automotive Fuel and Emission Systems (Cr3) (2:2)

Theory, operation, diagnosis of malfunctions of electronically controlled automotive emission control systems; emphasis on location and interpretation of specifications, accurate diagnosis of malfunctions by proper use of test equipment, and correct repair procedures. Prereq.-AUTO 125 and 175. Additional course fees: $10.00.

AUTO 221 Advanced Engine Performance (Cr3) (2:2)

Diagnosis, adjustment, and repair of the systems which affect engine performance; emphasis on synthesizing skills learned in electronic systems, fuel and emission control systems courses, accurate use of diagnostic equipment, proper tune-up procedures, use of specifications and interpretation of test results to enable the rapid isolation of malfunctions of a particular system or combination of systems in the automobile. Prereq. - AUTO 105, 125 and 175; Pre-or coreq.- AUTO 211. Additional course fees: $10.00.

AUTO 224 Advanced Automotive Studies (Cr3) (3:0)

Topics related to recent developments or advanced systems currently in production on GM/ DaimlerChrysler vehicles. Prereq. - AUTO 101, 103, 104, 105, 121, 125 and 175. Additional course fees: $10.00.

AUTO 225 Mechanical Drive Train Systems (Cr4) (3:2)

Principles of operation, diagnosis, and repair of clutches, manual transmissions, drivelines, differentials, and front wheel drive units with emphasis on understanding the principles of torque multiplication and speed reduction through the use of gearing, location and interpretation of specifications, and correct troubleshooting and repair procedures. Prereq.- AUTO 125 and 175. Additional course fees: $10.00.

AUTO 226 Automatic Transmission Systems (Cr4) (3:2)

Theory of operation, diagnosis, maintenance, and overhaul procedures of the automatic transmission with a major emphasis on hydraulic systems and electronic controls used on automatic transmissions. Prereq.- AUTO 125 and 175. Additional course fees: $10.00.

AUTO 245 Winter Practicum II (Cr2) (0:0:20 hrs/wk practicum)

Work experience at a sponsoring dealership or approved automotive service facility; tasks consistent with the course work of the preceding semester. Prereq. - AUTO 125, 211, and AUTO/ ASEP/AUTC 221. Additional course fees: $10.00.

AUTO 291 Special Studies in Automotive Technology (Cr1)

See Statement on Special Studies. Offered on demand. Additional course fees: $10.00.

AUTO 292 Special Studies in Automotive Technology (Cr2)

See Statement on Special Studies. Offered on demand. Additional course fees: $10.00.

AUTO 293 Special Studies in Automotive Technology (Cr3)

See Statement on Special Studies. Offered on demand. Additional course fees: $10.00.

AUTO 294 Special Studies in Automotive Technology (Cr4)

See Statement on Special Studies. Offered on demand. Additional course fees: $10.00.

Automotive Technology Chrysler (AUTC)

AUTC 101 Chrysler Engines (Cr4) (3:2)

Operational principles for Chrysler engine systems and overhaul of Chrysler engines. Emphasis on proper use of precision measuring instruments and rebuilding tools, ability to locate and interpret engine specifications, engine diagnosis, and correct repair procedures. Additional course fees: $10.00.

AUTC 103 Chrysler Brakes (Cr3) (3:0)

Theory, principles of operation and terminology of Chrysler brake systems designs, emphasis on system inspection, accurate malfunction diagnosis, location and interpretation of specifications, proper use of special tools and machining equipment for disc/ drum and standard/power systems, and correct repair procedures. Additional course fees: $10.00.

AUTC 104 Chrysler Suspension and Alignment (Cr3) (3:0)

Theory, principles of operation and terminology of Chrysler suspension system designs; emphasis on system inspection and accurate malfunction diagnosis, parts replacement procedures, location and interpretation of specifications, measuring and adjustment of alignment angles, wheel balancing, correct use of special tools and equipment, and correct repair procedures. Additional course fees: $10.00.

AUTC 105 Chrysler Electrical Systems (Cr3) (3:0)

Electricity and magnetism , basic DC circuits used in Chrysler electrical systems, use of meters, wiring diagrams, automotive wiring repair, location and interpretation of specifications, semiconductors, microprocessors and selected electronic devices used in Chrysler automobiles. Additional course fees: $10.00.

AUTC 121 Chrysler Air Conditioning and Heating Systems (Cr3) (3:0)

Operation, diagnosing, and servicing of Chrysler air conditioning systems and components; emphasis on electronic climate control system troubleshooting and repair. Additional course fees: $10.00.

AUTC 125 Advanced Chrysler Electronic Systems (Cr3) (3:0)

Theory, operation, diagnosis, and repair of Chrysler starting, charging, ignition, computer control and electrical-electronic accessory systems to include electronic cruise control, body controls, driver information systems and entertainment systems. Prereq.- AUTC 105. Additional course fees: $10.00.

AUTC 211 Chrysler Fuel and Emission Systems (Cr3) (3:0)

Theory, operation, and diagnosis of malfunctions of electronically controlled Chrysler emission control systems; emphasis on location and interpretation of specifications, accurate diagnosis of malfunctions by proper use of test equipment, and correct repair procedures. Prereq.- AUTC 125 and AUTO 175. Additional course fees: $10.00.

AUTC 221 Advanced Chrysler Engine Performance (Cr3) (2:2)

Diagnosis, adjustment, and repair of the systems which affect automotive performance; emphasis on synthesizing skills learned in electronic system, fuel and emission control systems courses, accurate use of diagnostic equipment, proper tune-up procedures, use of specification and interpretation of test results to enable the rapid isolation of malfunctions of a particular system or combination of systems in DaimlerChrysler automobiles. Prereq. - AUTO 105, 125,and 175; Pre- or coreq.- AUTO 221. Additional course fees: $10.00.

AUTC 224 Advanced Chrysler Automotive Studies (Cr3) (3:0)

Topics related to recent developments or advanced systems currently in production on DaimlerChrysler vehicles. Prereq. - AUTO 101, 103, 104, 105, 121, 125 and 175. Additional course fees: $10.00.

AUTC 225 Chrysler Mechanical Drive Train Systems (Cr4) (3:2)

Principles of operation, diagnosis, and repair of clutches, manual transmissions and transaxles, drive lines, differentials, and front wheel drive lines, differentials, and front wheel drive units used in DaimlerChrysler products; emphasis on understanding the principles of torque multiplication and speed reduction through the use of gearing, location, and interpretation of specifications, and correct troubleshooting and repair procedures. Prereq.- AUTO 125 and 175. Additional course fees: $10.00.

AUTC 226 Chrysler Automatic Transmission Systems (Cr4) (3:2)

Theory of operation, diagnosis, maintenance, and overhaul procedures of automatic transmissions and transaxles used in DaimlerChrysler products; major emphasis on the hydraulic system and electronic controls used.

Prereq.- AUTO 125 and 175. Additional course fees: $10.00.

Automotive Technology GM ASEP (ASEP)

ASEP 101 GM Engines (Cr4) (3:2)

Operational principles for General Motors engine systems and overhaul of GM engines. Emphasis on proper use of precision measuring instruments and rebuilding tools, ability to locate and interpret engine specifications, engine diagnosis, and correct repair procedures. Additional course fees: $10.00.

ASEP 103 GM Brakes (Cr3) (3:0)

Theory, principles of operation and terminology of General Motors brake systems designs, emphasis on system inspection, accurate malfunction diagnosis, location and interpretation of specifications, proper use of special tools and machining equipment for disc/ drum and standard/power systems, and correct repair procedures. Additional course fees: $10.00.

ASEP 104 GM Suspension and Alignment (Cr3) (3:0)

Theory, principles of operation and terminology of General Motors suspension system designs; emphasis on system inspection and accurate malfunction diagnosis, parts replacement procedures, location and interpretation of specifications, measuring and adjustment of alignment angles, wheel balancing, correct use of special tools and equipment, and correct repair procedures. Additional course fees: $10.00.

ASEP 105 GM Electrical Systems (Cr3) (3:0)

Electricity and magnetism, basic DC circuits used in General Motors electrical systems, use of meters, wiring diagrams, automotive wiring repair, location and interpretation of specifications, semiconductors, microprocessors and selected electronic devices used in GM automobiles. Additional course fees: $10.00.

ASEP 121 GM Air Conditioning & Heating Systems (Cr3) (3:0)

Operation, diagnosing, and servicing of General Motors air conditioning systems and components; emphasis on electronic climate control system troubleshooting and repair. Additional course fees: $10.00.

ASEP 125 Advanced GM Electronic Systems (Cr3) (3:0)

Theory, operation, diagnosis, and repair of General Motors starting, charging, ignition, computer control and electrical-electronic accessory systems to include electronic cruise control, body controls, driver information systems and entertainment systems. Prereq.- ASEP 105. Additional course fees: $10.00.

ASEP 211 GM Fuel and Emission Systems (Cr3) (3:0)

Theory, operation, and diagnosis of malfunctions of electronically controlled General Motors emission control systems; emphasis on location and interpretation of specifications, accurate diagnosis of malfunctions by proper use of test equipment, and correct repair procedures. Prereq.- ASEP 125 and 175. Additional course fees: $10.00.

ASEP 221 Advanced GM Engine Performance (Cr3) (2:2)

Diagnosis, adjustment, and repair of the systems which affect automotive performance; emphasis on synthesizing skills learned in electronic systems, fuel and emission control systems courses, accurate use of diagnostic equipment, proper tune-up procedures, use of specifications, and interpretation of test results to enable the rapid isolation of malfunctions of a particular system or combination of systems in GM automobiles. Prereq. - AUTO 105, 125 and 175. Pre-or coreq.- AUTO 211. Additional course fees: $10.00.

ASEP 224 Advanced GM Automotive Studies (Cr3) (3:0)

Topics related to recent developments or advanced systems currently in production on GM vehicles. Prereq. - AUTO 101, 103, 104, 105, 121, 125 and 175. Additional course fees: $10.00.

ASEP 225 GM Mechanical Drive Train Systems (Cr4) (3:2)

Principles of operation, diagnosis, and repair of clutches, manual transmissions and transaxles, drive lines, differentials, and front wheel drive units used in GM vehicles; emphasis on understanding the principles of torque multiplication and speed reduction through the use of gearing, location and interpretation of specifications, and correct troubleshooting and repair procedure. Prereq.- AUTO 125 and 175. Additional course fees: $10.00.

ASEP 226 GM Automatic Transmission Systems (Cr4) (3:2)

Theory of operation, diagnosis, maintenance, and overhaul procedures of automatic transmissions and transaxles used in GM vehicles; major emphasis on hydraulic systems and electronic controls. Prereq.- AUTO 125 and 175. Additional course fees: $10.00.

Biological Science (BIOS)

BIOS 104 Field Ecology (Cr4) (3:3)

Principles and techniques of ecology, class work stresses the theories behind field work, including structure of the physical and biotic components of the environment, conservation and preservation of wildlife and natural resources, biogeography, and classification, laboratory work centered around field experiences.

BIOS 105 Contemporary Biology (Cr4) (3:2)

Designed for students not intending to major in science or the allied health fields; develops an awareness of the impact of biology on individuals and the environment and an understanding of the process of science, ecology, cells, genetics, selected human systems and evolution. Not more than one of BIOS 103, 105 or 107 may count for credit towards the same degree. Approved for the Honors Program. Also available through Online Learning.

BIOS 107 Biology I (Cr4) (3:3)

Designed for science majors. Utilizing an evolutionary approach, the molecular basis of life will be studied, including such topics as the scientific method, chemistry, cell structure and function, cellular respiration, photosynthesis, mitosis, meiosis, genetics, and evolution. Not more than one of BIOS 103, 105 or 107 may count for credit toward the same degree.

BIOS 110 In Your Genes: Introduction to Modern Genetics (Cr4) (3:2)

Designed for students with an interest in modern genetics and the Human Genome Project, the course will develop an awareness of the impact of genetics on individuals, society, and the environment. The course's goal is to empower students to make informed decisions about ethical dilemmas in genetics that society will face in the next generation. Not intended for Biological Science or Allied Health majors.

BIOS 115 Essentials of Biology (Cr4) (3:2)

Designed to provide the foundation skills necessary to succeed in higher level Biology courses, especially those in the Allied Health fields. Basic topics such as the metric system, atomic structure, and informational literacy will be covered, as well as more in- depth biological subjects such as cell structure and function, and human genetics. This course will concentrate on the principles of biology related to the human body, but will not cover body systems, evolution and other topics of general interest. Also available through Online Learning.

BIOS 150 Biology II (Cr4) (3:3)

A thorough survey of plants and animals including taxonomy, anatomy, physiology, diversity, evolutional trends, and ecology. Prereq. - BIOS 107.

BIOS 160 Human Biology (Cr4) (3:3)

Survey of the structural and functional relationship of the organ systems which make up the human body. Prereq. - high school biology or BIOS 105 or 107 or 115 or permission of instructor. Also available through Online Learning.

BIOS 202 Microbiology (Cr4) (3:3)

Fundamental principles of morphology, physiology and control of bacteria and other microorganisms, medical and economic importance of microorganisms in general and pathogens in particular; laboratory methods of isolation, identification and enumeration. Prereq. - BIOS 107 or 115 or 160 or 204, or VETC 101.

BIOS 204 Human Anatomy and Physiology I (Cr4) (3:3)

Structure and function of the human body; survey of biochemistry, cell biology and histology; anatomy and physiology of the skeletal, muscular, and nervous systems of the body. Prereq. - one year of high school biology or BIOS 107 or 115. Also available through Online Learning.

BIOS 206 General Ecology (Cr4) (3:3)

The study of interrelationships between organisms and their environment. Topics include physical factors, adaptation of species, energy flow, nutrient cycling, biogeography, population dynamics, community structure and function, ecosystems analysis, ecological management applications, and the effects of human impact. Most lab work is conducted in the field. Prereq. - BIOS 107 and 150.

BIOS 210 Environmental Biology (Cr4) (3:3)

Utilizing an ecosystem approach, this course provides a survey of the broad topics of ecology and the environmental sciences. This approach gives an integrative study of the interactions of living systems with the physical world.Particular emphasis will be placed on conservation at the local level (Pocono

Mountain and Lehigh Valley) and how these issues relate to global concerns. Topics include aquatic as well as terrestrial ecosystems, pollution, and the distinction between conservation and preservation. Prereq.- BIOS107.

BIOS 250 Introduction to Cell and Molecular Biology (Cr4) (3:3)

A molecular approach to the study of the cell structure and function, including basic topics in biochemistry, cell physiology, and molecular genetics; laboratory exercises with a strong emphasis on basic DNA manipulation techniques. Prereq. - BIOS 107, CHEM 201 and ENGL 101.

BIOS 254 Human Anatomy and Physiology II (Cr4) (3:3)

Continuation of BIOS 204; circulatory, lymphatic, respiratory, digestive and urinary systems, water, electrolyte and acid/base balances, endocrine and reproductive systems. Prereq. - BIOS 204. Also available through Online Learning.

BIOS 260 Genetics (Cr4) (3:3)

This course provides an introduction to the fundamentals of genetics. Topics of investigation include principles of Mendelian genetics, chromosomal theory, DNA structure, gene structure and expression, and population genetics. Lab investigations will utilize traditional as well as novel methods of genetic analysis including the extraction and manipulation of DNA, gel electrophoresis, and polymerase chain reactions (PCR). Prereq.- BIOS 150, CHEM 220.

BIOS 281 Research in Biology (Cr1) (0:0)

An independent, experimental investigation of an area of biology selected by the students in consultation with and under the guidance of a biology faculty member; both library and laboratory research is required. Offered on demand with the approval of the science cluster. Prereq. - gpa of 2.5 or higher in at least 8 credits of biology and 4 credits of chemistry plus permission of the science cluster. Repeatable; may be taken 3 times with a limit of 9 credits total from any combination of BIOS 281/282/283.

BIOS 282 Research in Biology (Cr2) (0:0)

An independent, experimental investigation of an area of biology selected by the students in consultation with and under the guidance of a biology faculty member; both library and laboratory research is required. Offered on demand with the approval of the science cluster. Prereq. - gpa of 2.5 or higher in at least 8 credits of biology and 4 credits of chemistry plus permission of the science cluster. Repeatable; may be taken 3 times with a limit of 9 credits total from any combination of BIOS 281/282/283.

BIOS 283 Research in Biology (Cr3) (0:0)

An independent, experimental investigation of an area of biology selected by the students in consultation with and under the guidance of a biology faculty member; both library and laboratory research is required. Offered on demand with the approval of the science cluster. Prereq. - gpa of 2.5 or higher in at least 8 credits of biology and 4 credits of chemistry plus permission of the science cluster. Repeatable; may be taken 3 times with a limit of 9 credits total from any combination of BIOS 281/282/283.

BIOS 291 Special Studies in Biological Science (Cr1)

See Statement on Special Studies. Offered on demand.

BIOS 292 Special Studies in Biological Science (Cr2)

See Statement on Special Studies. Offered on demand.

BIOS 293 Special Studies in Biological Science (Cr3)

See Statement on Special Studies. Offered on demand.

BIOS 294 Special Studies in Biological Science (Cr4)

See Statement on Special Studies. Offered on demand.

Biotechnology (BIOT)

BIOT 101 Introduction to Good Manufacturing Practices (GMP) (Cr3) (3:0)

Course is designed to give an overview of biomanufacturing processes and the fundamentals of current Good Manufacturing Practice (GMP) in the field of sterile products and aseptic processing. A significant portion of the course will be geared towards understanding the latest US Food and Drug Administration's guidance documents and their applications. The course will also introduce the student to the European version of current GMP.

BIOT 120 Cleanroom Microbiology (Cr2) (1:2)

Course presents the basic information on cleanroom operations and management. Content will focus on basics of cleanroom design, daily operation and cleaning, understanding how a cleanroom can become contaminated, microbial monitoring, determining the source of contamination, identification of the contaminant, disinfection processes and prevention of recontamination. All techniques will be in accordance with procedures outlined by the International Standards Organization (ISO) and the International Association for Pharmaceutical Science and Technology (ISPST). Pre- or coreq.- BIOT 184 or permission of the instructor.

BIOT 184 Introduction to Biotechnology (Cr3) (3:0)

Principles of the scientific basis of the technologies used by biotechnology industry and their historical development with an emphasis on current applications in the areas of agriculture, medicine, forensics, the environment, and the chemical industry. Students will be introduced to the basics of recombinant DNA technology, cell culture, protein expression and purification, stem cell research, bio-terrorism related issues, vaccines and bioethics. Topics will also include an overview of biopharmaceutical and biotechnology industries. Pre- or coreq.- BIOS 107.

BIOT 185 Biotechnology Techniques (Cr4) (3:3)

Concepts and techniques necessary to work effectively in a biotechnology research or manufacturing laboratory. The importance of quality regulations and standards and the role of the technician in producing quality results will be emphasized. Students will gain theoretical and practical knowledge of laboratory instruments as well as basic laboratory techniques. Topics will include maintenance, record keeping, cleaning and calibration of laboratory equipment, preparation of common solutions and reagents, and writing and following procedures. Computer software will be used to generate spreadsheets and data analysis. Applications of bio-separations, cell culture, and fermentation will be introduced. Students will be trained in laboratory safety policies and good laboratory practices (GLP). Prereq. - BIOS 107 and CHEM 120.

BIOT 188 Biotechnology Internship (Cr1) (0:0:varies)

Work experience in the biotechnology/pharmaceutical industry or other related industries. Prereq. - BIOT 185.

BIOT 190 Industrial Biotechnology (Cr3) (3:0)

Students will be introduced to the bio-manufacturing process including a survey of proteins and vaccines which are currently produced by biotechnology and pharmaceutical companies. Regulatory environment of the biotechnology industry including standard operating procedures (SOP's) and current good manufacturing practices (cGMP) will be discussed. Cell culture scale-up, high throughput screening, use of robotic equipment will be introduced. Prereq. - BIOT 184 and 185.

BIOT 200 Aseptic Processing (Cr4) (3:3)

Course presents the basic information on contamination control and technical fundamentals that govern aseptic processing.

Content emphasizes complexity of aseptic processing approaches, methods for proper aseptic surface contamination control, environmental monitoring and control presented in a context of regulatory compliance, Good Manufacturing Practice (GMP) and the current thinking of the US Food and Drug Administration (FDA). Coreq.- BIOT 101 and 120.

BIOT 202 Biotechnology Seminar (Cr1) (1:0)

A survey (in seminar format) of current advances in biotechnology, bioinformatics, and the societal implications of biotechnological developments. Students will develop the presentation and discussion skills necessary for a biotechnology career by giving oral presentations on these topics and participating in instructor-facilitated group discussions. The importance of using current journals, scientific meetings, and the Internet to stay current in biotechnological topics will be emphasized. Prereq. - BIOT 190, BIOS 202 and CMTH 102.

BIOT 220 General Biotechnology (Cr4) (3:3)

A survey of principles of biotechnological applications of molecular and cell biology. Topics include transcription, translation, cell cycle regulation, protein expression, prokaryotic and eukaryotic gene expression, and antibodies. The laboratory will give the students exposure to recombinant DNA technology such as cloning techniques, restriction digests, plasmid design and purification, electrophoresis, protein expression and purification, and immunoassays. Prereq. - BIOT 190 and BIOS 202.

Business (BUSA)

BUSA 101 Introduction to Business (Cr3) (3:0)

Fundamental operations of business including management, human resource management, economics, marketing, operations and manufacturing, accounting, finance, and international relations. Also available through Online Learning.

BUSA 114 Manufacturing Cost Control (Cr3) (3:0)

Budget planning administration, standard costs, control of labor time, scrap, waste, inventory control, and maintenance costs. Offered alternate years.

BUSA 115 Introduction to International Business (Cr3) (3:0)

Environment, concepts and differences involved in international business; government influences on trade, organizations affecting international trade, the need of multinational business involvement, and the challenges this involvement presents to employees. Also available through Online Learning.

BUSA 131 Principles of Marketing (Cr3) (3:0)

Principles of marketing and analysis of the four variables of the marketing mix: product, price, promotion, and distribution; marketing concepts as related to products and services and businesses and non-profit organizations. Also available through Online Learning.

BUSA 135 Principles of Exporting and Importing (Cr3) (2:2)

Entrepreneurial course with a hands-on approach to export and import business; starting and setting up a home office, distribution and territorial strategies, international selling and promotion, shipping and custom duties, documentation, financing and travel, cultural and ethical issues, U.S. and foreign government regulations. Prereq. - BUSA 115.

BUSA 137 Principles of Selling (Cr3) (3:0)

Basic principles of professional selling; characteristics and opportunities of a sales career; knowledge and skills associated with the selling process; hands-on course emphasizing role-playing, and in-class presentations.

BUSA 141 Entrepreneurship (Cr3) (3:0)

The business plan and start-up phase of a business; opportunity recognition, idea formulation, entry strategies; includes a complete simulation.

BUSA 152 Business Law I (Cr3) (3:0)

Basic introduction to legal aspects of business including relevant terminology; essential elements of the American legal system, structure and operation of courts, torts and crimes in a business environment, common law of contracts, sales under the Uniform Commercial Code, and ethical considerations in business operations. Also available through Online Learning.

BUSA 191 Special Studies in Business (Cr1)

See Statement on Special Studies. Offered on demand.

BUSA 192 Special Studies in Business (Cr2)

See Statement on Special Studies. Offered on demand.

BUSA 193 Special Studies in Business (Cr3)

See Statement on Special Studies. Offered on demand.

BUSA 201 Business Statistics I (Cr4) (4:0)

Applied analysis of descriptive statistics, probability and probability distributions, sampling methods and distribution, hypothesis testing, correlation and regression, analysis of variance, non parametric methods, statistical quality control, and index numbers. Prereq. - 1 year high school algebra or permission of instructor. Also available through Online Learning.

BUSA 202 Business Law II (Cr3) (3:0)

Basic legal concepts and procedures underlying the formation, operation, and dissolution of various forms of business organization; commercial paper, creditor/debtor rights, bailments, employment law, and relevant social legislation. Prereq. - BUSA 152. Also available through Online Learning.

BUSA 205 Management Fundamentals (Cr3) (3:0)

Principles and functions of management within organizations; planning and decision-making, organizing and staffing, leading and controlling with emphasis on the manager's role in goal achievement; ethical, political, legal, and international aspects of the environments in which business and other organizations operate; a management case study or simulation may be integrated into the course. Also available through Online Learning.

BUSA 211 Personal Finance (Cr3) (3:0)

Personal financial planning in money management, career planning, taxes, consumer credit, housing, and other consumer decisions, legal protection, insurance, investments, retirement planning, and estate planning. Also available through Online Learning.

BUSA 221 Business Communications (Cr3) (3:0)

Comprehensive overview of the communications processes with special emphasis on practical workplace applications; students assess and develop their listening, speaking, writing, and research skills as they prepare business letters, memos, reports, presentations, proposals, and employment packages; students plan and conduct business meetings and practice effective group problem-solving skills. Only one of BUSA 221 or OFAD 221 may be applied to a degree. Prereq. - ENGL 151 and CMTH 102. Also available through Online Learning.

BUSA 226 Human Resources Management (Cr3) (3:0)

The management of human resources in the legal and social environment of business; personnel planning, recruiting, selection, training, job evaluation, employee rights, compensation and benefits, and other aspects of personnel administration; labor-management relations and industrial safety for employees. Also available through Online Learning.

BUSA 231 Production and Inventory Control (Cr3) (3:0)

Modern methods of advance planning, machine scheduling, and line loading, non-technical approach. Offered alternate years.

BUSA 235 Principles of Advertising and Public Relations (Cr3) (3:0)

An introduction to the principles of advertising and public relations. Includes advertising's role within marketing; how advertising works; the consumer audience; strategic research and planning; advertising media; ad design and copywriting; ad evaluation and the role of public relations. Student is recommended to have familiarity with Microsoft Word, PowerPoint, email and the internet. Prereq.- BUSA 131.

BUSA 252 Quality Management (Cr3) (3:0)

Principles and methods used in modern quality management; TQM tools and processes, statistical process control, employee problem-solving; quality as a strategic imperative.

BUSA 260 International Business Practice Firm (Cr3) (2:2)

Using an international business model, the students work as team members in a simulated business firm in a state-of-the-art facility; students have the opportunity to perform various business functions (i.e. accounting, human resources, marketing/sales, purchasing/ inventory control) as the firm transacts business with students in other simulated companies both in the U.S. and in other countries. Prereq. - 30 credits completed and familiarity with Microsoft Word, e-mail, and the Internet.

BUSA 261 International Business Practice Firm Accounting Department (Cr3) (2:2)

Same as BUSA 260 with accounting focus. Prereq. - BUSA 260 and departmental permission.

BUSA 262 International Business Practice Firm Human Resources Department (Cr3) (2:2)

Same as BUSA 260 with human resources focus. Prereq. - BUSA 260 and departmental permission.

BUSA 263 International Business Practice Firm Marketing Department (Cr3) (2:2)

Same as BUSA 260 with marketing focus. Prereq. - BUSA 260 and departmental permission.

BUSA 264 International Business Practice Firm Purchasing Department (Cr3) (2:2)

Same as BUSA 260 with purchasing focus. Prereq. - BUSA 260 and departmental permission.

BUSA 270 Marketing Simulation (Cr3) (3:0)

Students work as a team in a simulated advertising agency setting to develop a creative Integrated Marketing Communication Program. In creating the program, students apply all aspects of marketing from previous coursework (i.e. advertising/PR campaigns, brochure/sell sheet development, website design, sales promotion, personal selling, etc.). Students are involved in creative and critical thinking, decision making, environmental scanning and team activities. Prereq.- BUSA 131, 235, ARTA 130, and a minimum of 40 credits completed.

BUSA 272 Finance/Applied Investment Management (Cr3) (3:0)

This course is an introduction to the nature of the finance function: risk and return concepts, working capital, dividend policies, mergers, security markets, acquisition and management of corporate capital, analysis of operations, forecasting capital requirements, raising capital and planning profits. Students will be able to manage a portfolio of debt and equity securities with the goal of providing an above average, risk-adjusted return. Prereq.- ACCT 151, BUSA 205, ECON 201 and business faculty recommendation.

BUSA 291 Special Studies in Business Administration (Cr1)

See Statement on Special Studies. Offered on demand.

BUSA 292 Special Studies in Business Administration (Cr2)

See Statement on Special Studies. Offered on demand.

BUSA 293 Special Studies in Business Administration (Cr3)

See Statement on Special Studies. Offered on demand.

Casino Management (CASN)

CASN 101 Introduction to the Gaming Industry (Cr3) (3:0)

This course provides an overview of casino management with an emphasis on the analysis of the gaming industry and its trends, a casino's interface with the hotel, organizational structure and terminology. Students will learn the history of gaming, various types of games, daily casino operations, casino marketing and financing, government regulations of gambling and the future development of the industry.

CASN 120 Casino Industry Regulations (Cr3) (3:0)

This course will provide a survey of the laws and regulations related to the gaming industry with specific emphasis on the history and development of Pennsylvania Gaming laws, regulations and compliance requirements of gaming licenses.

CASN 130 Casino Gaming Operations I (Cr3) (3:0)

This course presents a comprehensive examination into the organizational structure of a casino operation to include slot operations, cage and coin, and accounting. Each department will be studied in relationship to its structure, planning processes, daily operations, budgetary impacts, and management challenges.

Chemistry (CHEM)

CHEM 011 Chemical Calculations (Cr2) (2:0)

Chemistry problems and how to solve them, including basic chemical theory as necessary.

CHEM 105 Chemistry in Contemporary Society (Cr4) (3:2)

The scientific method and basic chemistry principles applied to contemporary topics such as energy, food, environmental pollution, sports, ecology, organic chemistry, and material usage; stress on critical thinking skills, experimental design, and use of the microcomputer. Approved for the Honors Program.

CHEM 120 General Chemistry I (Cr4) (3:3)

Study and practice of the scientific method. Laboratory experiments include: verification and investigative exercises, several in a collaborative setting. Instrumentation including FTIR and G.C. Topics include: basic chemical concepts and stoiciometry, electron arrangements, quantum theory, spectroscopy, chemical bonding, behavior of gases, liquids, solids, introduction to solution chemistry,

colligative properties, and equilibrium. Prereq. - Math: 2 years of high school algebra or MATH 026 or 028; Chemistry: 1 year of high school chemistry or CHEM 011; Reading: eligibility for English I or a grade of 'R' in READ 017 or a grade of 'B' or above in both ENGL 038 and ENGL 035.

CHEM 121 Lab Safety Procedure (Cr2) (2:0)

Development of safety attitudes and safety training, toxicological concepts, hazards, risk analysis, chemical storage and disposal, safety regulations, and safety literature, examination of selected case studies and accidents. Restricted to Chemistry and Chemical Technology students only.

CHEM 135 Chemistry of Life (Cr4) (3:2)

Principles of general, organic, and biochemistry with emphasis on applications in the health sciences. Also available through Online Learning.

CHEM 201 Organic Chemistry I (Cr4) (3:3)

Functional groups, structures, stereo-chemistry, rates of reactions, reaction mechanisms, preparations and reactions of alkanes, alkenes, dienes, optical isomers, and aromatic compounds; modern organic lab techniques and applications to chemistry, biology, and chemical engineering. Pre- or coreq. - CHEM 220. Offered fall only.

CHEM 220 General Chemistry II (Cr4) (3:3)

Thermodynamics, kinetics, nuclear chemistry, solution concentrations and dilutions, acids, bases, potentiometry, precipitation reactions, electrochemistry, and introductions to coordination chemistry, qualitative analysis, and organic chemistry. Prereq. - CHEM 120.

CHEM 225 Quantitative Analysis (Cr4) (3:3)

Evaluation of analytical data, aqueous and nonaqueous solution chemistry, titration curves, electrochemistry; theory and applications of: gravimetric, titrimetric, potentiometric, complexation, electroanalytical, spectrophotometric, and chromatographic methods of analysis. Prereq. - CHEM 220.

CHEM 228 Chemical Methods and Instrumentation (Cr3) (2:3)

Instrumentation including GC, HPLC, GC/MS, IR, NMR, ICP; introduction to EPA, TQM, and ISO-9000; regulatory compliances; team-oriented problem solving/ process improvement methods.

Prereq. - CHEM 220.

CHEM 251 Organic Chemistry II (Cr4) (3:3)

Continuation of CHEM 201, including preparation and reactions of alcohols, thiols, disulfides, ethers, aldehydes, ketones, carboxylic acids, amides, esters, amines, amino acids, and proteins; modern organic lab techniques, and an optional student project in lab. Prereq. - CHEM 201. Offered spring only.

CHEM 291 Special Studies in Chemistry (Cr1)

See Statement on Special Studies. Offered on demand.

CHEM 292 Special Studies in Chemistry (Cr2)

See Statement on Special Studies. Offered on demand.

CHEM 293 Special Studies in Chemistry (Cr3)

See Statement on Special Studies. Offered on demand.

CHEM 294 Special Studies in Chemistry (Cr4)

See Statement on Special Studies. Offered on demand.

Communications/ Theatre (CMTH)

CMTH 102 Speech Communication (Cr3) (3:0)

Basic principles of communication theory and practice, including speech preparation and delivery, and the effective use of critical thinking and listening in relation to intrapersonal, interpersonal, intercultural, and group communication. Also available through Online Learning.

CMTH 103 Mass Communication (Cr3) (3:0)

This course is an introduction to the cultural, social, legal, business, career and theoretical aspects of media. Provides an overview of mass media functions,structures, supports and influences. Restricted to Radio/TV students. Pre- or coreq. - ENGL 101.

CMTH 105 Public Speaking (Cr3) (3:0)

Students learn advanced speech writing strategies through preparation, research and delivery of speeches within a public setting. Emphasis is placed on audience analysis, managing anxiety, and use of visual resources and information technology. Prereq. - CMTH 102.

CMTH 110 Introduction to the Theatre (Cr3) (3:0)

Communicative nature of the theatre, historical perspective, modern trends, basic theories of playwriting, acting, directing, theatre spaces, and theatricaldesigns; reading plays, production preparation, attending NCC Theatre productions, and a field trip to see a professional production.

CMTH 111 Acting I (Cr3) (2:2)

Exploring the acting process, emphasis is on basic acting lessons, development of acting potential and discipline, gaining strength as a truthful actor on one's own and in rehearsal.

CMTH 115 Technical Theatre (Cr3) (2:2)

Technical aspects of theatre with emphasis in set, costume, and lighting design;preparation for, and execution of, major college productions; working with technical director and maintaining theatre facilities.

CMTH 117 Stagecraft (Cr3) (2:2)

The non-performance side of theatre with emphasis on theatrical construction and production skills; preparation for, and execution of, major college productions; working with the technical director and maintaining theatre facilities.

CMTH 120 Radio Production (Cr3) (2:2)

A study of audio production techniques. Practice in operation of radio equipment and instruction in newswriting, commercial production, and performance. Pre- or coreq. - ENGL 101. Additional course fees: $50.00.

CMTH 122 Radio Workshop (Cr1) (0:2)

Radio production and on-air experience. Students produce programs that air on local radio stations. Opportunities in music, news, continuity and announcing. May be taken four (4) times for credit.

CMTH 126 The Communication Arts (Cr3) (3:0)

An aesthetic approach to understanding the media, emphasizing critical thinking and the ability to speak and write about technologically mediated arts. Restricted to Radio/TV, Theatre, Journalism, and Communication Studies students. Pre- or coreq. - ENGL 101.

CMTH 130 MIDI Sequencing and Synthesis (Cr3) (3:0)

This course covers topics in music computing including sound synthesis, MIDI sequencing, music notation and emerging technologies in music. Students will use computers to create, edit and record music. Previous music or keyboard skills are helpful but not required.

CMTH 170 Television Production (Cr3) (2:3)

Classroom and laboratory experience in the operation of a modern television studio including operation of television cameras, switcher, control room equipment, lighting, and audio for television plus experience scripting, producing, and directing 'live-on-tape' studio productions. Restricted to Radio/TV, Theatre and Journalism students. Prereq. - CMTH 120; Pre- or coreq. - ENGL 101. Additional course fees: $50.00.

CMTH 180 Multimedia Production (Cr3) (3:0)

This course provides theoretical and hand-on training in the various tools and techniques used in multimedia production for business, education, advertising and entertainment. Areas of instruction include digital photography, multimedia editing, and DVD creation. Additional course fees: $50.00.

CMTH 182 Multimedia Graphics & Animation (Cr3) (3:0)

This course provides theoretical and hands-on training in the various tools and techniques used in the creation of graphics, motion graphics and animation. For use in media production and multimedia presentations. Areas of instruction include Photoshop and After Effects. Additional course fees: $50.00.

CMTH 189 Stage Voice and Movement (Cr1) (1:1)

Study and practice in natural voice work, movement as destination, and physical commitment to character intentions. May be taken two times for credit. Prereq.- CMTH 111.

CMTH 190 Stage Production (Cr1) (1:1)

Study and practice in stage production work relating to design, construction, implementation and organization in the area of scenery, lighting, sound, properties, costumes and stage management. Course may be taken two times for credit. Pre- or coreq.- CMTH 115.

CMTH 206 Directing (Cr3) (2:2)

The process of directing a play: choosing and analyzing the script, working with actors, choosing and preparing the theatre space, overseeing the performance, and analyzing the results. Prereq.- CMTH 110 or 111.

CMTH 211 Plays: Classical to Contemporary (Cr3) (3:0)

Study of the dramatic script as a literary text that shapes both performance and our understanding of culture and the human enterprise; plays from classical Greece to contemporary Africa are analyzed for the human concerns and themes in each, the various and opposed points-of-view of the characters, and the differences that culture can make in artistic expression. Students may not receive credit for both CMTH 211 and ENGL 211. Prereq. - ENGL 101.

CMTH 212 Acting II (Cr3) (2:2)

Continuing to explore the acting process through scene study, audition preparation, comedy adaptations, psychological gesture work, and animal improvisations. Prereq. - CMTH 111.

CMTH 214 Interpersonal Communication (Cr3) (3:0)

Exploration of the theories, concepts, and processes of interpersonal communication. In this course students explore a variety of personal and professional interpersonal contexts and the processes of relational development. Prereq.- CMTH 102

CMTH 215 Intercultural Communication (Cr3) (3:0)

Exploration of the theories, concepts, and themes that examine the influence of culture on the communication process; students explore a wide array of cultures and increase their cultural sensitivity and intercultural communication competence. This course has a service-learning option. Prereq. - CMTH 102.

CMTH 218 Theatre Portfolio (Cr1) (1:1)

Final exit showcase by graduates. Individually tailored to address readiness for transfer. Prereq. - Graduating Theatre major or permission of instructor.

CMTH 220 Introduction to Film (Cr3) (3:0)

Aspects of the motion picture including purpose of film, history of the feature, documentary, and experimental film with emphasis upon cinematic techniques and the development of criteria for evaluation; the relationship of film with other forms of communication. Presentation of weekly film.

CMTH 221 History of Broadcasting (Cr3) (3:0)

A study of the history of broadcasting, federal regulations, networks and broadcasting as a business. Prereq. - CMTH 103.

CMTH 225 Scriptwriting (Cr3) (3:0)

Writing and analysis of television and radio continuity, ad campaigns and commercial, newswriting, documentary and non-fiction, scripting and the study of screenplays and TV drama. Prereq. - ENGL 101.

CMTH 230 Introduction to Communication Theory (Cr3) (3:0)

An introduction to the nature of theory, approaches to research, and types of oral communication theories. This course develops skills in researching and analyzing communication phenomena. Prereq. - CMTH 102 and 214.

CMTH 231 Small Group Communication (Cr3) (3:0)

An introduction to the foundation, roles, and leadership associated with small groups. The course develops skills in participation and presentation within a small group setting. Prereq. - CMTH 102.

CMTH 240 Portable Video Techniques (Cr3) (3:0)

Designed to give students an in-depth understanding of portable video techniques; professional ENG and EFP shooting, lighting and audio techniques, plus editing techniques necessary to complete news and information segments. Prereq. - CMTH 170. Additional course fees: $50.00.

CMTH 245 Audio Recording and Mixdown (Cr3) (3:0)

Theoretical and hands-on training in multi-track audio recording and mixdown techniques, sound effects and preparation of soundtracks. Prereq. - CMTH 120. Additional course fees: $50.00.

CMTH 246 Advanced Audio Production (Cr3) (3:0)

Practical application of audio production techniques including location sound, MIDI sequencing, audio for video, and advanced Pro Tools. Emphasis is on the ability to oversee all phases of production and to function as an effective producer. Restricted to Radio/TV, Theatre and Journalism students. Prereq. - CMTH 245. Additional course fees: $50.00.

CMTH 251 Advanced Television Production (Cr3) (3:0)

Practical application of the various media production techniques previously learned culminating in the production of television shows suitable for broadcast on local stations. Emphasis is on the ability to oversee all phases of production and to function as an effective producer. Restricted to Radio/TV, Theatre and Journalism students. Prereq. - CMTH 170. Additional course fees: $50.00.

CMTH 252 Video Editing and Post Production (Cr3) (3:0)

Theoretical and hands-on training in editing and the various video techniques used in post production; non-linear editing and post production, computer graphics, compositing and animation. Prereq. - CMTH 240. Additional course fees: $50.00.

CMTH 275 Radio-TV Internship (Cr3) (1:6)

Work experience in a radio or television station, with media production companies or media divisions of business and industry. Restricted to Radio/TV, Theatre and Journalism students. Prereq. - CMTH 120, 170 and at least one course from the list of Media Electives.

CMTH 291 Special Studies in Speech (Cr1)

See Statement on Special Studies. Offered on demand.

CMTH 292 Special Studies in Speech (Cr2)

See Statement on Special Studies. Offered on demand.

CMTH 293 Special Studies in Speech (Cr3)

See Statement on Special Studies. Offered on demand.

Computer and Information Science (CISC)

CISC 100 Computer Technology I (Cr4) (4:0)

Introductory course for Computer Information Technology majors with the goal of establishing entry-level skills for three CIT options: Software, Networking, and Web. HTML, programming logic and design, and basic networking concepts will be covered as well as the exploration of CIT careers, and Excel and Word core level skills. Also available through Online Learning.

CISC 101 Introduction to Computers (Cr3) (3:0)

Introduces computer concepts including hardware and software, an overview of application software, networking and the Internet, and current issues with respect to computers and society. Hands-on microcomputer instruction in the productivity tools of word-processing and spreadsheets designed to give students an appreciation for the different uses of word processing and spreadsheet applications. Also available through Online Learning.

CISC 104 Microcomputer Applications (Cr4) (4:0)

Designed to give students experience with microcomputers and productivity software. Topics include spreadsheets, database management, word processing systems and presentation packages. Prereq. - CISC 100 or 101. Also available through Online Learning.

CISC 105 Microcomputer Operating Systems (Cr4) (4:0)

Microcomputer operating system issues and elements using DOS and Windows; interfaces, batch and program information files, memory management, configurations, file systems, and communications.

CISC 106 Introduction to Computing with Alice (Cr3) (3:3)

Introduces the concepts of object-oriented computer programming using Alice, a 3-dimensional programming environment. Designed for students with no programming experience.

CISC 111 Introduction to the Internet (Cr3) (3:0)

Internet-related topics such as the history of the Internet, email and its features, browser basics, browsing Web sites, searching for information, downloading data and program files, using file transfer protocol (FTP) software,and other internet-related topics. Prereq. - navigational and organizational skills in present operating systems, i.e., how to operate a computer, and maintain, find and save files. Also available through Online Learning.

CISC 115 Computer Science I (Cr4) (4:0)

Introduction to computing through the development of algorithms and programs which are implemented in a high level function/object oriented language; simple data types, control structures, documentation, basic file manipulation, problem solving techniques, modular design, structured data types, and object oriented implementations. Prereq. - high school algebra II with a C or better and

appropriate competence in mathematics as determined by the departmental mathematics placement test, or MATH 026 or 028 with a C or better.

CISC 125 Computer Science II (Cr4) (4:0)

Continuation of CISC 115 including stacks, backtracking, simulation, recursion, pointers, linear structures, searching, sorting, merging, elementary algorithm analysis, abstract base classes. Prereq. - CISC 115.

CISC 128 Client-side Scrpting (Cr4) (4:0)

Includes basic Web site design principles and a variety of languages including XML, HTML, Cascading Style Sheets, DHTML with extensive emphasis on the use of JavaScript. Prereq.- CISC 100 or ARTA 240.

CISC 145 Visual Software Development (Cr4) (4:0)

Examination of software design topics including design of GUI interface using Windows components, event-driven programming, multiple document interface, database controls, database access and updating, exception handling, input validation, and debugging techniques. Prereq.- CISC 128.

CISC 150 Object-Oriented Programming (Cr4) (4:0)

Programming for Windows, the Internet and platform-independent programs; overview of the packages included with the Java platform such as: stream I/O, programming graphical user interfaces for applications, creating applets, creating objects using inheritance, networking. Prereq. - CISC 115 or 128.

CISC 158 Server-side Scripting (Cr4) (4:0)

Server-side scripting covers topics related to the creation of dynamic web pages using interactive scripting languages for web development. Prereq.- CISC 128, pre- or coreq - CISC 270.

CISC 180 Introduction to Network Security (Cr4) (4:0)

This is an introductory course in computer and network security intended for networking or computer professionals and students who want to understand general concepts of network and information security. Topics will include the identification of vulnerabilities and mitigation of security risks, learning the basic principles of cryptography, keys and certificates, VPNs and wireless communication, configure group privileges, access control and authentication, implement security baselines, systems updates, intrusion detection, and create and build organizational and operational security programs that include documentation, risk assessment and user education. Prereq. - CISC 231.

CISC 201 Advanced Web Technologies (Cr4) (4:0)

In this capstone course in the Web Development program, students will use cutting-edge technologies focused on interactivity, design and web standards. Students will apply knowledge of database design, programming, client-side scripting, and server-side programming to create functional, dynamic and aesthetically pleasing websites. Prereq. - ARTA 130, CISC 158 and 270.

CISC 205 Introduction to Computer Operating Systems (Cr4) (4:0)

Students will explore installation and administration of Windows server and client, LINUX server and client, and Novell server and client systems and relationships to network security. Securing the NOS and client will also be discussed and the importance of system hardening, backups, user privileges, and disaster recovery. Prereq. - CISC 105 and 231.

CISC 225 Computer Organization (Cr4) (4:0)

Computer organization and low level programming with emphasis on the different levels of abstraction; levels of abstraction, processor components and organization, addressing techniques, low level data representation, instruction and types and representation, information transfer, flow of control, machine and assembly level programming. Prereq. - CISC 125.

CISC 230 Data Structures and Algorithm Analysis (Cr4) (4:0)

Performance analysis and measurement of programs, formal induction proofs, asymptotic notation, algorithm analysis, hashing, binary trees, binary search trees, balanced search trees, graphs, biconnected components, spanning trees, shortest path algorithms. Prereq. - CISC 125.

CISC 231 Data Communications and LANs (Cr4) (4:0)

Provides the foundation for work in data communications and local area network management; OSI and Internet models covered in detail; data transmission principles, media, major protocols, topologies, routing methods, introduction to networking principles, and management fundamentals. This is the first semester of the Cisco Networking Academy Program.

CISC 262 LAN Management (Cr4) (4:0)

Provides the knowledge and skills required of a successful LAN manager; networks and popular network operating systems; protocols, media selection, network operating system selection, network hardware, network and file system design, managing users and security, network printing, and applications. Prereq. - CISC 231 or permission of instructor.

CISC 265 Networking Architectures, Processes and Protocols (Cr4) (3:2)

Detailed understanding of the processes and protocols used in today's networks; network architectures from an OSI model perspective of the networking protocol stack; detailed analysis of the protocol using traces taken with protocol analyzers. Pre- or coreq.- CISC 231 or ELEC 251.

CISC 267 Internetworking and Routing (Cr4) (3:2)

Advanced course intended for networking professionals and students who grasp the concepts of data communications and networking but would like a more detailed understanding of internetworking and routing. This course covers techniques and components for managing network growth and connecting disparate network architectures, solutions to internetworking problems, and routing and routing protocols. Labs will give students hands-on experience with routers. This is the second semester of the Cisco Networking Academy Program. Prereq. - CISC 231.

CISC 270 Data Base Systems (Cr4) (4:0)

An introduction to the concepts of structures of data base systems. Definition, creation, and maintenance of data base systems; logical models of data organization such as hierarchical, network, and relational; data base integrity and security, effects of redundancy, specification and design of query functions, data entry and retrieval, query languages. Prereq. - CISC 104 or 128.

CISC 271 Intermediate Routing, LAN Switching and WANS (Cr4) (3:2)

This course is intended for networking professionals and students who already grasp the general concepts of data communications and networking with routers, but would like a more detailed understanding of LAN design and analysis, implementation of routing protocols, WAN technologies and telecommunications industry standards. There is a strong emphasis on device configuration and

network troubleshooting. This is the 3rd and 4th semester of the Cisco Networking Academy Program. Prereq.- CISC 267.

CISC 272 Building Scalable Internetworks (Cr3) (2:2)

This is an advanced course intended for networking professionals and students have have completed CCNA studies or already possess their CCNA certification. This course introduces students to scaling IP addresses using VLSM, NAT, and PAT. It focuses on advanced concepts and impletmentation of RIPv2, EIGRP, ISIS,multi-area OSPF, and BGP. Additional topics include route filtering, route redistribution and policy routing. This course is the first semester of CCNP studies through the Cisco Networking Academy Program. Prereq.- CISC 271 or CISC260 and 266, or a current and valid CCNA certification.

CISC 277 Computer Information Technology Practicum (Cr3) (0:0:130 practicum)

Work-based experience in an approved organization with focused exposure in networking, software or web development activities depending on degree specialty; written field experience report. Prereq. - 40 credits successfully completed for all students; CISC 231, ELEC 130, ELEC 254 and CISC 265 for

students in the Networking Option; CISC 104, 140, and 145 for students in the Software Option; CISC 128, 150, and 158 for students in the Web Option.

CISC 278 Web Server Administration (Cr4) (4:0)

A comprehensive overview of the tools and techniques needed for installation, configuration and administration of different kinds of Web Servers including Microsoft Windows 2000 Server, Red Hat Linux, Internet Information Services (IIS), Apache Web Server, Microsoft SQL Server, etc. Prereq.- CISC 100 or 105.

CISC 280 Law and Ethics of Computer Security (Cr3) (3:0)

Computer security is a highly technical arena, and one that is highly charged with ethical issues. This course will explore the ethical considerations of the computer security with emphasis on both the perpetrator and of the high standard expected of the computer security practitioner. Among other topics it will examine the topics of Professional Codes of Ethics, whistle-blowing, and 'ethical hacking.' Prereq. - CISC 180.

CISC 282 Measure/Counter-Measure (Cr4) (4:0)

Emphasize the configuration of network servers, routers, firewalls, intrusion detection devices and other technology to create functional systems with a high degree of security and hence to discover the effect each device can have on overall system security. Team projects will lead to these systems which will be tested within the class via team to team or be class to class (intra-campus) security tests to reinforce the subject matter. Prereq. - CISC 180 and 231.

CISC 291 Special Studies in Computer Information Science (Cr1)

See Statement on Special Studies. Offered on demand.

CISC 292 Special Studies in Computer Information Science (Cr2)

See Statement on Special Studies. Offered on demand.

CISC 293 Special Studies in Computer Information Science (Cr3)

See Statement on Special Studies. Offered on demand.

CISC 294 Special Studies in Computer Information Science (Cr4)

See Statement on Special Studies. Offered on demand.

Construction Management (CMGT)

CMGT 101 Introduction to Construction Codes (Cr3) (3:0)

This course will provide a study of the interpretation of technical building specifications, codes, and contract documents as they affect the selection, and application of materials and equipment. An emphasis will be placed on understanding local and state codes.

CMGT 102 Construction Methods and Materials (Cr3) (3:0)

This course introduces the students to steel, concrete and composite material buildings found in construction projects. There is discussion of building materials along with various systems of construction. Awareness of building codes on material application and an overview of sustainable design as applied to construction material and methods is explored. Exposure to the latest construction techniques as it relates to environmental and health concerns if offered to provide material and method cost effectiveness to construction projects while accommodating regulatory and ethical safety requirements.

CMGT 103 Construction Safety and Health (Cr3) (3:0)

This course provides the fundamental safety and health principles needed for an occupationally safe and healthy work environment while offering a practical application of theories and principles related to the construction industry. Students will gain awareness of OSHA's regulatory standards, safety and health strategies along with appropriate management techniques.

CMGT 104 Construction Print Reading (Cr3) (3:0)

This course serves as an introduction to building materials and systems and their representation in construction drawings. Included is an introduction of building design and construction with a focus on terminology, industry standards, and the roles of the contractor, architect and other parties involved in construction projects. Emphasis is placed on interpretations of contract drawings, terminology, symbols and conventions used in residential, commercial and industrial drawings. Prereq.- CMGT 101, 102, 103, MATH 120, CISC 101.

CMGT 105 Project Management and Administration (Cr3) (3:0)

This course will provide students with the knowledge and understanding of the management function in the construction industry. Topics include the project cycle, company and project organization, financial and budgeting considerations,documentation, monitoring, cost control, etc. Emphasis is placed on the responsibilities of the managers and their relationship to the owner, architect, general contractor and subcontractors including other agents involved in a construction project. Pre- or coreq.- CMGT 104.

CMGT 106 Construction Planning and Scheduling (Cr3) (3:0)

This course explores the concepts and techniques for construction planning, scheduling and control systems necessary for effectively managing a construction project. Emphasis will be placed on the skills and knowledge necessary to plan and schedule a project. Coordination of manpower, materials, equipment, project funding, and cash flow are all concerns that must be monitored and controlled. Efficiency and use of the computers to facilitate the planning and scheduling process is integrated throughout the class. Pre- or coreq.- CMGT 104.

CMGT 201 Construction Estimating (Cr3) (3:0)

This course emphasizes the fundamental of producing construction estimates and bids. Information discussed includes procedures to project material and labor costs. Interpreting construction drawings and specifications to estimate project expenses will be practiced throughout the course. Estimating skills and the integration of computers will be introduced and developed as a comprehensive approach to the estimating and bidding process. Prereq.- CMGT 106.

CMGT 202 Construction Supervision and Leadership (Cr3) (3:0)

This course will provide the opportunity to discuss and evaluate essential leadership and supervisory skills. Understanding and applying leadership behaviors, as well as basic management skills will expand a construction manager's knowledge and abilities. Students will learn how management problems influence efficiency, productivity and employee morale. Pre- or coreq.- CMGT 201.

CMGT 203 Construction Management Practicum (Cr6) (1:10)

This capstone course will provide the opportunity to integrate theory and practice with the reality of on-the-job experience. Based on the worksite hosting organization, the student intern will have opportunity to work in the areas of print reading, estimating, equipment management, project supervision, or other management related activities and tasks. All students are required to secure a sponsor for the practicum. Pre- or coreq.- CMGT 202.

Counseling (COUN)

COUN 092 Special Studies in Counseling: College Study Skills (Cr2) (2:0)

This course is designed to assist students in attaining college readiness skills. Students will strengthen foundational skills in reading, writing and math, and learn strategies for studying, completing assignments, and time management. Students will connect to essential college services. Required for students who place into ENGL 025, Writing Skills I and READ 016, Fundamentals of Reading.

COUN 100 Interpersonal and Group Dynamics (Cr3) (3:1)

Theory and application of group and personal processes; leadership, conformity, attraction/rejection, cohesion, trust, motivation and conflict resolution. Lecture and human relations lab experiences. Offered on demand.

COUN 101 College Success (Cr1) (1:0)

Designed to increase student success in college by assisting students to obtain the knowledge and skills necessary to reach their educational goals; focus on college and student expectations, development of appropriate study skills, and academic, career, and personal goal setting.

COUN 120 Career Planning I (Cr1) (1:0)

Vocational exploration including interests, abilities, values, and reality testing to formulate a choice of career area. Offered on demand.

COUN 130 Career Planning II (Cr1) (1:0)

Focusing career choice into a specific goal; review effective job hunting techniques to obtain chosen career. Offered on demand.

COUN 150 College Seminar: Applied Skills for Academic Success (Cr3) (3:0)

Provide students with the skills essential to succeeding in the college setting. Focus will be on understanding the role of a college student and the application of academic success strategies. The course will build a foundational level of information literacy and critical thinking skills.

COUN 291 Special Studies in Counseling (Cr1)

See Statement on Special Studies. Offered on demand.

COUN 292 Special Studies in Counseling (Cr2)

See Statement on Special Studies. Offered on demand.

COUN 293 Special Studies in Counseling (Cr3)

See Statement on Special Studies. Offered on demand.

Criminal Justice (CJST)

CJST 101 Introduction to Criminal Justice (Cr3) (3:0)

History and development of criminal justice system in democratic society; special emphasis on review of agencies involved in the process of administration of criminal justice,

and the moral and ethical values demanded of professionals employed in the system. Restricted to Criminal Justice students. Pre.- or coreq. - ENGL 101. Also available through Online Learning.

CJST 111 American Legal System (Cr3) (3:0)

Analysis of the interrelationships between prosecutors, defense attorneys, the courts, police, grand and petit juries, and correctional systems; how the U.S. system of justice is intended to function and how it operates; social and political effects of legal system. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

CJST 115 Criminal Law (Cr3) (3:0)

The principles and doctrines embodied in criminal law; substantive crimes, justification, complicity and liability, causation, inchoate crimes. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

CJST 121 Criminology (Cr3) (3:0)

Theories explaining criminal behavior; nature, causes, extent and distribution of crime, and criminal conduct. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

CJST 125 Corrections and Rehabilitation (Cr3) (3:0)

Historical development of corrections in America; competing philosophies, and institutional and community-based programs; dynamics of prison life, character of the inmate subculture, and administrative, organizational, and rehabilitative aspects of adult and juvenile probation and parole. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

CJST 131 Juvenile Delinquency and Laws Pertaining to Children (Cr3) (3:0)

Laws affecting minors and juvenile offenders vis-a-vis police, probation and parole officers, teachers, school counselors, and parents; juvenile, family, adoption, school, marriage, and military obligation, traffic laws, recent parent responsibility legislation, and contractual rights of minors. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

CJST 135 Law Enforcement and Investigative Techniques (Cr3) (3:0)

Intensive study of the law enforcement systems at the Federal, State, and local levels. Special emphasis will be on police organization and management, police functions, job stress, liability, and sociological and psychological implications. Principles and methods of investigations will also be examined including collection and preservation of evidence, impartial gathering of evidence, interrogation techniques, and the handling of informants. Either CJST 135 or 145 can be applied to the degree. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

CJST 145 Criminal Justice Ethics (Cr3) (3:0)

Morals and ethics of the criminal justice system; practices in law enforcement, the court system and corrections; ethical issues facing practitioners within the criminal justice system; analysis of issues in the context of theoretical approaches to moral reasoning. Eiher CJST 135 or 145 can be applied to the degree. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

CJST 150 Contemporary Issues in Criminal Justice (Cr3) (3:0)

Relevant and critical issues relating to crime and criminal justice; emphasis on, but not limited to, patterns of violence, organized crime, terrorism, diversity and any other event which emerges as a criminal justice crisis. Restricted to Criminal Justice students. Prereq. - CJST 101. Also available through Online Learning.

Culinary Arts (CULA)

CULA 102 Food Safety and Sanitation (Cr2) (2:0)

Causes and reduction of food borne illness, the HACCP system, proper sanitation methods, integrated pest management and government regulations. Restricted to Culinary Arts, Dietary Management, Restaurant Management and Dining Room Operation students only.

CULA 103 Nutrition (Cr2) (2:0)

Fundamentals of nutrition, lifespan and special need nutrition, nutrition and health, marketing nutrition in food service. Restricted to Culinary students. Coreq. - CULA 102; Prereq. - eligibility for ENGL 101.

CULA 105 Product Identification and Stewarding (Cr3) (3:0)

A detailed examination of the products used in the foodservice industry along with the cost control, purchasing and handling of these products; recipe measurements and formulas and kitchen mathematics. Restricted to Culinary students. Prereq. - CULA 102 and 103.

CULA 110 Baking (Cr3) (0:6)

A hands-on student participation course dealing with all the elements of baking and pastry making; doughs and yeast products, chemically and physically leavened products, dessert sauces and icings, frozen desserts; storing and handling techniques used with baked products. Restricted to Culinary students. Prereq. - CULA 105.

CULA 115 Meat, Poultry and Fish Cutting (Cr3) (0:6)

Care and handling techniques and hands on cutting of commonly used meat, poultry and seafood products used in food service establishments; emphasis on boning and portioning of primal and sub-primal cuts of meat and poultry, and filleting of fishes. Restricted to Culinary students. Prereq. - CULA 110.

CULA 120 Skill Development I (Cr3) (0:6)

A chef's guide to the art of cooking beginning with the basic cutting, chopping, mincing and progressively building in complexity; concentration on techniques of cooking and cooking methods; lecture and hands-on class participation dealing with stocks, soups, sauces, roasting, broiling, grilling, sauteing, pan frying, deep frying, braising, stewing, boiling, poaching, vegetable cookery, starch cookery, basic entrees, and meal combination. Restricted to Culinary students. Prereq. - CULA 115.

CULA 130 Basic Entrees and Vegetables (Cr3) (0:6)

Combining skills learned up to this point; timing of complete meals from appetizer to dessert progressively working from simple menus to complex. Restricted to Culinary students. Prereq. - CULA 170.

CULA 145 Restaurant Operations I (Cr8) (0:16)

Students are put to the test in a practical manner filling each of eight functioning stations; with one week at each the students rotate through the stations preparing all the menu items for that station; during this course the conditions are kept at a slower pace and more time will be allowed for the preparation of food items. Restricted to Culinary students. Prereq. - CULA 130. Additional course fees: $62.00.

CULA 150 Restaurant Operations II (Cr15) (0:30)

Students rotate through the kitchen stations and are responsible for all the menu items for that station; the pace of this course will be higher; the menu items will be more demanding and more emphasis will be put on speed and accuracy; this is a true functioning restaurant operation and the students will learn how a restaurant operates in industry. Restricted to Culinary students. Prereq. - CULA 145. Additional course fees: $115.00.

CULA 170 Skill Development II (Cr4) (0:8)

A chef's guide to pantry, garde manger, charcuterie and egg cookery; basic applications of the fine art of specialty food handling including pates, galantines, ballotines and sausages; brines, cures and smoking; all phases of meat, poultry and fish smoking and curing; buffet style food presentation, food decoration, vegetable carving, platter presentation and edible and non-edible centerpieces; basic cold food preparation including salads, salad dressings, cold sauces, and egg handling and preparation. Restricted to Culinary students. Prereq. - CULA 120.

Dance (DANC)

DANC 101 Dance History (Cr3) (3:0)

This course introduces students to the innovators, dancers, and choreographers who shaped the development of dance. The exploration of dance as an expression of cultural values throughout history will be examined. The course also surveys the purposes, functions, and manifestations of dance forms.

DANC 110 Ballet I (Cr1) (0.5:2.5)

This course introduces the student to the study of classical ballet. The course includes active participation in barre work, cente work, and traveling ballet exercises and combinations. The course also introduces the history of the genre of ballet as an art form. A student may take this course three times for credit. To fulfill the Arts and Humanities requirement, students must have a total of 3 credits.

DANC 120 Modern Dance I (Cr1) (0.5:2.5)

This course introduces the student to the principles of modern dance techniques. The course will include active participation in center work, movement across the floor, and proper alignment. A student may take this course three times for credit. To fulfill the Arts and Humanities requirement, students must have a total of 3 credits.

DANC 130 Jazz I (Cr1) (0.5:2.5)

This course is designed to introduce the student to the principles of Jazz dance techniques. Instruction will include flexibility and other physiological benefits. The course will include active participation in center work, movement across the floor, and proper alignment. It will emphasize performance through both improvisation and structured choreography. Incorporated in this course is the study of Jazz dance history. A student may take this course three times for credit. To fulfill the Arts & Humanities requirement, students must have a total of 3 credits.

DANC 210 Ballet II (Cr2) (0.5:2.5)

This course provides the student with continued development and practice of the theory and technical training introduced in Ballet I. The course includes active participation in barre work, centre work, and traveling ballet exercises and combinations. Also introduced are the fundamentals of ballet performance critique. A student may take this course two times for credit. To fulfill the

Arts and Humanities requirement, students must have a total of 3 credits. Prereq.- DANC 110.

DANC 220 Modern Dance II (Cr2) (0.5:2.5)

This course provides the student with continued development and practice of the theory and technical training introduced in Modern Dance I. Longer movement combinations and more detailed spatial designs will be implemented. The course also introduces the fundamentals of modern dance performance critique. A student may take this course two times for credit. To fulfill the Arts and Humanities requirement, students must have a total of 3 credits. Prereq.- DANC 120.

DANC 230 Jazz II (Cr2) (0.5:2.5)

This course is designed to provide the student with continued development and practice of the theory and technical training introduced in Jazz I. Longer movement combinations and more detailed spatial designs will be implemented. Instruction will include flexibility and other physiological benefits as well as provide an opportunity for creative work. The course will also introduce the fundamentals of Jazz Dance performance critique. A student may take this course two times for credit. To fulfill the Arts & Humanities requirement, students must have a total of 3 credits. Prereq.- DANC 130 or approval of instructor.

Dental Hygiene (DENH)

DENH 103 Pre-clinical Preventive Oral Health Services (Cr3) (0:9)

Students begin to work toward achieving client assessment and instrumentation competencies. Restricted to Dental students. Coreq. - DENH 104; Pre- or coreq.- DENH 105 and 106. Additional course fees: $662.00.

DENH 104 Foundations of Preventive Oral Health Services (Cr4) (4:0)

Infection control procedures, client assessment skills, dental disease prevention, dental materials and instrumentation techniques. Restricted to Dental students. Coreq. - DENH 103; Pre- or coreq. - DENH 105 and 106.

DENH 105 Oral Histology (Cr1) (1:0)

Integration of embryological concepts with the development of the face, neck, oral structures and teeth; correlation of the histological development of the enamel, dentin, pulp, cementum and periodontal ligament with clinical dental considerations and case histories. Restricted to Dental students. Coreq. - DENH 106; Pre- or coreq.- BIOS 160.

DENH 106 Oral Anatomy (Cr2) (2:0)

The differences among the permanent and primary dentitions by comparison of crown and root morphology, eruption patterns and occlusion; detailed head and neck anatomy including osteology, muscles, nerve innervation, and blood supply; client cases to correlate theories with clinical dental hygiene therapy. Restricted to Dental students. Coreq.- DENH 105.

DENH 109 Oral Radiology Lab (Cr1) (0:3)

Application of the knowledge, skills and attitudes necessary to competently expose and process diagnostically acceptable radiographs and to identify radiographic landmarks and radiographic evidence of dental disease processes. Students must demonstrate competent radiographic techniques on mannequins prior to performing supervised client exposures. Restricted to Dental students. Formerly DENX 106. Prereq. - DENH 110. Additional course fees: $20.00.

DENH 110 Oral Radiology (Cr2) (2:0)

Theories and principles of exposing, processing, mounting, and interpreting dental radiographs; anatomical landmarks and radiographic abnormalities; emphasis on radiation safety principles for both client and operator. Formerly DENX 505, DENX 110. Restricted to Dental students. Pre- or coreq.- DENH 105 and 106. students

DENH 150 Clinical Preventive Oral Health Services I (Cr3) (0:9)

Assessment, diagnosis, planning, implementation and evaluation of dental hygiene therapies for the client with gingivitis and early periodontal disease; continued development of competency in client assessments and instrumentation. Restricted to Dental students. Prereq. - DENH 103, 104, 106 and CPR certification; Coreq.- DENH 109, 152, and 153. Additional course fees: $65.00.

DENH 152 Preventive Oral Health Services I (Cr2) (2:0)

Foundational knowledge and skills for instrument sharpening, preventing gingivitis and dental caries; non-surgical periodontal therapies; recognizing and managing medical emergencies in the dental office; ethical issues affecting the practice of dental hygiene and dentistry. Restricted to Dental students. Prereq. - DENH 103 and 104; and Coreq. - DENH 150 and 153.

DENH 153 Periodontology (Cr2) (2:0)

The role of periodontal pathogens in relation to systemic diseases and the initiation and progression of gingival and periodontal diseases as they relate to: clinical signs, radiographic signs, microbiologic activity, risk factors, host immune response and pathogenesis and inflammatory response; dental hygiene therapies for gingivitis and early periodontitis. Restricted to Dental students. Prereq. - DENH 103 and 104; Coreq. - DENH 150 and 152.

DENH 154 Oral Health Care for Medically Complex Clients and Clients with Special Needs (Cr1) (1:0)

Develop skills to competently assess, treatment plan and manage clients who present medically complex health histories and/or special needs. Restricted to Dental students. Prereq. - DENH 103 and 104; Coreq. - DENH 150, 152 and 155.

DENH 155 General and Oral Pathology (Cr2) (2:0)

General principles of pathology; the specific etiology and treatment of oral manifestations of local and systemic pathological conditions; emphasis on the histological, clinical, and radiographical appearance of pathological conditions of the oral cavity; application to client assessment during clinical dental hygiene. Restricted to Dental students. Prereq. - DENH 105.

DENH 205 Nutrition for the Dental Health Care Provider (Cr2) (2:0)

Application of principles of basic nutrition to everyday life with an emphasis on the relationship between nutrition and health and disease; emphasis on the role nutrition plans in oral health; student skills to enable them to recognize nutritionally related dental disease and to provide dietary counseling for the prevention of further progression of the disease. Formerly DENH

145. Restricted to Dental students. Prereq. - CHEM 135.

DENH 206 Local Anesthesia (Cr2) (1.6:0.4)

Study of the anatomical, pharmacological and emergency considerations associated with the administration of local anesthesia in dentistry. Lab experiences prepare dental hygiene students to administer effective and safe infiltration and conduction anesthesia. Restricted to Dental students. Prereq.- DENH 150, 152 and 212; Coreq. - DENH 210.

DENH 210 Clinical Preventive Oral Health Services II (Cr4) (0:12)

Continued development of competency in clinical dental hygience; emphasis on the assessment, diagnosis, planning, implementation and evaluation of dental hygiene therapies for the client with early-moderate chronic periodontal disease; introduction of new skills: impression taking, study models, ultrasonic scaling, tobacco cessation, tooth whitening and intraoral camera imaging. Restricted to Dental students. Prereq. - DENH 109, 150, 152, 153, 155 and 212; Coreq. - DENH 211. Additional Course fees: $277.00.

DENH 211 Preventive Oral Health Services II (Cr3) (2:3)

Foundational knowledge and skills for impression taking, study models, tooth whitening, intraoral camera imaging, ultrasonic scaling, tobacco cessation counseling; legal and progessional issues affecting the practice of dental hygiene and dentistry; reading the dental literature. Restricted to Dental students. Prereq. - DENH 152 and 153; Coreq. - DENH 210.

DENH 212 Pharmacology (Cr2) (2:0)

A study of properties, actions, reactions, and dosages of drugs. Special emphasis will be placed on drug therapy common to the practice of dental hygiene. Restricted to Dental students. Prereq. - DENH 150.

DENH 220 Community Dental Health I (Cr1) (1:0)

Fundamentals of dental public health and oral epidemiology; introduction to school-based programs, dental health education and teaching methodologies; geriatric dentistry; students are required to participate in community-based dentral health activities. Restricted to Dental students.

DENH 240 Community Dental Health II (Cr1) (1:0)

Biostatistics, dental epidemiology and the role of government and dental hygienists in community dental health; application of fundamentals of scientific research methodology and biostatistics to the assessment, planning, implementation and evaluation of a community based dental education program; students continue to participate in community based dental health programs as outlined in DENH 220. Restricted to Dental students. Prereq. - DENH 220.

DENH 250 Clinical Preventive Oral Health Services III (Cr4) (0:12)

Continued practice toward entry-level competency in clinical dental hygiene for a variety of clients; emphasis on providing comprehensive dental hygiene care for periodontally involved clients. Restricted to Dental students. Prereq. - DENH 205, 210, 211. Additional course fees: $30.00.

DENH 251 Preventive Oral Health Services III (Cr2) (2:0)

Assessment, diagnosis, planning, implementation and evaluation of therapies indicated for moderate to advanced periodontal disease; dental implants; amalgam finishing and polishing; ergonomics; lasers; discussion of professional issues and responsibilities of the dental hygienist. Restricted to Dental students. Prereq. - DENH 211 and Coreq; - DENH 250.

DENH 291 Special Studies in Dental Hygiene (Cr1)

See statement on Special Studies. Offered on demand. Restricted to Dental students.

DENH 292 Special Studies in Dental Hygiene (Cr2)

See statement on Special Studies. Offered on demand. Restricted to Dental students.

DENH 293 Special Studies in Dental Hygiene (Cr3)

See statement on Special Studies. Offered on demand. Restricted to Dental

Diagnostic Medical

Sonography (DMSG)

DMSG 101 Fundamentals of Sonography (Cr2) (2:0)

Orientation to the hospital and sonography department; history of Sonography, roles and responsibilities of the sonographer, medical ethics, basic patient care and handling, nursing procedures and medical terminology. Restricted to DMS students. Additional course fees: $32.00

DMSG 103 Introduction to Acoustical Physics (Cr2) (2:0)

Review of reciprocal relations, variables, powers, exponential notation, conversion of units, proportionality, fractions and percentages, logarithms, simple trig and geometry, base 10 and binary. Introduction to waves, Simple Harmonic Motion, wave motion, interference, sound, Doppler, the Rat model of light, reflection and refraction, Snell's law. Restricted to DMS students. Pre- or coreq. - MATH 140. Additional course fees: $157.00.

DMSG 105 Acoustic Physics & Instrumentation I (Cr2) (2:0)

Basic acoustical physics, principles of ultrasound instruments, modes of operation, operator control options, frequency selection, and echogenic properties; emphasis on ultrasound transmission in soft tissues, attenuation of sound energy, parameters affecting sound transmission, and resolution of sound beams. Restricted to DMS students. Prereq. - MATH 140.

DMSG 110 Abdominal Sonography-Anatomy, Physiology, Imaging & Critique I (Cr4) (3:3)

Human anatomy in the transverse, longitudinal, and coronal planes with emphasis on the organs in the abdomen and pelvic cavity; extensive study of the disease processes and physiological alterations; sonographic methods to visualize adult and pediatric abdomens; normal variants, congenital anomalies, physiology, and related laboratory tests; technical information including procedural and scanning techniques. Restricted to DMS students. Prereq. - BIOS 204; Pre- or coreq. - BIOS 254.

DMSG 115 OB&GYN Sonography-Anatomy, Physiology, Imaging, & Critique I (Cr4) (3:3)

Obstetrical and gynecological anatomy; clinical applications and sonographic methods to visualize pelvic organs, the pregnant uterus, and related structures; comparison of normal sonographic patterns with identficaiton of pathology, physiology, differentials, and correlation with lab test and related organ development; technical information including procedural and scanning techniques. Restricted to DMS students. Prereq. - BIOS 204; Pre- or coreq. - BIOS 254.

DMSG 120 Clinical Practice I (Cr3) (0:16)

Application of sonographic scanning procedures in a hospital or clinic setting under the supervision of a qualified registered diagnostic sonographer; emphasis on liver, pancreas, gallbladder, superficial parts, pelvic areas, pregnant uterus, and related structures; production and interpretation of normal and pathologic sonograms of each area; film critique a critical component. Restricted to DMS students.

DMSG 125 Sectional Anatomy for Medical Imagers (Cr1) (1:0)

Human anatomy in the transverse, longitudinal, and coronal planes with application to sonography and other imaging modalities in radiology. Restricted to Radiography and Sonography students. Runs with RADT 125. Prereq. - BIOS 204; Pre- or coreq. - BIOS 254.

DMSG 155 Acoustic Physics & Instrumentation II (Cr3) (2:2)

Continuation of acoustical physics; interaction of ultrasound production and display, various transducer designs and construction, quality assurance/ control, bioeffects, image artifacts, techniques for recording static and dynamic images, methods of color flow, Doppler principles, and hemodynamics. Restricted to DMS students. Prereq. - DMSG 105.

DMSG 160 Abdominal Sonography-Anatomy, Physiology, Imaging, & Critique II (Cr4) (3:3)

Advanced study of human anatomy in the transverse, longitudinal, and coronal planes with emphasis on the organs in the abdomen and pelvic cavity; extensive study of the disease processes and physiological alterations; sonographic methods to visualize

adult and pediatric abdomens; normal variants, congenital anomalies, physiology, and related laboratory tests; technical information

including procedural and scanning techniques. Restricted to DMS students. Prereq.- DMSG 110.

DMSG 165 OB&GYN Sonography-Anatomy, Physiology, Imaging, & Critique II (Cr4) (3:3)

Advanced study of obstetrical and gynecological anatomy; clinical applications and sonographic methods to visualize pelvic organs, the pregnant uterus, and related structures; comparison of normal sonographic patterns with identification of pathology, physiology, differentials, and correlation with lab test and related organ development; technical information, including procedural and scanning techniques. Restricted to DMS students. Prereq.- DMSG 115.

DMSG 170 Clinical Practice II (Cr3) (0:16)

Continued application of sonographic scanning procedures in a hospital or clinic setting under the supervision of a qualified registered diagnostic sonographer with independent scanning when competency has been demonstrated; emphasis on liver, pancreas, gallbladder, superficial parts, pelvic areas, pregnant uterus, and related structures; production and interpretation of normal and pathologic sonograms of each area; film critique a critical component. Restricted to DMS students. Prereq. - DMSG 120.

DMSG 215 Small Parts and Special Topics (Cr2) (2:0)

Application and use of ultrasound in the imaging of superficial organs and structures such as the thyroid and parathyroid glands, breasts, extremities, and scrotum; histologic aspects of various pathological conditions correlated with acoustical properties and ultrasound characteristics. Recent applications, skills, knowledge, and/or attitudes and behaviors pertinent to the technology or

occupation and relevant to the professional development of the student. Restricted to DMS students.

DMSG 220 Clinical Practice III (Cr3) (0:16)

Continued application of sonographic scanning procedures; student to demonstrate full competency and progress to full independence under the supervision of a qualified registered diagnostic sonographer; emphasis on identification of pathology, and sonography of abdominal, small parts, and obstetrical-gynecological areas; rotations in the practice of peripheral vascular exams and other specialties within the field may be arranged; film critique a critical component. Restricted to DMS students. Prereq. - DMSG 170. Additional course fees: $32.00

DMSG 230 Clinical Practice IV (Cr3) (0:24)

Application of sonographic scanning procedures in a hospital or clinical setting under the supervision of a certified registered diagnostic medical sonographer; emphasis on liver, pancreas, gall bladder, superficial structures, pelvic areas,pregnant uterus and related structures; production and interpretation of normal and pathological sonograms of each area; film critique a critical component. Restricted to DMS students. Prereq. - DMSG 220.

DMSG 240 Clinical Practice V (Cr5) (0:40)

Final period of clinical study; student to demonstrate full competency and progress to full independence under the supervision of a qualified registered diagnostic sonographer; emphasis on identification of pathology, and sonography of abdominal, small parts, and obstetrical-gynecological areas; rotations in the practice of peripheral vascular exams and other specialties in the field may be arranged; film critique a critical component. Restricted to DMS students. Prereq. - DMSG 230.

Dietary Management (DIET)

DIET 101 Dietary Management: Nutrition (Cr4) (3:4)

This 10 week course will cover the nutritional aspects of the Dietary Manager position in the food service industry in a non-commercial facility (school, correctional facility, healthcare facility). The field experience will help the Dietary Manager student to apply the theoretical knowledge to the experiential learning in normal and therapeutic nutrition principles. Coreq.- working 20 hours or more in the healthcare food service industry. Additional course fee: $13.00.

DIET 105 Dietary Management: Administration and Personnel Management (Cr4) (3:4)

This 10 week course is an introduction to food service management, human resource development, communication, staffing, scheduling, leadership, marketing, managing change, financial management and professional development. The field experience in the food service industry allows the student to integrate key administration and personnel concepts into the Dietary Manager role and responsibilities. Prereq.- DIET 101; Coreq.- working 20 hours or more in the healthcare food service industry.

DIET 110 Dietary Management: Systems Management and Food Safety (Cr4) (3:4)

This 10 week course addresses menu planning and recipes, sanitation and safety, purchasing, receiving, inventory management, facility layout design and equipment, food production and service, and evaluation of food and nutrition. The field experience in the food service industry allows the student to integrate key concepts of System Management and Food Safety Dietary Manager role and responsibilities. Prereq. - DIET 101 and 105; Coreq.- working 20 hours per week in the healthcare food service industry. Also available through Online Learning

Early Childhood Education (EARL)

EARL 102 Introduction to School Age Child Care (Cr3) (3:0)

Students use observation and assessment to learn about the development of children and youth; and to plan school-age programs, including effective interaction strategies and appropriate learning/ recreation environments that support the development, ability and interest of each youth. Assignments require access to school-age child care programs. Also available through Online Learning.

EARL 103 Society and the School Age Child (Cr3) (3:0)

Students learn about the role of families, communities and culture in the development of children and youth. Dominant theories of children's social-emotional development, crises in children's lives, and developmentally appropriate responses will be introduced. Family communication and support, cultural competence, the importance of inclusive teaching practices and respect for diversity are central themes. Assignments require access to school-age child care programs. Also available through Online Learning.

EARL 104 School Age Child Care Professional (Cr3) (3:0)

Students learn to use the professions' Code of Ethics and Standards as a basis for developing a professional identity. Management and leadership skills required for working collaboratively to ensure a quality program, and advocacy skills for improving the condition of before and after schoool programs are included. Assignments require access to school-age child care programs. Also available through Online Learning.

EARL 105 Early Childhood Visual Arts (Cr3) (2:2)

Students learn theories and milestones of artistic and fine motor development in children aged birth to eight and the visual arts as a language children use to represent, express and create. Standards-based visual arts curriculum, preparation of universally designed aesthetic environments, and collaboration with families and community arts organizations are studied. Students apply learning in 10 weekly field experiences (labs). Pre- or coreq. - EARL 109. Also available through Online Learning. Additonal course fees: $10.00.

EARL 106 Early Childhood Development and Learning (Cr3) (3:0)

Students learn child development theories and milestones birth to age 9 with a focus on cultural and developmental variation. Students also learn inclusive teaching skills and strategies for all children including English Language Learners (ELL). Developing reciprocal relationships with families is a foundational skill. Requires five observational visits to a variety of educational settings, infant/toddler through grade 4. Also available through Online Learning.

EARL 107 Observation and Assessment (Cr3) (3:0)

Students learn methods for observing, documenting and assessing children's learning from birth to age 9. Students are introduced to learning standard and assessment tools for evaluating safe and healthy indoor and outdoor learning environments emphasizing universal design and aesthetics. Requires five observational visits to a variety of educational settings - infant/toddler through grade 4. Pre- or coreq. - EARL 106. Also available through Online Learning.

EARL 109 Introduction to Early Childhood Education (Cr3) (3:0)

Students learn child development theories and milestones in children from age birth to eight. Introduction to observation and assessment; inclusive teaching skills, strategies and environments that are universally designed; ethical guidelines and professionalism; early childhood systems, trends, curriculum models; and development of relationships with families are incorporated as foundational skills. Observation visits to several early childhood settings are required. Also available through Online Learning.

EARL 112 Early Childhood Language and Literacy (Cr3) (2:2)

Students learn theories and milestones of language and literacy development in children aged birth to eight. Standards-based language arts curriculum, preparation of language-rich, universally designed environments, and collaboration with families and community literacy organizations are studied. Students apply learning in 10 weekly field experiences (labs). Pre- or coreq. - EARL 109. Also available through Online Learning. Additional course fees: $10.00.

EARL 113 Fundamental Family Support Techniques (Cr3) (3:0)

Experience in practical application of skills for family support workers; emphasis on Dr. William Glasser's Choice Theory as a way of understanding individual and family dynamics, family case histories, and the development of skills for joint problem solving approaches to increasing family effectiveness; students explore the relationship between self-esteem development and the experience of poverty in America and practice interviewing, critical reflection, and developing helping relationships. Designed for Head Start employees only.

EARL 114 Advanced Family Support Techniques (Cr3) (3:0)

Designed to offer practical application of skills for Family Support staff and Teachers. Course will examine the intersect between genetic, developmental, and environmental impacts on understanding communication, conflict, and negotiation between family system. Emphasis will be placed on understanding communication, conflict, and negotiation within family relationships from a Choice Theory perspective. Students will practice interventions that positively affect the ability of family members to make sustained change to improve parenting outcomes and familial relationships. Designed for Head Start employees only. Prereq. - EARL 113.

EARL 122 Early Childhood Music and Movement (Cr3) (2:2)

Students learn theories and milestones of musical and motor development in children aged birth to eight, and the musical arts as a language children use to represent, express and create. Standards-based music, dance, drama and physical education curriculum, preparation of universally designed aesthetic environments, and collaboration with families and community music, theatre, and fitness organizations are studied. Students apply learning in 10 weekly field experiences (labs). Pre- or coreq. - EARL 109. Also available through Online Learning. Additional course fees: $10.00.

EARL 126 Early Childhood Arts (Cr3) (2:2)

Students learn that the arts are symbol systems for representing and constructing meaning. Students learn arts standards and the stages of children's artistic development within cultural contexts. They create and implement arts-integrated learning experiences and aesthetic environments emphasizing universal design for children birth to age 9. Students assess children's learning and build reciprocal partnerships with families, arts specialists and arts organizations. Requires 10 weekly field experiences (labs)in classrooms serving children PreK to grade 4. Prereq. - EARL 106. Completion of EARL 107 is recommended. Also available through Online Learning. Additional course fees: $10.00.

EARL 128 Infant-Toddler Development and Learning (Cr3) (2:2)

Students learn developmental theories and milestones of children aged birth to 3 including cultural and developmental variation. Students learn standards for infants and toddlers and strategies for supporting and extending their learning. Students create healthy and safe learning experiences and environments that emphasize universal design. They assess learning and build reciprocal partnerships with parents. Students apply learning in 10 weekly two hour field experiences (labs). Prereq. - EARL 106. Completion of EARL 107 is recommended. Also available through Online Learning. Additional course fees: $10.00.

EARL 130 Introduction to Young Children with Disabilities (Cr1) (1:0)

Provides students with understanding of disabilities and application of laws that impact early childhood educators.

EARL 131 A.D.A. and Early Childhood Education (Cr1) (1:0)

Provides students with an understanding of the Americans with Disabilities Act (ADA) as it applies to early childhood education.

EARL 132 Family/School Collaboration for Young Children with Disabilities (Cr1) (1:0)

Awareness and understanding of both educator and parent perspective with regard to educating and parenting a child with disabilities; methods for developing a collaborative relationship through positive communication.

EARL 133 Fostering Social-Emotional Competency in Young Children with Disabilities (Cr1) (1:0)

Intervention strategies for maximizing the social and emotional competencies in young children with disabilities and for preventing and responding to problem situations.

EARL 134 The Inclusive Classroom Environment (Cr1) (1:0)

The important role of the physical environment and the social dimensions of a classroom which includes children with disabilities; techniques and strategies for adapting the physical space, selecting and/or modifying materials, creating a positive climate and developing peer support networks.

EARL 135 Planning Curriculum for Young Children with Disabilities (Cr1) (1:0)

Curriculum planning strategies for including children with disabilities.

EARL 155 Introduction to Family Child Care (Cr3) (3:0)

Students are introduced to the use of child development principles, theories, and milestones as the basis for being a professional family child care provider. Students learn to modify their home environment to provide developmentally appropriate, arts-integrated and inclusive learning experiences. Ethical guidelines, systems, trends and curriculum models are included. Observation and assessment techniques, interaction skills and strategies, and the development of respectful and reciprocal relationships with families are learned as foundational skills. Child Development Associate (CDA) portfolio and advisor are required if applying for a CDA from the Council for Professional Recognition. Also available through Online Learning.

EARL 156 Society and the Child in Family Child Care (Cr3) (3:0)

Students learn about family child care as an extension of the family and its connection into the community. Social-emotional milestones and theories related to attachment, autonomy, self-esteem and developmentally appropriate responses will be introduced. The development of cultural competence, social problem solving, access to and use of community resources are major themes. Child Development Associate (CDA) portfolio and advisor are required if applying for a CDA from the Council for Professional Recognition. Prereq.- EARL 155. Also available through Online Learning.

EARL 157 Family Child Care Professional (Cr3) (3:0)

Students appropriate practices, including business practices and other professional guidelines, as a foundation for developing and maintaining a professional program and identity. Students use strategies to manage an effective family child

care program, including a business plan, effective recordkeeping and strategic planning. Learning for EARL 155, 156, and 157 are integrated through a final portfolio to document the student as a professional that engages in continuous, collaborative learning to inform, and advocate for best practice. Child Development Associate (CDA) portfolio and advisor are required if applying for a CDA from the Council for Professional Recognition. Prereq.- EARL 156. Also available through Online Learning.

EARL 160 Child Care Health Advocate (Cr3) (3:0)

This course prepares the Child Care Practitioner to function in the role of a Child Care Health Advocate (CCHA), and will address 15 different health and safety modules as a resource for child care directors, teachers, assistant teachers, and child care practitioners. The CCHA that will be working in a child care setting will learn to assess, identify, and prioritize health and safety needs of children and staff. The participant learns their role in participating in health and safety activities to ensure activities occur in their facility. This course will also link the CCHA in a child care setting with a registered nurse child care health consultant. Also available through Online Learning.

EARL 178 Out of School Programming for Middle School Youth (Cr3) (3:0)

Skills and knowledge for staff working with, or intending to work with, middle school aged youth in out of school programs; developmental needs, program implementation strategies, planning and working with parents. Also available through Online Learning.

EARL 202 Society and the Child (Cr3) (3:0)

Students learn the role of families, communities and culture in the development of children aged birth to eight. Dominant theories of children's social-emotional development, pro-social behavior and conflict resolution, crises in children's lives, and developmentally appropriate responses are introduced. Family communication and support, cultural competence, the importance of inclusive teaching practices, and respect for diversity are themes. Child and Family Study project is required. Pre- or coreq. - EARL 109. Also available through Online Learning.

EARL 208 Early Childhood Math (Cr3) (2:2)

Students learn that mathematics is used to represent and construct meaning through problem solving and reasoning. Students learn the theories and milestones of logical mathematical development within cultural contexts. They create, implement standards-based mathematics learning experiences and environments emphasizing universal design for children birth to age 9. Students assess children's learning and build reciprocal partnerships with families to support and extend children's mathematical thinking. Requires 10 weekly field experiences (labs) in classrooms serving children PreK to grade 4. Prereq. - EARL 106. Completion of EARL 107 is recommended. Additional course fees: $10.00.

EARL 215 Early Childhood Science and Math (Cr3) (2:2)

Students learn developmental theories and milestones of logical mathematical and scientific thinking in children aged birth to eight, math as a language children use to present, express and construct, and science as inquiry for learning about the physical and natural world. Standards-based science and math curriculum including universally designed aesthetic environments, and collaboration with

families and community science organizations are studied. Students apply learning in 10 weekly field experiences (labs). Pre- or coreq. - EARL 109. Also available through Online Learning. Additional course fees: $10.00.

EARL 216 Childhood Literacy and Language (Cr3) (2:2)

Students learn children's use of language for representing and constructing meaning. Students learn literacy standards and stages of children's language development within cultural contexts. They create and implement literacy learning experiences and environments emphasizing universal design for children birth to age 9. Students assess children's learning and build reciprocal partnerships with families, speech and reading specialists, librarians and community resources to support and extend language and literacy development. Requires 10 weekly field experiences (labs) in classrooms serving children PreK to grade 4. Prereq. - EARL 106. Completion of EARL 107 is recommended. Additional course fee: $10.00.

EARL 217 Child, Family and Communities (Cr3) (3:0)

Students learn the role and influence of families, culture and communities in the development of young children. Dominant theories of children's social-emotional development, prosocial behavior and conflict resolution, crises in children's lives, and developmentally appropriate responses are introduced. ELL competencies related to family communication and support, cultural competence, and respect for diversity are studies. Prereq. - EARL 106. Completion of EARL 107 is recommended.

EARL 218 Early Childhood Science (Cr3) (2:2)

Students learn that science is the study of the physical and natural world through observation and experimentation. Students learn the development of children's scientific thinking within cultural contexts. They create and implement standards-based science learning experiences and environments emphasizing universal design for children birth to age 9. Students assess children's learning and build reciprocal partnerships with families and community resources to support and extend children's scientific thinking. Requires 10 weekly field experiences (labs) in classrooms serving children PreK to grade 4. Prereq. - EARL 106. Completion of EARL 107 is recommended. Additional course fees: $10.00.

EARL 220 Infant Toddler Care and Education (Cr3) (2:2)

Students learn developmental theories and milestones of children aged birth to three. Standards-based infant/toddler curriculum; preparation of healthy, safe, universally designed aesthetic environments; and collaboration with families are studied. Students apply learning in 10 weekly field experiences (labs). Pre- or coreq. - EARL 109. Also available through Online Learning. Additional course fees: $10.00.

EARL 231 Organization and Administration of Early Childhood Programs (Cr3) (3:0)

Application of child development knowledge, state regulations and national standards to organization and administration of high quality early childhood programs; to collaborate with families, school districts and communities and to engage in strategic planning. Designed for current and future directors of child care/child development centers, Head Start programs and community-based pre-kindergarten and kindergarten programs. Prereq. - 15 credits in Early Childhood Education or departmental approval. Also available through Online Learning.

EARL 232 Leadership Seminar in Early Childhood Education (Cr3) (3:0)

Focus on program director's leadership role in creating environment that supports professionalism, ethics, advocacy, strategic planning, and leadership development for self, staff, and board members. Survey of current issues, trends, problems, and resources related to education and care of young children. Designed for current and future directors and owners of community child care/ child development programs, Head Start programs, and pre-kindergarten programs. Prereq. - 15 credits in Early Childhood Education/Child Development, or department approval. Also available through Online Learning.

EARL 244 Early Childhood Profession (Cr3) (3:0)

Students learn early children systems, trends, and curriculum models. English Language Learner (ELL) professionalism competencies and the NAEYC Code of Ethics are used to analyze ethical dilemmas. Professional communication, self-assessment, and professional growth are emphasized. Students learn their role as informed advocates for all children, their families and sound educational practices and policies. Prereq. - EARL 106 and one other EARL course. Completion of EARL 107 is recommended.

EARL 254 Internship (Cr3) (1:6)

Interns apply their knowledge about children's development; partner with families and communities; observe and assess children's learning; develop and implement curriculum, universally designed aesthetic environments, and learning experiences that support and inspire all children; and ethical guidelines and professional standards. Six hours a week of field experiences implementing assignments in an early childhood setting in collaboration with a cooperating

teacher, and a 1 hour weekly seminar are required. Prereq.- EARL 105, 109, 112,122, 202, 215, 220 all with a grade of C or better. Also available through Online Learning. Additional course fees: $10.00.

EARL 256 Internship (Cr6) (2:13)

Interns apply and synthesize their knowledge about children's development; partner with families and communities; observe and assess children's learning; develop and implement curriculum, universally designed aesthetic environments, and learning experiences that facilitate inclusive practices; and ethical guidelines and professional standards. Students implement assignments in collaboration with a cooperating teacher. Thirteen hours working with children and a 2-hour seminar are required weekly. An Action Research Project and Program Assessment Portfolio are also required. Prereq.- EARL 105, 109, 112, 122, 202, 215, 220 all with a grade of C or better. Also available through Online Learning. Additional course fees: $10.00.

EARL 263 Internship-Early Childhood (Cr3) (2:10)

Interns apply and synthesize their knowledge of children's development and learning within various cultural contexts. They create and implement standards-based learning experiences and aesthetic environments that integrate all curricular areas. They use assessment tools to evaluate children's learning and action research to identify and investigate one aspect of their classroom practice. Requires 10 hours working with children, a 2 hour weekly seminar, Action Research Project and Program Assessment Portfolio. Prereq. - EARL 106, 107, 126, 128, 208, 216, 217 all with a grade of C or better; Coreq. -EARL 218 and 244. Additional course fees: $10.00.

EARL 275 The Early Childhood Professional (Cr3) (3:0)

Students learn regulations, public policies, professional standard, and ethical guidelines for the early childhood profession. The NAEYC Code of Ethics is used to analyze ethical dilemmas. Professional communication, self-assessment and advocacy for one's own personal and professional growth is a theme. An advocacy project that explores the role of the teacher as advocate for children, families, and best educational practices is required. Prereq.- EARL 109 and one other 3 credit EARL course. Also available through Online Learning.

EARL 291 Special Studies in Early Childhood Education (Cr1)

See statement on Special Studies. Offered on demand.

EARL 292 Special Studies in Early Childhood Education (Cr2)

See statement on Special Studies. Offered on demand.

EARL 293 Special Studies in Early Childhood Education (Cr3)

See statement on Special Studies. Offered on demand.

EARL 294 Special Studies in Early Childhood Education (Cr4)

See statement on Special Studies. Offered on demand.

Economics (ECON)

ECON 201 Macroeconomics (Cr3) (3:0)

Basic concepts of economics, demand and supply analysis in market economy; business cycle, unemployment, inflation, GDP and its determinants, fiscal policy, US banking system and money supply, monetary policy, national and global current economic issues. Also available through Online Learning.

ECON 251 Microeconomics (Cr3) (3:0)

Basic concepts of demand and supply; elasticities of demand and supply and their applications; consumer behavior, production and pricing policies of the firm under different models, i.e., perfect competition, monopoly, monopolistic competition, oligopoly; resource pricing policies, unions and labor markets; market imperfections and externalities; domestic and global current microeconomic issues. Also available through Online Learning.

ECON 291 Special Studies in Economics (Cr1)

See Statement on Special Studies. Offered on demand.

ECON 292 Special Studies in Economics (Cr2)

See Statement on Special Studies. Offered on demand.

ECON 293 Special Studies in Economics (Cr3)

See Statement on Special Studies. Offered on demand.

Education (EDUC)

EDUC 101 Foundation of Education (Cr3) (3:0)

Broad-based overview of the field of professional education; philosophy, history, structure, organization, questions, and issues of education. Not a course in child development, learning theory, or teaching practice, but a foundation or background experience in preparation for success in future education courses. Students will begin to develop the analytical skills of reflective teaching practice in creating a portfolio and completing two field observations. Prereq. - Reading and writing competency as determined for ENGL 101.

EDUC 105 Praxis I Preparation (Cr1) (0:2)

Course presents a broad-based review of basic concepts and knowledge in reading, writing, and mathematics. Helps pre-service teachers to prepare to successfully complete the required national test, Praxis I Pre-Practice Skills Test (PPST). Prereq. - EDUC 101 or 115 or EARL 106 or 109.

EDUC 115 Education for All Students (Cr3) (3:0)

Broad-based overview of professional education: including philosophy, history, organization, ethics, and current issues of education. The course focuses on the effective teaching of all students with an introduction to important theorists, child development, and diversity. The unique characteristics and needs of English Language Learners will be presented. Student will create a portfolio and complete 10 hours of field experiences. Prereq. - Reading and Writing competency as determined for ENGL 101.

EDUC 200 Praxis II: Biology (Cr3) (3:0)

Designed for special education and middle school teachers as a review of introductory biology. A survey review of topics include: scientific method, foundational genetics, biochemistry and plant and animal structure and function, basic human anatomy/physiology and ecologic themes and patterns. This course prepares practicing professionals to successfully pass the Praxis examination for Biology.

EDUC 206 Assessment and Evaluation (Cr3) (3:0)

Students will learn how to develop and use a variety of evaluation methods to monitor student academic achievement and teaching effectiveness. Special emphasis will be placed on relating evaluations to curriculum and instruction. Students will learn about standardized tests and other diagnostic tools frequently encountered and/or used by classroom teachers. Particular attention will be given to adapting assessments to meet the needs of all students. Students will plan, construct, administer, and analyze data from a diagnostic evaluation of achievement for a content unit. Contemporary issues related to testing, grading, evaluation, and accountability will be addressed. Enrollment restricted to vo-tech teachers.

EDUC 252 Educational Psychology (Cr3) (3:0)

Emphasis on the child as student and learner in the classroom; overview of research implications for learning and teaching; cognitive learning theory, behavioral learning theory and motivational learning theory applied to teaching in today's classrooms. Classroom discussions and observation field experiences develop beginning skills in analyzing classroom dynamics. Students create a pre-professional portfolio designed to develop skills for reflective teaching practice. Prereq. - EDUC 101 or 115.

EDUC 255 Education Field Experience (Cr2) (1:2)

Pre-practice observation and teaching experiences in school classrooms; structured observations and assistance in implementation of teaching activities; practical experience in and developing an understanding of how schools work, what effective teaching is and the relationship of learning theory and teaching practice; documentation of the field experience by a completed professional portfolio. Applicable only to the Education program. Restricted to Education Students. Prereq. - EDUC 101, PSYC 103, a grade of C or better in EDUC 252 and a clear criminal background report as required by Acts 34 and 151. Non PA residents require FBI clearance.

EDUC 256 Effective Use of Instructional Technology in Classrooms (Cr3) (3:0)

This course focuses on educational applications of basic instructional technology skills to enhance the integration of technology into the classroom in an effort to foster effective teaching and learning, with special emphasis on the K-12 learner. Students learn how to develop instructional materials and classroom administrative resources, to evaluate resources and web sites for their respective subject matter areas and grade levels, and to apply fundamental knowledge of troubleshooting basic hardware and software problems. Prereq. - EDUC 101.

EDUC 291 Special Studies in Education (Cr1)

See Statement on Special Studies. Offered on demand.

EDUC 292 Special Studies in Education (Cr2)

See Statement on Special Studies. Offered on demand.

EDUC 293 Special Studies in Education (Cr3)

See Statement on Special Studies. Offered on demand.

Electrical Technology (ELTC)

ELTC 107 Electrical Wiring I (Cr2) (1.5:1)

Practices of electrical wiring with a focus on residential single and multi-family dwellings; project planning, materials calculation, and NEC-based installation and wiring practices. Formerly ELTC 807. Prereq. - EMEC 101.

ELTC 109 Electrical Wiring II (Cr3) (3:1)

Practices of electrical wiring with a focus on commercial buildings; project planning, materials calculation, and NEC-based installation and wiring practices. Formerly ELTC 809. Coreq. - ELTC 107.

ELTC 110 Electrical Construction Technology I (Cr6) (4:5)

An introduction to electrical construction for the apprentice. Covers electrical fundamentals of circuit operation, electrical/electronic devices, calculations for series/parallel circuits, single-phase three wire systems, overcurrent and ground fault devices, electrical generation, print reading and introduction to the National Electrical Code. Emphasis on worker safety and proper tool usage.

ELTC 120 Electrical Construction Technology II (Cr6) (4:5)

Covers guidelines to interpret the NEC, using multimeters and oscilloscopes, three-phase circuits, DC and AC generators, capacitors, diodes and rectifiers, analysis and layout of residential circuits, and advanced conduit bending. Prereq. - ELTC 110.

ELTC 211 National Electrical Code (Cr4) (4:0)

Preparation for the Masters License Examination including interpretation and application of the current release of the National Electrical Code. Covers calculations; branch and feeder circuits; service entrances; switches, switch boards and panel boards; general equipment; motor circuits, transformers, and welders. Prereq.- ELTC 109 or permission of instructor.

ELTC 222 Solar Photovoltaic Systems I (Cr3) (2:2)

This is an introductory course in the study of Solar Photovoltaic (PV) systems and components including system design and sizing for single residences, multifamily residences and light commercial applications; solar electric products and applications; energy conversion from sunlight to electricity; and operation of solar conversion equipment. After completing this course, students are eligible to take the North American Board of Certified Energy Practitioners (NABCEP) PV Level Certificate of Knowledge Exam. Prereq. - EMEC101.

ELTC 230 Electrical Construction Technology III (Cr6) (4:5)

Covers the basic application of mathematical analysis to solve AC/DC circuit problems, series and parallel resonance, control print reading, basic discrete solid state devices with amplifier and control applications, grounding and bonding equipment and systems, and overcurrent protection devices. Prereq. - ELTC 120.

ELTC 240 Electrical Construction Technology IV (Cr6) (4:5)

Covers lightning protection, introduction to optoelectronics, AC and DC motor construction, operation and installation, AC and DC motor controls, drives and clutches, introduction to Boolean algebra, logic gates and digital circuits, AC and DC drives, PLC basics, air conditioning and refrigeration basics, and conductor and motor sizing. Prereq. - ELTC 230.

ELTC 250 Electrical Construction Technology V (Cr6) (4:5)

Covers operating principles and maintenance of alarm systems, instrumentation, instrumentation control devices, and security systems; installation of telephone and cable wiring; fundamentals of solar power systems; locating cable faults; high voltage testing; NEC calculations and competency examination preparation. Prereq. - ELTC240.

ELTC 260 Electrical Construction Practicum (Cr2) (2:0)

Work experience at an approved electrical contracting firm providing exposure to low and mid-level positions. Writing and presenting research, and analysis of a complete electrical installation project. The tasks will be consistent with the course work of the preceding semester. Prereq.- completion of the first three semester technical courses in the Electrical Construction Technology degree program.

ELTC 265 Electrical Cabling Systems I (Cr3) (2:2)

Covers operating principles, installation and maintenance of home automation controls, communication systems, entertainment systems, security, and lighting systems; installation of fiber optics and basic networking.

Electromechanical Technology (EMEC)

EMEC 101 Electrical Fundamentals (Cr3) (2:2)

Provides a foundation of knowledge in electricity. Covers fundamental electrical concepts, EMF, current, resistance, power, AC and DC series and parallel circuit operation and analysis, inductance, capacitance, meter usage, schematics, and circuit component operation. Industrial safety stressed and math applications are reviewed. Practical lab application of concepts.

EMEC 105 Introduction to Fluid Power (Cr3) (2:2)

Description of basic fluid systems and introduction to hydraulic and pneumatic component hardware; work, energy, and power introduced and applied to the fluid power system. Prereq. - MATH 022 with a C or better or appropriate competence as determined by the mathematics placement test.

EMEC 110 Mechanical Components (Cr4) (3:2)

Types of components and fasteners; tool usage; operation and servicing of basic components and assemblies such as belts, chains, gear drives, bearings, seals, and couplings; component application to achieving different types of motion in automation and robotic manipulators. Prereq.- ENGG 117.

EMEC 115 Mechanical Skills for Technicians (Cr1) (0:2)

Covers types of components and fasteners; hand tool usage; basic operation of hand power tools, measurement and layout applied to basic electromechanical projects. Only one of EMEC 110 or EMEC 115 may be applied to graduation in Electromechanical Technology.

EMEC 120 Process Data Acquisition & Analysis (Cr2) (2:0)

Learn the application of data acquisition sensors, equipment and computers for automated process data acquisition and analysis as an essential tool to succeed as a process automation operator. Principles and methods of process data acquisition and the analysis of the acquired data will be covered, as well as use of computer software to capture, analyze and create charts and graphs of process data. Ideal for operators or technicians working in the biotechnology, pharmaceutical, chemical, food processing or related industry. Coreq. - CISC 101 or 100 or permission of the instructor.

EMEC 121 Automation Concepts (Cr3) (2:2)

This course provides automation operators and technicians with an understanding of current automation technology as used in the process control industry. Covers basic instrumentation types, introduction to programmable logic controllers, human machine

interface (HMI), numbers systems, control loops and fundamentals of AC and DC electricity. Prereq. - EMEC 120 or permission of the instructor.

EMEC 122 Process Automation Diagrams-P&ID (Cr3) (3:0)

Read and understand Piping & Instrumentation Drawings (P&ID) also know as Process & Instrumentation Diagrams or Process and Control Diagrams. Identify symbols and function labels commonly found on P&IDs, describe how system components are related and trace process piping and control loop functions. Coreq.- EMEC121 or permission of the instructor.

EMEC 135 Electrical Motors and Controls (Cr4) (3:2)

Concepts of electricity, electronics and controls related to industrial applications; industrial control devices and sensors; relays and electromechanical control; electrical diagrams; transformers and power distribution; solid state power devices; motors, starters and drives; AC/DC motor control; process control fundamentals. Prereq. - EMEC 101.

EMEC 240 Industrial Control Systems I (Cr4) (3:2)

Logic concepts, number systems, relay ladder logic, timing and counting, control system theory, programmable logic controller operation, application, programming and troubleshooting; control cabinet layout, wiring and installation, advanced programming including math instructions, data manipulation, subroutines and error handling. Prereq. - EMEC 135 or ELEC 235 and CISC 101 or OFAD 147.

EMEC 245 Industrial Control Systems II (Cr3) (2:2)

Analog control systems, PLC analog control systems including setpoint and PID control operation and programming; networking PLC's, information exchange, peer to peer, peer to host, host to peer communications; operator interfaces, human machine interface (HMI). Prereq. - EMEC 240.

EMEC 247 Instrumentation, Process Control & Measurement Systems (Cr4) (3:2)

Terminology, symbology, operation, connectivity of instrumentation, computers and human machine interface (HMI) used in the measurement and control of flow, level, temperature, pressure, pH, valves, transducers and transmitters as used in automated process control systems. Detailed theory and operation of flow, level, temperature and pressure measurements with minimal math background. Coreq.- EMEC 122 and prereq.- evidence of score of 500 or higher on SAT mathematics exam or 11th grade PSSA mathematics score of 1300 or higher, or completion of MATH026 or 028 with C or better or appropriate competence in MATH 150 as determined by the mathematics placement test, or permission of the instructor.

EMEC 253 Electromechanical Systems I (Cr4) (3:2)

Operation, diagnostics, repair, and modification of automation with emphasis on advanced mechanical and fluidic systems found in industrial robotics, conveyors, CNC, packaging machinery, casing machinery, and plastics molding equipment. Preventative maintenance and applicable OSHA safety standards. Pre- or coreq. - EMEC 105, 110, and 135.

EMEC 254 Electromechanical Systems II (Cr4) (3:2)

Operation, diagnostics, repair, and modification of automation technology with emphasis on advanced electronic control systems and data communications found in industrial robotics; palletizers; CNC; filling, cartoning, barcoding, and weighing equipment; hands-on approaches to overall system diagnostics and upgrade. Prereq. - EMEC 240 and 253.

EMEC 260 Electromechanical Technology Practicum (Cr2) (0:0:8 practicum)

Actual work shadowing experience in manufacturing or service organizations providing exposure to the maintenance and/or engineering functions involved in modern factory automation design, installation, and servicing; written analysis of equipment problems and maintenance planning. Pre- or coreq. - completion of all other technical courses in Electromechanical Technology degree program.

EMEC 281 Independent Electromechanical Study (Cr1) (0:2)

Independent study in an advanced topic in electromechanical technology under close supervision of the Electromechanical Technology faculty; conducted primarily in a working lab environment, project requires the student to research information, collect and interpret data, and present the conclusions in written and oral form. Prereq. - EMEC 253.

EMEC 282 Independent Electromechanical Study (Cr2) (0:4)

Independent study in an advanced topic in electromechanical technology under close supervision of the Electromechanical Technology faculty; conducted primarily in a working lab environment, project requires the student to research information, collect and interpret data, and present the conclusions in written and oral form. Prereq. - EMEC 253.

Electronics Technology (ELEC)

ELEC 101 DC/AC Circuit Analysis I (Cr4) (3:3)

Introduction to the fundamentals of DC and AC circuit theory. Topics include: definition of voltage, current, resistance, and power; Ohm's and Kirchhoff's laws; and series and parallel circuit analysis. Concepts of magnetism and sine waves as they relate to electronics are introduced. Lab work emphasizes schematic reading, equipment operation, and data taking. Prereq. - Evidence of score of 500 or higher on SAT mathematics exam or 11th grade PSSA mathematics score of 1300 or higher, or completion of MATH 026 or 028 with C or better or appropriate competence in mathmetics as determind by the mathmatics placement test.

ELEC 121 Technical Computer Applications (Cr2) (2:0)

Application of computer tools essential for success in electronics technology. Use of multiSIM schematic capture software to produce machine-drawn circuit diagrams. Computer image manipulation and use of Analysis ToolPak for date reporting (tables, graphs, and statistics.) Documentation standards will be stressed throughout the course. Prereq.- Navigational and file management in the Windows environment.

ELEC 126 Digital Electronics I (Cr3) (2:2)

First course in digital electronics. Includes: number systems, combination logic gates, Boolean theorems, flip-flops, counters, arithmetic circuits, display interface, and data storage and transfer. Basic characteristics of TTL and CMOS digital ICs are introduced. Labs emphasize the analysis, prototyping, and troubleshooting of digital circuits. Prereq.- ELEC 101.

ELEC 130 Computer Systems and Applications I (Cr4) (3:2)

Detailed structure, applications and operation of personal and mainframe computer systems covering system components, system software and operation, common application software, solid-state devices, tools and equipment, preventative maintenance, basic system and hardware troubleshooting.

ELEC 131 Introduction to Networking Hardware (Cr2) (1:2)

Companion course to ELEC 130 to give a jump-start to students who already grasp the general concepts of PC repair and troubleshooting, but would like to focus attention in starting toward NET+ certification studies and an introduction to networking hardware components and the OSI model; networking equipment includes NICs, hubs, switches, routers and cabling, along with network topologies and the OSI model. Pre- or coreq- ELEC 130.

ELEC 151 DC/AC Circuit Analysis II (Cr4) (3:3)

In-depth study of DC and AC circuit concepts. Network theorems and mathematical solutions are applied to DC circuits. Response of resistors, capacitors, and inductors in both DC and AC circuits is detailed, emphasizing application and frequency response. Labs emphasize the use of equipment, data taking and reporting. Prereq.- ELEC 101; Pre- or coreq.- MATH 140 and ELEC 121.

ELEC 155 Introduction to Solid State Devices (Cr2) (1:2)

Introduction to discrete solid state devices; diodes and bipolar and MOS transistors. Emphasis is on basic component characteristics and analysis in DC circuits. Labs will emphasize component specifications and typical circuit configurations. A power-supply project will introduce the student to more extensive schematics and the

application of circuit fabrication methods. Prereq.- ELEC 101; Pre- or coreq.- EMEC 115.

ELEC 161 Electronics Soldering (Cr2) (1:2)

Theoretical understanding and hands-on experience in the soldering of electronicassemblies; materials management, soldering processes and techniques, cleaning processes and techniques, desoldering processes and techniques, the application of workman ship standards; materials and processes to perform cause and effect analysis; laboratory exercises to provide hands-on experience hand soldering through hole and surface mount assemblies, inspecting product for adherence to workmanship standards, and removing and replacing defective components.

ELEC 177 Electronics Manufacturing I (Cr2) (1:2)

Process, assembly and soldering of electronic circuits; introduction to applied chemistry and safety; materials; soldering and cleaning processes; application of workmanship standards and best practices; lab experiences in hand soldering through-hole and surface mount assemblies, inspection and component replacement.

ELEC 207 Solid State Circuits (Cr4) (3:3)

Covers rectifier, zener, varactor, and light-emitting diodes with an emphasis on power supply circuitry; bipolar-junction transistors analyzed in switching circuits and linear amplifiers, multiusage linear and power amps analyzed for voltage and frequency response. Labs emphasize prototyping, troubleshooting, interpretation of procedure and manufacturer specifications. Prereq. - ELEC 155 and ELEC 121.

ELEC 208 Digital Electronics II (Cr3) (2:2)

Second course in digital electronics. Includes: simplification by Boolean Algebra and Karnaugh mapping, design of truncated sequence sequential counters, IC specifications and interfacing, tri-state devices and busing, A/D and D/A, memory devises, and an introduction to CPLDs. Labs emphasize the analysis, prototyping, and troubleshooting of digital circuits as well as interpretation of manufacturer specifications. Prereq.- ELEC 126 and 155.

ELEC 221 Electronics Manufacturing Workshop (Cr4) (2.7:2.7)

Overall manufacturing process, emphasizing the interaction of all phases in the production process: machine and materials inspection, automated assembly, machine function and operation, manual and mechanical assembly, inspection, manual test and audit. Labs with industry standard equipment, problem solving exercises, and visits to local electronic manufacturing facilities. Pre- or coreq. - ELEC 115 or permission of the instructor.

ELEC 222 Electronics Manufacturing II (Cr3) (2:2)

Overall manufacturing process studied in a team-based project environment; interaction of all phases in the production process; statistical process control and problem solving tools following the process from raw materials through manual/automated assembly, automated soldering, inspection, manual test and audit of the electro-mechanical product; knowledge and skills applied to completing team project assignments. Prereq. - ELEC 177. Additional course fees: $95.00.

ELEC 226 Microprocessors I (Cr3) (2:2)

Eight-bit microprocessors, including digital computers, computer languages, microprocessor architecture, memory, input/output, 8080A/8085 based microprocessor systems, MPU, instructions and timings, instruction format, how to write and execute simple programs, programming the 8080/8085, 8080/8085 instructions, arithmetic logic; and branch operations, counter and timing delays, stack and subroutines, interfacing peripherals, and applications. Prereq. - ELEC 208.

ELEC 230 Team Project (Cr2) (1:3)

Students from CAD and electronics programs work in interdisciplinary teams to design and prototype an electromechanical product under specified guidelines; emphasis on effective teamwork, prototyping, technical writing and reporting, and oral presentation skills. Only one of the following may be applied to graduation: ELEC 230, ENGG 230, or WELD 230. Prereq. - ELEC 208; Pre- or coreq.- ELEC 232, ENGL 151 and CMTH 102.

ELEC 232 Linear Integrated Circuits (Cr4) (3:3)

The second in a two-course sequence in linear electronics. Covers field-effect transistors and their use in switching and small-signal amplifiers; a comparison of FETs to BJTs; thyristors; IC fabrication; op-amps in linear and non-linear applications; voltage regulators; and oscillators. Labs emphasize prototyping, troubleshooting and interpretation of procedure and manufacturer specifications. Prereq. - ELEC 207.

ELEC 251 Network Installation and Maintenance (Cr3) (2:2)

Installation, maintenance and troubleshooting of the hardware for local area networks with emphasis on the hands-on, practical experiences needed to service enterprise computing systems used in industry; installation and maintenance of cable plants, interface cards, Internet working products, and system fault tolerance and diagnosis.

ELEC 254 Computer Systems and Applications II (Cr3) (2:2)

Continued study of personal and mainframe computer systems covering 80286 through Pentium and Motorola microprocessors, microprocessor support systems, memory and expansion bus systems, and basic input/output; basic troubleshooting techniques at the module level with repair procedures. Prereq. - ELEC 130.

ELEC 255 Computer Systems Maintenance (Cr3) (2:2)

Advanced troubleshooting and repair of personal computers and networks; operation and maintenance of disk drives and other input/output auxiliary equipment, component level troubleshooting techniques, and detailed circuit troubleshooting/ analysis of networked PC systems; comprehensive lab-based systems diagnostics. Prereq. - ELEC 251 and 254.

ELEC 271 Computer Electronics Practicum I (Cr3) (0:0:9 practicum)

Work-based experience assisting in the servicing of computer systems with focused exposure in carrying out routine maintenance, computer upgrades, common PC setup and repairs, and customer relations. Written analysis of problem solving project. Coreq. - ELEC 254.

ELEC 272 Computer Electronics Practicum II (Cr3) (0:0:9 practicum)

Work-based experience assisting in the servicing of computer systems including networks and mainframes with focused exposure in carrying out troubleshooting, repair and upgrades. Written analysis of comprehensive systems problem solving project. Coreq.- ELEC 255.

ELEC 281 Independent Electronics Study (Cr1)

An independent study experience of a topic of interest to the student under close supervision of a member of the Electronics Department faculty. Prereq. - sophomore standing in Electronic Technology and departmental permission.

ELEC 282 Independent Electronics Study (Cr2)

An independent study experience of a topic of interest to the student under close supervision of a member of the Electronics Department faculty. Prereq. - sophomore standing in Electronic Technology and departmental permission.

ELEC 283 Independent Electronics Study (Cr3)

An independent study experience of a topic of interest to the student under close supervision of a member of the Electronics Department faculty. Prereq. - sophomore standing in Electronic Technology and departmental permission.

ELEC 284 Independent Electronics Study (Cr4)

An independent study experience of a topic of interest to the student under close supervision of a member of the Electronics Department faculty. Prereq. - sophomore standing in Electronic Technology and departmental permission.

ELEC 291 Special Studies in Electronics Technology (Cr1)

See Statement on Special Studies. Offered on demand.

ELEC 292 Special Studies in Electronics Technology (Cr2)

See Statement on Special Studies. Offered on demand.

ELEC 293 Special Studies in Electronics Technology (Cr3)

See Statement on Special Studies. Offered on demand.

ELEC 294 Special Studies in Electronics Technology (Cr4)

See Statement on Special Studies. Offered on demand.

Emergency Services (EMGS)

EMGS 102 Building Codes and Construction (Cr3) (3:0)

Common elements found in building construction, types of structural design, materials and fire ratings of building materials, blueprint reading, buildings and the requirements for fire protection, coordination activities between building inspection departments and fire protection agencies.

EMGS 104 Essentials of Firefighting and Emergency Response (Cr5) (4:2)

This course will introduce concepts of basic fire fighting and emergency response. Topics include an overview of fire service, fire service organization, firefighter safety, personal protective equipment, terrorism awareness, fire behavior, fire extinguishers, water supply, fire hose, ropes and hazardous materials. Exterior fire ground operations including building construction, ladders, communications, protective systems/sprinklers, forcible entry, and fire prevention are discussed. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability.

EMGS 105 Essentials of Interior Firefighting and Emergency Response (Cr3) (2:2)

The course is designed to introduce firefighters to interior fire ground operations including nozzles and streams, self-contained breathing apparatus (SCBA), rescue, ventilation, fire suppression, salvage, and firefighter survival. It builds upon concepts from EMGS 104 while providing information and procedures that will integrate and complete basic firefighting and emergency response competency skill sets. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability. Prereq.- EMGS 104.

EMGS 106 Fire Suppression Systems (Cr3) (3:0)

Fire protection engineering including systems for fire protection, control, suppression, and extinguishment; detection signal and extinguishing systems both automatic and manual; temperature, smoke, products of combustion and flame responsive alarm systems; basic methods of operation, theory and principles of application using water, dry chemicals, dry powders, carbon dioxide, foam, and halogenated hydrocarbon agents in hand, portable, and wheeled extinguishers on the various types and classes of fires.

EMGS 109 Vehicle Rescue (Cr3) (2:2)

Materials and techniques necessary to meet the needs of fire, rescue, and ambulance services personnel who provide highway vehicle rescue operations; tools and equipment associated with rescue services, preparation for more advanced training in rescue operations. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability.

EMGS 111 Sprinkler Systems (Cr3) (3:0)

Concepts and principles involved with the design, installation, and use of automatic sprinkler and standpipe systems; proper fire department operations in structures with sprinkler systems.

EMGS 112 Detection and Alarm Systems (Cr3) (3:0)

Theories involving domestic industrial alarm detection systems; practical guidelines for selecting, locating, operating, and maintaining fire alarm systems.

EMGS 115 Emergency Medical Technician (Cr6) (4:4)

Skills oriented course, involving extensive hands-on training in the evaluation and treatment of the sick and injured; fundamental training required for emergency services medical personnel; CPR, preparatory, airway, patient assessment, traumatic injuries, fractures, thoracic injuries, patient immobilization and lifting. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability. Formerly EMGS 107+108. May not be taken for credit after completing these courses. Additional course fees: $13.00.

EMGS 120 Emergency Services Health and Safety (Cr3) (3:0)

This course introduces the basic concepts of occupational health and safety as they relate to emergency service organizations. Topics include risk evaluation and control procedures for fire stations, training sites, emergency vehicles, and emergency situations involving fire, emergency medical services, hazardous materials response and technical rescue response agencies.

EMGS 122 Emergency Action Planning (Cr3) (3:0)

This course is intended to provide basic emergency action planning information while emphasizing the importance of the emergency planning process. Additional subject matter includes history, laws and regulations, common practices, risk assessments, response actions including mitigation and recovery. The phases of emergency management are explored along with the roles and responsibilities of all stakeholders.

EMGS 151 Fire Prevention (Cr3) (3:0)

Organization and implementation of fire prevention education programs and fire department public information programs; resource identification and usage; codes and regulations pertaining to fire prevention.

EMGS 154 Principles of Inspection (Cr3) (3:0)

Inspection organization, techniques for field inspection, diagramming, mapping, and reporting procedures.

EMGS 201 Hazardous Materials (Cr3) (3:0)

Chemical characteristics and reaction to storage, transportation and handling of hazardous materials, i.e., flammable liquids, combustible solids, oxidizing and corrosive materials and radioactive compounds; emphasis on emergency situations and fire fighting control.

EMGS 202 Fire Tactics and Incident Command (Cr3) (3:0)

Basic fire fighting tactics, the strategy and equipment to be used in extinguishing different types of fires; how to use available manpower and equipment efficiently; techniques in predicting fire severity; when, where and how to ventilate a building.

EMGS 203 Fire Codes (Cr3) (3:0)

Content and use of various fire and life safety codes; based on the codes most used by the fire service: The National Fire Codes, Life Safety Codes, National Electrical Codes, and BOCA Fire Prevention Code.

EMGS 206 HAZ-MAT First Responder Awareness & Operational Levels (Cr3) (3:0)

Training for the first responder to hazardous materials incidents in accordance with NFPA 472; safety, resources and planning, incident management, recognition, identification, chemistry, personal protective equipment, control, incident termination, and decontamination, as they relate to hazardous materials incidents. Prereq. - EMGS 101.

EMGS 211 Rope and Rough Terrain Rescue (Cr3) (2:2)

Technical rope rescue, with extensive hands-on training; proficiency in the fundamental techniques used in technical rope rescue; search, rappelling, haul systems, and lowering systems. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability.

EMGS 215 Advanced Firefighting (Cr3) (2:2)

Continuation of Fundamentals of Firefighting; water supply, introductory hazardous materials, sprinkler systems, advanced ventilation, fire rescue, and foam operations; field practicum an important dimension of the course, based on NFPA Standards 1001 for professional firefighters. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability. Prereq. - EMGS 101.

EMGS 216 Emergency Fiscal Administration (Cr3) (3:0)

The course will examine the techniques and operations of fiscal administration as it relates to the public sector with an emphasis on emergency services and public safety. Subject matter will include public funding, spending, budgeting, risk management, and grant writing. . Information and procedures will be introduced and practiced to allow students to complete a functioning budget, as well as develop future budget projections and funding scenarios.

EMGS 217 Public Information and Relations (Cr3) (3:0)

This course will provide an effective way to manage public information at an incident or event, regardless of the size and complexity of the situation or the number of entities involved. Emphasis is placed on understanding the perspective of media personnel arriving on the scene. Students will learn how to prepare for media arrival along with agency interface. Presentation skills that afford concise and accurate information distribution will be discussed and practiced.

EMGS 218 Incident Command and Management (Cr3) (3:0)

This course is a collection of FEMA course that comprise IS 100: Introduction to Incident Command System; IS 200: ICS for Single Resources and Initial Action Incidents; IS 300; IS 700 National Incident Management System an Introduction; and IS 800: National Response Framework an Introduction. Through an interrelated progression, the student will be exposed to the comprehensive approach of the National Incident Management System.

EMGS 219 Regulatory Compliance (Cr3) (3:0)

Provisions of the regulatory agencies comprising Occupational Safety and Health Administration (OSHA), Environmental Protection Agency (EPA) and US Department of Transportation (DOT) as well as state agencies with similar responsibilities require that entities engaged in emergency response provide awareness and adequate training to ensure compliance with a multitude of regulations. This course is an overview of regulatory requirements along with the regulations that are pertinent to the response community.

EMGS 221 Emergency Service Management (Cr3) (3:0)

Management theory as applied to various phases of the operation of an emergency service organization; efficient and effective use of personnel, equipment, and resources; application of computers to various emergency services operations.

EMGS 231 Law for Emergency Services (Cr3) (3:0)

The legal aspects of fire service organizations; arson law, legal rights and responsibilities of fire officers and court procedures; laws relating to both criminal and civil topics.

EMGS 251 Fire Hydraulics and Pump Operations (Cr3) (2:2)

Review of basic mathematics, hydraulic laws and formulas and how they apply to firefighting equipment and water supply, the flow of water in pumps, pipes, hose, nozzles, and sprinkler systems, computation of nozzle pressures and range and effectiveness of nozzle stream, determination of water requirements for sections of a community, and underwriter requirements for pumps. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability.

EMGS 252 Fire Causes and Investigation (Cr3) (3:0)

History of fire investigation and detection including inspection techniques, gathering of evidence and development of technical reports, fundamentals of arson investigation, processing of criminal evidence and criminal procedure related to local and state statutes.

EMGS 254 Fire and Emergency Services Training Methods (Cr3) (3:0)

For fire and rescue service personnel responsible for conducting company level or small unit training; principles and techniques employed for skills training applied directly to fire service situations; adult education techniques.

EMGS 255 First Responder Training (Cr3) (2:2)

For police, fire, and rescue personnel responding to the scene of injury or illness; procedures used to initiate treatment while awaiting arrival of a higher level of care includes but not limited to CPR, shock and bleeding, and patient survey. Students will be required to carry and maintain accident and health insurance and/or workman's compensation and sign a waiver of liability. Additional course fees: $13.00.

Engineering (ENGG)

ENGG 100 Engineering Graphics (Cr3) (2:2)

Training and experience in drafting procedure, practice and principles; basic skills and techniques of drafting including freehand orthographic and pictorial sketching; use of drafting equipment; essentials of lines, lettering, multiview projections, section views, dimensioning, tolerancing and notation in execution of detail and assembly drawings; introduction to computer-aided design basics for non-CAD majors.

ENGG 110 Introduction to Engineering (Cr3) (2:2)

Introduction to the profession of engineering, current technologies, problem-solving software; computer operating systems; practical engineering problems, industry/field trips.

ENGG 112 Introduction to Computer Integrated Manufacturing (Cr3) (3:1)

Introduction to computer technology; today's manufacturing industry including product design, CAD/CAM/CNC/CAE, robotics, vision systems, PLCs and industrial controls, industrial sensors, group technology, inventory control, scheduling and quality control.

ENGG 115 Computer Aided Design I (Cr3) (2:2)

Basic elements of computer-aided drafting using AutoCAD; working knowledge of system and screen controls, file management, creating entities, editing techniques, creating two-dimensional drawings, and printing/plotting methods. Pre- or coreq.- ENGG 100.

ENGG 117 Technical Drawings and Specifications (Cr3) (3:0)

Interpreting and sketching engineering drawings and specifications; multiview projection, dimensioning, sectioning, geometric dimensioning and tolerancing; working drawings, pictorials; introduction to electrical, electronics, tooling, weld, and plastics drawing.

ENGG 125 Manufacturing Processes (Cr3) (3:1)

Fundamentals of manufacturing; survey of engineering materials, including the properties of each material and phase diagrams; processes for modifying materials; product design and material selection, relationship between conceptual, functional and process design; manufacturing processes; fundamental workings of the process, its capabilities, typical applications, advantages and limitations. Also available through Online Learning.

ENGG 191 Special Studies in Engineering (Cr1)

See Statement on Special Studies. Offered on demand.

ENGG 192 Special Studies in Engineering (Cr2)

See Statement on Special Studies. Offered on demand.

ENGG 193 Special Studies in Engineering (Cr3)

See Statement on Special Studies. Offered on demand.

ENGG 194 Special Studies in Engineering (Cr4)

See Statement on Special Studies. Offered on demand.

ENGG 201 Statics (Cr3) (3:0)

Force resultants, force systems and moments, equilibrium of particles and rigid bodies, vector analysis, conditions for equilibrium in two and three dimensions, structural analysis, friction, and shear and bending moment diagrams. Prereq. -MATH 181 and PHYS 215 with a C or better in both. Also available through Online Learning.

ENGG 205 Parametric Modeling (Cr3) (2:2)

Create, edit, manipulate and plot part and assembly models and drawings using parametric feature-based 3-D CAD modeling software such as Autodesk Inventor or SolidWorks. Using digital prototype models of industrial, mechanical, consumer product and plant design applications, perform rendering and analysis of design,animation and dynamic simulation of parts and assemblies; interface with Rapid Prototyping (RPP) and Computer-Integrated Manufacturing (CIM). Pre- or coreq. -ENGG261.

ENGG 220 Design Project (Cr3) (2:2)

Students work individually or in teams to design a product that will utilize manufactured parts or components. Based on design parameters, students will research, develop, design, analyze and document their project while improving their technical writing, reporting, record keeping and drawing presentation skills. Pre- or coreq.- ENGG 261 and ENGL 151.

ENGG 230 Team Project (Cr3) (2:2)

CAD students participate in teams to design and prototype a product under specified guidelines; emphasis on technical writing and reporting, effective teamwork, and prototyping. Only one of the following may be applied to graduation: ELEC 230 or ENGG 230. Pre- or coreq.- ENGG 205.

ENGG 240 CAD Applications (Cr3) (2:2)

Exposure to the design process in various industries; use of CAD to execute five projects, each of which requires completion of drawing and documents typical of mechanical, electronics, civil, architecture, and technical illustration applications; completion of a professional portfolio. Prereq.- ENGG 262.

ENGG 251 Strength of Materials (Cr3) (3:0)

Strength of engineering materials, including stress, strain, beams, columns, torsion, thin wall cylinders, thermal stress, theory of failure. Pre- or coreq.- ENGG 201.

ENGG 252 Dynamics (Cr3) (3:0)

Kinematics and dynamics of particles and rigid bodies, principles of work and energy and impulse and momentum. Prereq.- ENGG 201.

ENGG 260 Engineering Materials (Cr3) (3:0)

Properties and structure of materials, metal crystallization, deformations and working processes, metallic alloys, heat treatment, corrosion and nonmetallic materials. Offered alternate years.

ENGG 261 Computer Aided Design II (Cr3) (2:2)

Advanced computer-aided drawing and editing commands as applied to mechanical, architectural and civil engineering work; geometric dimensioning and tolerancing, symbol libraries, attributes, script, DXF and basic isometric and 3-D wireframe drawing commands. Prereq.- ENGG 115.

ENGG 262 Computer Aided Design III (Cr3) (2:2)

Working knowledge in creating 3-D drawings, surface and solid modeling, and visualization using AutoCAD; menu and toolbar customization and introduction to AutoLISP programming language; basic parametric modeling techniques. Prereq.- ENGG 261.

ENGG 268 CAD Practicum (Cr2) (0:0:6)

Actual work experience in any of a variety of engineering disciplines providing exposure to the methodology of drafting and design technology to its product or service; presentation of a report on key experiences related to new product or process technology, drafting and design technology, or productivity improvement; emphasis on drafting and design issues, documentation, and communication skills. Prereq.- ENGL 101, ENGG 261, and approval of the instructor.

ENGG 291 Special Studies in Drafting and Design (Cr1)

See Statement on Special Studies. Offered on demand.

ENGG 292 Special Studies in Drafting and Design (Cr2)

See Statement on Special Studies. Offered on demand.

ENGG 293 Special Studies in Drafting and Design (Cr3)

See Statement on Special Studies. Offered on demand.

ENGG 294 Special Studies in Drafting and Design (Cr4)

See Statement on Special Studies. Offered on demand.

English (ENGL)

ENGL 025 Writing Skills I (Cr4) (4:0)

The course introduces students to the stages of the writing process and basic strategies for organizing and developing topics and improving coherence in single-and brief multi-paragraph expository writing. Students improve sentence and paragraph development and organization, sentence structure, punctuation, standard usage through writing, revision, and editing practice. Students read articles to identify and restate key ideas. Students identify common patterns of error in their writing to improve fundamental editing and proofreading skills. Prereq.- Placement as determined by the English Department through testing.

ENGL 026 Writing Skills II (Cr4) (4:0)

Students develop writing skills critical for success in college courses. They write multi-paragraph essays (4-5 paragraphs) that use details and evidence to support topic sentences and thesis statements. Students learn and use stages of the writing process and develop strategies for organizing and developing topics and improving coherence in multi-paragraph essay writing. They read articles and summarize the key ideas. Students also work on refining their editing and proofreading skills. Prereq.- Placement as determined by the English Department through testing or course work (R in ENGL 025 Writing Skills I)

ENGL 031 English as a Second Language Writing II (Cr3) (0:4.5)

Students with some knowledge of English will study intermediate grammar, create basic sentences, and compose short paragraphs applying the uses of specific times and verb tenses. Prereq. - English language competence as determined by the ESL Department faculty through testing and/or course work.

ENGL 032 English as a Second Language Writing III (Cr3) (0:4.5)

English language learners will study advanced grammar, learn how to select and respond to writing topics, organize ideas, and develop paragraphs in ways that will prepare them for writing in college courses. Students of this course will develop these skills in a network-based computerized classroom. Prereq. - English language competence as determined by the ESL Department faculty through testing and/or course work.

ENGL 034 English as a Second Language Speaking II (Cr3) (0:4.5)

Students with some knowledge of spoken English will learn and practice conversational skills in order to improve their listening and speaking abilities and learn about American culture in ways that will prepare them for academic contexts. Prereq. - English language competence as determined by the ESL Department faculty through testing and/or course work.

ENGL 035 English as a Second Language Speaking III (Cr3) (0:4.5)

English language learners will develop advanced college and work-related communication skills in individual, small group, and classroom situations. Focus will be on practicing oral presentation skills and advanced pronunciation skills. Activities will also help students develop cultural understanding and appreciation. Prereq. - English language competence as determined by the ESL Department faculty through testing and/or course work.

ENGL 037 English as a Second Language Reading II (Cr3) (0:4.5)

Students with some knowledge of English will read materials that are simple yet challenging enough to prepare students for college level reading. Students will also learn new vocabulary by memorizing, using context before a dictionary, and learning dictionary skills such as alphabetizing. Prereq. - English language competence as determined by the ESL Department faculty through testing and/or course work.

ENGL 038 English as a Second Language Reading III (Cr3) (0:4.5)

Students will increase vocabulary and prepare for college level reading by applying reading strategies such as finding main ideas, skimming, and scanning, and reading a variety of materials such as textbooks, articles, and fiction. Successful completion of this course (C or better) supplants READ 013 or 016. Prereq. - English language competence as determined by the ESL Department faculty through testing and/or course work.

ENGL 040 ESL Culture Study (Cr6) (0:9)

For students with little or no knowledge of English, this course focuses on cultural topics in authentic English-speaking contexts. Students will participate in cultural activities in the local community and in the classroom. Students will discuss and write about the activities in class assignments. This course may be taken two (2) times for credit.

ENGL 041 ESL I (Cr6) (0:9)

For the student with little or no knowledge of English, this course integrates the basic skills of listening, speaking, reading, and writing English. Students will practice these skills through various activities and tests in a college classroom environment.

ENGL 048 ESL IV (Cr3) (0:4.5)

English language learners preparing to enroll in regular college courses or enter the work

force with an advanced knowledge of English will study and analyze errors in complex sentence structure, develop critical reading and thinking skills, and learn test-taking strategies. Prereq. - English language competence as determined by the ESL Department faculty through testing and/or course work.

ENGL 101 English I (Cr3) (3:0)

A writing-intensive course giving close attention to the process of writing through networked workshops and conferences involved in preparation and revision of drafts. The course develops skills in logical and focused writing, through development of a main point by means of supporting ideas and evidence. In addition, students learn to integrate information from secondary sources through the use of summary, paraphrase, and direct quotation in various forms of thesis-based writing. Prereq. - Competence in reading and writing as determined by English Department through testing and/or course work. Also available through Online Learning. Approved for the Honors Program.

ENGL 151 English II (Cr3) (3:0)

Readings and continued refinement of writing skills. Student may elect to work on introduction to literature, report writing, or technical writing. Formerly ENGL 171. Prereq. - ENGL 101. Also available through Online Learning. Approved for the Honors Program.

ENGL 201 British Literature I (Cr3) (3:0)

Survey of major works of selected British authors (before 1800) from Old English through the Eighteenth Century; emphasis on understanding the cultural and historical context of the literature as well as on analysis and interpretation of the works of literature. Prereq. - ENGL 151. Also available through Online Learning.

ENGL 203 Shakespeare (Cr3) (3:0)

Study of Shakespeare's major plays and sonnets in the context of contemporary culture, intellectual and political issues, and stage conditions. Approved for the Honors Program. Prereq. - ENGL 151.

ENGL 205 American Literature I (Cr3) (3:0)

Survey of major American writers from Colonial period to the Civil War, including works from Edwards, Jefferson, Wheatley, Franklin, Douglass, Emerson, Fuller, Thoreau, Poe, Dickinson and Whitman. Emphasis is on texts but with attention to historical, cultural, and intellectual backgrounds. Prereq. - ENGL 151.

ENGL 211 Plays: Classical to Contemporary (Cr3) (3:0)

Study of the dramatic script as a literary text that shapes both performance and our understanding of culture and the human enterprise; plays from classical Greece to contemporary Africa are analyzed for the human concerns and themes in each, the various and opposed points-of-view of the characters, and the differences that culture can make in artistic expression. Students may not receive credit for both CMTH 211 and ENGL 211. Prereq. - ENGL 101.

ENGL 215 Multicultural Adolescent Literature (Cr3) (3:0)

A writing-intensive course based on multicultural literature for adolescents. Overview of materials based upon the socio-cultural and developmental characteristics of young adults with an emphasis on multiculturalism and English language learners; examination of major genres in young adult literature. Ten hours of educational field experience or service learning activity required. Prereq.- ENGL151.

ENGL 250 Contemporary Latin American Literature in Translation (Cr3) (3:0)

Contemporary Latin American Literature through the works of the major authors of the time, e.g. Borges, Marquez, Vargas, Llosa, Fuentes, etc. Prereq. - ENGL 151.

ENGL 251 British Literature II (Cr3) (3:0)

Major works of selected British authors from the Pre-Romantics to the 20th century. Emphasis on literary analysis but with attention to intellectual and historical backgrounds. Offered on demand. Prereq. - ENGL 151.

ENGL 253 Creative Writing (Cr3) (3:0)

Provides beginning writers the opportunity to explore imaginative uses of language through the fundamentals of narrative fiction, literary non-fiction, open- and fixed-form poetry; promotes critical analysis of students' own writing as well as the writings of others. Prereq. - ENGL 101. Also available through Online Learning.

ENGL 255 American Literature II (Cr3) (3:0)

Survey of major American writers from the Civil War to the present, including works of Cochise, Booker T. Washington, Hemingway, Fitzgerald, Hughes, Williams,Sexton, Updike, Beattie, and Morrison. Emphasis is on texts but with attention to historical, cultural, and intellectual backgrounds. Prereq. - ENGL 151. Also Available through Online Learning.

ENGL 256 Modern Poetry (Cr3) (3:0)

A modern American poetry course. The course is a survey, following a chronological order beginning with Walt Whitman and ending with such contemporary poets as C.K. Williams, Gerald Stern, Adrienne Rich. Offered on demand. Prereq. - ENGL 151.

ENGL 257 20th Century Literature by Women: Self-Images and Self-Awareness (Cr3) (3:0)

A sophomore-level study of 20th century literature by women through works by major authors of the time, specifically focusing on the written images these authors created of women, and their search for self-awareness in various cultures. Prereq. - ENGL 151.

ENGL 260 Contemporary Literature (Cr3) (3:0)

Study of recent works in English and in translation. Coverage and analysis of both conventional and experimental forms of literature. Offered on demand. Prereq. - ENGL 151.

ENGL 264 Irish Literature (Cr3) (3:0)

A survey of the literary works of Irish authors from the mid-nineteenth century to the present. Course emphasizes understanding primary literary texts within their historical, political, and cultural contexts. Prereq.- ENGL151. Approved for the Honors Program.

ENGL 265 African-American Literature (Cr3) (3:0)

The literary works of African-Americans from pre-twentieth century literature to the present; genres and themes in their historical, political, and socio-cultural contexts. Prereq. - ENGL 151. Approved for the Honors Program.

ENGL 267 Poetry Writing(Cr3) (3:0)

For students who have experience in writing poetry but would like to improve their writing; contemporary poems' content, structure, and techniques, with an emphasis on using this study for writing and critiquing of students' own poems; lecture and workshop; intended to enable students to write publishable poems. Prereq. - ENGL 101 or permission of instructor.

ENGL 291 Special Studies in English (Cr1)

See Statement on Special Studies. Offered on demand.

ENGL 292 Special Studies in English (Cr2)

See Statement on Special Studies. Offered on demand.

ENGL 293 Special Studies in English (Cr3)

See Statement on Special Studies. Offered on demand.

Food Service Management (FOOD)

FOOD 110 Food Preparation I (Cr4) (2:6)

Basic food preparations, including station assignments, theory, personnel organization, service and storage; lecture, demonstration, and participation. Pre.- or coreq.- HOSP 101.

FOOD 123 Menu Planning and Food and Beverage Cost Control (Cr3) (3:0)

Menu design from fast food operations through fine dining; emphasis on creating balanced menus that are profitable, consumer-driven and nutritionally proportioned; methods of establishing menu selection, cost control in food, beverage, and labor; profit margins, selling price strategy; truth in menu regulations and menu engineering as a marketing and merchandising tool.

FOOD 130 Convention Services and Catering Management (Cr3) (2:2)

This course focuses on the foundation of convention services which includes reaching and servicing the group meetings and

special event markets. The process of selling space, functions and events to groups will be covered. The course will also cover the management and marketing of catering on and off premises, including special event functions. The planning, financing, organizing, marketing and operations of catered events will be discussed. Students apply learning through the participation in 32 hours of on-campus catered events.

FOOD 250 Dining Room Operation (Cr4) (2:4)

Actual dining room operation; a la carte service techniques; coordination of functions and duties; dining room sanitation. Prereq. - HOSP 101.

Funeral Service Education (FUNS)

FUNS 101 Principles of Funeral Service (Cr2) (2:0)

A review of the typical religious funeral customs associated with Judaism, Roman Catholicism, and Protestantism and strategies to enhance the relationships between the funeral director, the clergy, and the bereaved. Restricted to Funeral students.

FUNS 102 Introduction to Funeral Service (Cr4) (4:0)

An overview of the funeral service profession with an emphasis on professionalism, ethics, funeral history, the Federal Trade Commission (FTC), current trends (pre-need and cremation), statistics, and relevant vocabulary. Restricted to Funeral students.

FUNS 105 Funeral Directing (Cr3) (3:0)

The procedures to be used by the funeral director to carry out the necessary functions associated with the notification of a death, transfer of human remains, arrangement conference counseling, visitation, funeral or memorial services, disposition, and post funeral services; funeral related financial resources (Social Security, Veteran's Administration, National Cemeteries, Armed Forces, Public Assistance, etc.) Restricted to Funeral students.

FUNS 201 Funeral Home Operations I (Cr4) (4:0)

The role and function of an effective funeral home manager with emphasis on entrepreneurial skills related to buying and selling a funeral home, succession planning, managing facilities, financial statements, financing, and consumer behavior. Restricted to Funeral students.

FUNS 203 General Pathology (Cr3) (3:0)

Pathological changes affecting the human body, its structure, function, with particular emphasis on the implications these changes have on the embalming and/or restorative art process. Restricted to Funeral students.

FUNS 210 Embalming Theory I (Cr3) (3:0)

Theoretical training in all phases of the embalming process, including an orientation and introduction to embalming, death, pre-embalming changes, embalming instrumentation, preparation of the body, selection of vessels, injection and drain-age techniques, dilution-distribution-diffusion, cavity treatment, and postmortem examinations. Restricted to Funeral students. Prereq. - BIOS 160 or 254.

FUNS 212 Clinical Embalming I (Cr1) (0:3)

On-campus practical experience in all phases of the applied embalming process. Restricted to Funeral students. Coreq. - FUNS 210. Additional course fees: $75.00.

FUNS 220 Embalming Theory II (Cr3) (3:0)

Theoretical training in all phases of the embalming process, including embalming chemicals and arterial solutions, specific embalming treatments, disaster management, the history of embalming, biohazardous waste disposal, OSHA standards, and case analysis; continuation of Embalming Theory I. Restricted to Funeral students. Prereq. - FUNS 210.

FUNS 222 Clinical Embalming II (Cr1) (0:3)

A continuation of Clinical Embalming I. Restricted to Funeral students. Prereq. - FUNS 212. Additional course fees: $75.00.

FUNS 231 Funeral Home Operations II (Cr2) (2:0)

Business principles related to pricing, promotion, personnel management, inventory control, computer usage, and merchandising & pricing of caskets, outer burial containers, and cremation urns, etc. Restricted to Funeral students. Prereq. - FUNS 201.

FUNS 241 Field Study I (Cr1) (0:6)

A minimum of six hours (maximum of ten hours) per week of cooperative education in an approved funeral home, under the direction of a licensed funeral director; all phases of funeral service, with emphasis on embalming and restorative art/ cosmetology. Restricted to Funeral students. Coreq. - FUNS 210. Additional course fees: $75.00.

FUNS 242 Field Study II (Cr1) (0:6)

A continuation of Field Study I. Restricted to Funeral students. Prereq. - FUNS 241. Additional course fees: $75.00.

FUNS 251 United States and Pennsylvania Funeral Law (Cr3) (3:0)

Basic business laws and principles associated with funeral contracts, negligence, tort liability, magistrates, state and local courts, disposition rights, probate, and Pennsylvania Funeral Director Law and the rules and regulations. Restricted to Funeral students.

FUNS 255 Cosmetology & Restorative Art (Cr3) (2:3)

Aspects of general art as applied to funeral service, anatomical modeling, facial expressions, familiarization with tools, materials and techniques necessary to reconstruct human features, color in cosmetics, and development of special laboratory skills. Restricted to Funeral students. Prereq. - BIOS 160 or 254. Additional course fees: $85.00.

FUNS 291 Special Studies in Funeral Service (Cr1)

See statement on Special Studies. Offered on demand. Restricted to Funeral students.

FUNS 292 Special Studies in Funeral Service (Cr2)

See statement on Special Studies. Offered on demand. Restricted to Funeral students.

FUNS 293 Special Studies in Funeral Service (Cr3)

See statement on Special Studies. Offered on demand. Restricted to Funeral students.

Geography (GEOG)

GEOG 101 World Geography (Cr3) (3:0)

An introduction to the location, distribution, and spatial organization of selected elements of culture, politics, economics, and environment that have relevance to major contemporary problems in various regions of the world. Also available through Online Learning.

GEOG 121 Introduction to Environmental Problems (Cr3) (3:0)

Human/environment interactions through history; basics of ecology with application to human ecology; causes and consequences of population growth, resource depletion, and pollution; relationships between these problems and possible solutions to them. Also available through Online Learning.

GEOG 130 Geographic Information Systems (Cr2) (1:2)

Introduction to Geographic Information Systems (GIS) disciplines using Arc View software by ESRI; composition of a GIS, how to perform spatial analysis, manipulate data, develop presentations; emphasis on a project applicable to students' professional or personal interests; use of computers in the lab to work on project of student's choice.

GEOG 150 Astronomy (Cr4) (3:2)

The physical laws that govern the universe; hands-on experience in exploring the heavens and discovering the methods; by which astronomical information is gathered; awareness of the true nature of science and its relationship to society by linking physical principles to everyday observations. Also available through Online Learning.

GEOG 151 Geography of the United States and Canada (Cr3) (3:0)

A study of the U.S. and Canada on a topical and regional basis, physical, economic, and cultural factors in the U.S. and Canada and geographical attributes of each region.

GEOG 210 Meteorology (Cr4) (3:2)

The physical processes and properties of the atmosphere, elements of weather analysis and

forecasting, and effects of the atmosphere on people and their activities; laboratory includes weather instruments and observations, weather map construction and analysis, and experiments.

GEOG 221 Contemporary Middle East (Cr3) (3:0)

Survey of the natural environments and human societies from the Atlantic coast of North Africa to the Afghanistan-Pakistan frontier with particular focus placed on the Middle East region that lies at the center of this geographic realm. Also includes an interdisciplinary seminar on the conditions and conflicts of the contemporary Middle East and their connections to and implications for the United States and the Western World. Approved for the Honors Program. Prereq. -GEOG 101 or premission of instructor.

GEOG 291 Special Studies in Geography (Cr1)

See statement of Special Studies. Offered on demand.

GEOG 292 Special Studies in Geography (Cr2)

See statement of Special Studies. Offered on demand.

GEOG 293 Special Studies in Geography (Cr3)

See statement of Special Studies. Offered on demand.

Geology (GEOL)

GEOL 201 Physical Geology (Cr4) (3:2)

The origin, development, structure and composition of the earth, and its surface and internal dynamics. Also available through Online Learning.

GEOL 291 Special Studies in Geology (Cr1)

See Statement on Special Studies. Offered on demand.

GEOL 292 Special Studies in Geology (Cr2)

See Statement on Special Studies. Offered on demand.

GEOL 293 Special Studies in Geology (Cr3)

See Statement on Special Studies. Offered on demand.

GEOL 294 Special Studies in Geology (Cr4)

See Statement on Special Studies. Offered on demand.

Health (HEAL)

HEAL 150 Contemporary Health (Cr3) (3:0)

This course will provide a comprehensive look at the major concepts of health and wellness. Students will develop an understanding of a variety of topics that include behavior change, psychosocial health, managing stress, violence and abuse, making commitments, drugs, alcohol, tobacco, weight management, cardiovascular disease, the aging process, environmental health, consumerism and alternative medicine. Emphasis will be placed on incorporating knowledge gained throughout the course into the everyday lives of students. Also available through Online Learning.

HEAL 292 Special Studies in Health (Cr2)

See Statement on Special Studies. Offered on demand.

HEAL 293 Special Studies in Health (Cr3)

See Statement on Special Studies. Offered on demand.

HEAL 295 Special Studies in Health (Cr1)

See Statement on Special Studies. Offered on demand.

Heating, Ventilating, AC (HVAC)

HVAC 101 Fundamentals of HVAC/R I (Cr3) (2:3)

Theory, application and principles of refrigeration and air conditioning (heating and cooling); study of basic cycle, systems, system components, accessories, piping and refrigerants; sequence of operation; diagnosis and problem solving. Review of electrical wiring practices. Formerly HVAC 801. Pre- or coreq.- EMEC 101.

HVAC 102 Fundamentals of HVAC/R II (Cr3) (2:2)

In-depth study of the application, installation, service, and maintenance of residential and commercial heating and air conditioning systems including split system heat pumps, single packages rooftop units, and built-up cooling systems. Formerly HVAC 802. Prereq. - HVAC 101.

HVAC 104 Refrigeration System Troubleshooting (Cr3) (2:2)

Operation and servicing of commercial refrigeration and display cases; electrical and pressure operated devices, control adjustment, unitary refrigeration units, and component repair; heat loading, piping calculations, and system capacity analysis. Formerly HVAC 804. Prereq. - HVAC 102.

HVAC 110 Print Reading for HVAC/R (Cr1) (1:0)

Interpretation of electrical and mechanical drawings commonly used in the field of heating, ventilating, air conditioning, and refrigeration. Formerly HVAC 810.

HVAC 120 Heating: Oil Systems (Cr2) (1.5:1.5)

Installation and maintenance of the key components of oil-fired hot air and hydronic heating systems; principles of combustion, sequence of operation, and hands-on troubleshooting in residential and light commercial applications. Formerly HVAC 820. Prereq. - EMEC 101.

HVAC 121 Heating: Gas Systems (Cr2) (1.5:1.5)

Installation and maintenance of key components of gas-fired hot air and hydronic heating systems; principles of combustion, sequence of operation, and hands-on troubleshooting in residential and light commercial applications. Formerly HVAC 821. Prereq. - EMEC 101.

HVAC 140 Heat Pump Systems (Cr2) (1.5:1.5)

Practical study of the principles and applications of the heat pump used in heating and cooling systems; focus on heating and cooling cycle theory, control systems, and hands-on troubleshooting procedures. Formerly HVAC 840. Prereq. - EMEC 101 and HVAC 101.

HVAC 150 HVAC Airflow and Distribution (Cr3) (3:1)

Practical study of the principles of airflow and psychometrics and how to achieve proper ventilation and distribution of air; basic duct design, psychometric calculations, fan installation and troubleshooting. Formerly HVAC 850. Prereq. - EMEC 101.

History (HIST)

HIST 103 Ancient and Medieval History (Cr3)(3:0)

The evolution of Western society from the early city states of the near east through the classical age to the beginning of the medieval state system. Students who have taken HIST 102 may not take this course.

HIST 113 American History I (Cr3) (3:0)

American history from the age of discovery/colonization to the Reconstruction Era; investigates the interaction of change and human experience over time; covers specific individuals, events, and public policies, as well as the relationship between cultures, institutions/systems, and human experience. Also available through Online Learning. Approved for the Honors Program.

HIST 121 The Black Experience (Cr3)(3:0)

Exploration of social, political, and philosophical dimensions of the Black experience in the USA from slavery to the present; comparison with experiences of blacks in Africa and the Caribbean; African origins of the Black experience, Pan-Negro Nationalism, the Haitian Revolution, blacks during the Civil War, Booker T. Washington vs. W.E.B. Dubois debate, Black Power Movement, contemporary black situation especially in the inner cities, class, race and color in Caribbean literature; Frederick Douglass, Marcus Garvey, Martin Luther King, Jr., Walter Rodney, Malcolm X, Jesse Jackson, Kwame Nkrumah, Amilcar Cabral and Nelson Mandela; the role of black women in the African-American struggle.

HIST 153 Foundations of Modern European History, 1300-1815 (Cr3)(3:0)

From the breakdown of the medieval feudal synthesis to the emergence of the modern world, renaissance, reformation, absolutism, and modern revolution. Students who have taken HIST 152 may not take this course.

HIST 163 American History II (Cr3)(3:0)

American history since the Reconstruction Era; investigates the interaction of change and human experience over time; covers specific individuals, events,

and public policies, as well as the relationship between cultures, institutions/systems and human experience. Also available through Online Learning. Approved for the Honors Program.

HIST 166 Civil War and Reconstruction (Cr3)(3:0)

Political, social, economic, and military aspects of the Civil War and Reconstruction, from 1845-1877. Course discusses slavery, sectionalism, and the causes of the Civil War, wartime activities of the Union and Confederacy; leading personalities; problems of Reconstruction and the newly reunited Union. Also available through Online Learning.

HIST 167 Vietnam (Cr3)(3:0)

The Vietnam War and its political context, and the basic themes in Vietnamese, French, and U.S. history and culture that helped determine the military and political outcomes. Also available through Online Learning.

HIST 168 History of the Middle East (Cr3)(3:0)

The rise of Islamic empires since the 7th century A.D.; the subsequent challenges and influences of the western world in this region beginning with the Crusades and leading to the development of the nation-state.

HIST 173 Modern European History, 1815 to Present (Cr3)(3:0)

Post-Napoleonic Europe, the revolutions of 1898, the unifications of Germany and Italy, Imperialism, the causes and results of World War I, the Depression and the ideologies of the 20th century and World War II. The post-war struggle between the super-powers will also be treated. Students who have taken HIST 172 may not take this course.

HIST 210 History of Modern Science 1859 - Present (Cr3) (3:0)

An interdisciplinary overview of the greatest scientific discoveries in history and the people who made them from the year 1859 to the present. Prereq. - ENGL 101.

HIST 211 History of Pennsylvania (Cr3)(3:0)

This course will focus on Pennsylvania history from pre-colonization to the present day. It will examine events specific to the history of the Commonwealth, the state's role in the nation, and national and local events with impact on the state. The course will cover state political, economic and social issues and how they have evolved with the history of the state. Prereq. - HIST 113 or 163.

HIST 291 Special Studies in History (Cr1)

See Statement on Special Studies. Offered on demand.

HIST 292 Special Studies in History (Cr2)

See Statement on Special Studies. Offered on demand.

HIST 293 Special Studies in History (Cr3)

See Statement on Special Studies. Offered on demand.

Hospitality (HOSP)

HOSP 101 Introduction to the Hospitality Industry (Cr3)(3:0)

Survey of the hospitality and tourism industry; the industry as a systems network; the major industry sectors; retail and wholesale travel agency, lodging and accommodations, food and beverage.

HOSP 105 Enhancing Guest Service (Cr3)(3:0)

This course is designed to provide the student with an understanding of the importance of guest service in a service economy and the critical necessity of service in hospitality management. Students will learn how to create value for guests by building guest loyalty. Specific skills will be enhanced including positive attitude projection, anticipation of and exceeding customer expectations and management tools that will help inspire others to offer excellent guest service.

HOSP 111 Food and Beverage Management (Cr3) (3:0)

This course is designed to provide students with an understanding of the hospitality food service industry, it's variety of operations/ outlets and how to gain the skills to successfully manage these operations/outlets. Areas of study include an overview of food and beverage outlets, food service marketing, menu analysis, menu cost and pricing strategies. Analysis will be done on service standard operating procedures, types of service, food and beverage sourcing, and beverage management.

HOSP 201 Strategic Leadership in Hospitality (Cr3) (3:0)

This course is designed to acquaint students with the leadership, management, supervision and quality issues facing today's hospitality industry. It covers the organization and management of hospitality operations.

HOSP 210 Human Resources Management for the Hospitality Industry (Cr3) (3:0)

Recruiting, selection, orientation, training and development, performance appraisals, compensation, discipline methods, and development of the skills to be a successful manager within the culturally diverse hospitality industry.

HOSP 212 Hospitality Financial Reporting (Cr3) (3:0)

This course will provide an understanding of the principles of finance and accounting and to comprehend the money implications of decisions in hospitality.Basic relevant financial concepts and financial tools are introduced to improve business decision making, including how to read balance sheets, income statements, profit and loss, cash flow statements, critical ratios and other financial measurements and to interpret what the numbers mean.

HOSP 215 Hospitality Sales and Marketing (Cr3) (3:0)

Marketing strategies in product and service specific to the hospitality industry; basic methods in presentation, pricing, packaging, and promotion; analysis of major market segments and techniques to reach these markets. Students will develop a marketing plan for group business taking a meeting planner from initial site selection through actual servicing of a function. Also available through Online Learning.

HOSP 221 Hospitality Management Practicum (Cr3) (.5:15)

Structured work experience in selected hotels, resorts or restaurants; minimum of 225 contact hours. Students are required to function in a variety of workstations to reinforce learned classroom/lab skills. The student will be required to submit evaluations of his/her work. The application of hospitality management principles to the work environment services as valuable learning experience for the student. Prereq. - HOSP 101, 105, 111, 201, 210 and 215.

HOSP 223 Disney College Program (Cr0)

Students live and work at Walt Disney World and learn current business practices, customer service, leadership skills, communication skills, workforce diversity, and corporate trends. While there, students must also take at least one 3 credit Disney course, which is accredited by the American Council on Education (ACE). Administrative fee: $50. Prereq. - Currently enrolled at NCC, have completed a minimum of 12 college credits, have a minimum cumulative GPA of 2.0.

HOSP 224 Disney Advanced Internship (Cr0)

Students work full time at Walt Disney World as part of an Advanced Internship designed to give them career-related experience in their chosen field, or one that they are considering. A variety of fields are available such as: accounting and finance, marketing and sales, chemistry, conservation education, veterinary science, biotechnology, library science, human resources, and hospitality to name a few. Administrative fee: $50. Prereq. -Must be currently enrolled at NCC, in good academic standing, meet all the requirements for the particular Advanced Internship (such as experience and program of study), successfully participate in competitive selection process with Disney College recruiting staff, and be approved by NCC Career Services Director. Some Advanced Internships require prior Disney World Experience (HOSP 223).

HOSP 293 Special Studies in Hospitality Management (Cr3)

See Statement on Special Studies on page 12. Offered on demand.

Hotel Management (HOTL)

HOTL 110 Hospitality Law (Cr3) (3:0)

Innkeeper laws, common law, and the legal rights and obligations of the guest and the innkeeper; case study approach.

HOTL 140 Club Management (Cr2)(2:0)

This course introduces students to club management in the various types of clubs and club sectors. Concepts covered include the club boards of directors, service excellence, leadership, quality management systems, strategic and financial management, club marketing, human resources, guest rooms, food and beverage operations, and computer systems.

HOTL 150 Resort Management (Cr2)(2:0)

This course highlights the operation and management of resort properties. Details are presented in planning, development, financial investment management,and marketing that deal with the unique nature of resort business. Analysis of management systems and methods for development of full-service resorts are presented, along with comparison of specialized requirements for different types of resorts based on location, climate, activities, and life-style.

HOTL 207 Rooms Division Management (Cr3)(3:0)

Practical applications of front office management, housekeeping and facilities management; utilization of property management software which includes reservations, scheduling and the night audit. Prereq. - HOSP 101.

Human Services (HUSV)

HUSV 101 Direct Service Professionalism (Cr3)(3:0)

Overview of the role of the direct service provider and the collaboration of paraprofessionals working with one another to insure the delivery of optimal support to individuals with disabilities. Prereq. - Completion of competency exam for Direct Service Provider I and II.

HUSV 105 Facilitating Positive Behavior (Cr3)(3:0)

Overview of positive supports for consumers with challenging behaviors and reviews human development, learning styles, and teaching techniques. Emphasis is placed on understanding the function of behavior and supporting individuals with challenging behaviors using positive approaches. Students will explore how their individual values and personal experiences influence the easy in which they respond to and assess behavior. Students will learn methods for completing functional assessments, observing and documenting behavior, implementing and reporting progress on learning/behavior plans. Prereq. - Completion of competency exam for Direct Service Provider I and II; HUSV 101.

HUSV 110 Physical and Developmental Supports(Cr3) (3:0)

Overview of the role of the direct service provider as a paraprofessional and improve the psychomotor skills necessary to provide optimal support to individuals with disabilities. Prereq. - Completion of competency exam for Direct Service Provider I and II; HUSV 101 and 105.

Humanities (HUMA)

HUMA 121 The American Work Experience (Cr3)(3:0)

Interdisciplinary humanities course using history, literature and the arts, ethics, and cultural studies to deepen the student's knowledge and understanding of two centuries of Americans at work.

HUMA 140 Women and Power (Cr3)(3:0)

An interdisciplinary introduction to Women's Studies using art, film, history, literature and music. Prereq. - ENGL 101.

Interdisciplinary Studies (INTS)

INTS 101 Critical Thinking (Cr3) (3:0)

A sequential study of thinking and reasoning abilities, emphasizing active, independent, and comprehensive thinking to solve problems, analyze, infer, and evaluate issues, reason critically, and understand and apply concepts.

INTS 291 Special Studies in Interdisciplinary Studies (Cr1)

See Statement on Special Studies. Offered on demand.

INTS 292 Special Studies in Interdisciplinary Studies (Cr2)

See Statement on Special Studies. Offered on demand.

INTS 293 Special Studies in Interdisciplinary Studies (Cr3)

See Statement on Special Studies. Offered on demand.

INTS 294 Special Studies in Interdisciplinary Studies (Cr4)

See Statement on Special Studies. Offered on demand.

Interior Design (INDS)

INDS 100 History of Interior Design and Furniture (Cr3) (3:0)

Survey of the development of interior design and furniture styles form antiquity to the present; history of interior space, architectural details and furniture; social, political, economic and technological perspectives as they relate to the interior aesthetic of each period; lectures supported with visual slides; one field trip.

INDS 105 Introduction to Interior Design (Cr3) (2:2)

Outline of period styles, decoration as related to architecture, analysis of line, character of form, and expression. Characteristics of the historical and modern periods in interior design and furniture. The work of the past and its modern adaption. A survey of design; architectural, industrial, and fashion, with particular emphasis on furniture and design. Formerly ARCH 105.

INDS 121 Graphics and Presentation Techniques for Interior Designers (Cr3) (2:2)

Continued development of the graphic language of architecture with emphasis on interiors. Hand skills are developed as orthographic drawings are extended to the format language of architecture and developed into formal plans, elevations, sections and details. Computer and hand skills continue to be incorporated as tools in the design process. Emphasis on color theory and color application is included. Presentation techniques will also be an emphasis, students will develop both graphic and oral presentation skills. Prereq.- ARCH 101 and 110 with a C or better; Coreq.- ARCH 150.

INDS 130 Interior Materials and Structure (Cr3) (2:2)

Investigation, analysis, evaluation, history, manufacturing, and application of decorative textiles, wall and floor coverings, and accessories. Proper relationships of line, form, color, and texture. Formerly ARCH 125.

INDS 160 Bath and Lighting Design (Cr3) (3:0)

Investigation of bath design through aesthetics, materials and ergonomic considerations; space analysis, programming and planning; design projects including bath layouts, materials, counters, and storage; wall and floor surface material; lighting design as it relates to baths; furniture, cabinetry, light fixtures, and space planning. Prereq. - INDS 121 with C or better.

INDS 165 Kitchen and Lighting Design (Cr3) (3:0)

Investigation of kitchen design through aesthetics, materials and ergonomic considerations; space analysis, programming and planning; design projects including kitchen layouts, materials, counters, storage and fixtures; wall and floor surface material; lighting design as it relates to kitchens; furniture and cabinetry design and space planning as it relates to the kitchen environment. Prereq. - INDS 121 with C or better.

INDS 200 Professional Internship (Cr3) (0:0:160 practicum)

General office experience giving the student a broad exposure to the practice environment; student work under the direction of a design professional to gain hands-on experience applying knowledge and skills in the practice setting. Gives students the opportunity to apply practical office experience for credit, particularly students already working in the field.

INDS 225 Residential Interior Design Studio (Cr3) (2:2)

Assembling and harmonizing furniture and decorative objects from the point of view of utility and beauty. Analysis of furniture arrangement and room composition, draperies and window treatments, and lighting. Practical problems illustrating the requirements of certain types of residential rooms. Incorporation of the computer as a design tool. Preparation of written research and design position papers on assigned design problems and their solutions. Formerly ARCH 225. Prereq. - INDS 121 with C or better.

INDS 255 Commercial Interior Design Studio (Cr3) (3:2)

The application of the design fundamentals and trade information to problems of contract interior design. Emphasis on space analysis and planning, coordination of furnishings and equipment, design function, and aesthetics of interior space in relation to individual and group needs. Incorporation of the computer as a design tool. Design projects, the procedure and development of a design project from start to completion. Preparation of written research and design position papers on assigned design problems and their solutions. Formerly ARCH 255; only one may be applied to graduation. Prereq. - INDS 105, ARCH 101, ARCH 110; Coreq.- ARCH 265, INDS 160.

Journalism (JOUR)

JOUR 101 Journalism and Society (Cr3) (3:0)

History and current climate of journalism in America; ethical problems in the practice of journalism using a case study approach; principal public criticism of news media, roles and functions of journalism in a multicultural society. Also available through Online Learning.

JOUR 102 Copyediting (Cr3) (3:0)

Editing copy, writing headlines and captions; some layout, coordinating news values with space limitations; consideration of ethical problems in the management of news. Pre- or coreq. - ENGL 101. Also available through Online Learning.

JOUR 103 Newswriting (Cr3) (2:2)

Fundamentals of newswriting and news gathering; finding stories, covering community events, interviews and beat reporting; news values, legal and ethical issues. Formerly ENGL 103. Pre- or coreq. - ENGL 101. Also available through Online Learning.

JOUR 201 Feature Writing (Cr3) (3:0)

Fundamentals of feature writing, chiefly for newspapers; finding story ideas; conducting research and interviews; developing articles using delayed, narrative or anecdotal leads; applying 'fiction techniques' such as characterization, setting, dialogue, metaphor and description. Formerly ENGL 105. Prereq. - JOUR 102 and 103. Also available through Online Learning.

JOUR 202 Reporting in the Information Age (Cr3) (3:0)

Publishing to the Internet; basic HTML and Web page design; computer-assisted reporting techniques including research, retrieval, analysis and presentation of data in news and feature stories. Prereq. - JOUR 102 and 103. Also available through Online Learning.

JOUR 203 Writing for Public Relations (Cr3) (3:0)

Introduction to the principle of public relations and marketing communications; application of a journalistic style to the preparation of Position Papers, Backgrounders, Fact Sheets, Biographical Sketches, and News Releases. Prereq. - JOUR 101 and 103 (for Journalism majors) or ENGL 101C (for other majors). Also available through Online Learning.

Library Technical Assistant (LIBT)

LIBT 101 Introduction to Library Service (Cr3) (3:0)

Development, function, organization, and services of various types of libraries, library terminology, interlibrary loan, and circulation procedures. Available through Online Learning.

LIBT 115 Reference Resources and Services (Cr3) (3:0)

Selection, critical examination, and practice in the use of general and specialized reference tools. Available through Online Learning.

LIBT 203 Technical Services (Cr3) (3:0)

This is an introduction to the elements of library technical services, including cataloging, classification, acquisitions, serials management, preservation, outsourcing and collection development and management. The student will be able to apply learned skills to perform collection analysis and to acquire, organize and manage both print and non-print materials. Available through Online Learning.

LIBT 207 Library Management (Cr3) (3:0)

Management principles of a small library; administration, planning, collection development and management, public services, reference services, working with trustees, volunteers, and friends groups. Available through Online Learning.

LIBT 209 Computers in Libraries (Cr3) (3:0)

This course is an introduction to computer applications in libraries, including an introduction to library automation systems, Internet searching, and technology administration. The course is designed to prepare students to manage technology and understand its implications in the information and library industry. Available through Online Learning.

LIBT 253 Literature for Children and Young Adults (Cr3) (3:0)

This course provides historical coverage of literature for children and young adults and includes criteria for the evaluation and presentation of books in all genres. The course will cover administration of children's services specifically planning, collection development, and programming. The course will also discuss issues and trends in children's services including multiculturalism, censorship, and technology. Available through Online Learning.

LIBT 291 Special Studies in Library Technical Assistant (Cr1)

See Statement on Special Studies. Offered on demand.

LIBT 292 Special Studies in Library Technical Assistant (Cr2)

See Statement on Special Studies. Offered on demand.

LIBT 293 Special Studies in Library Technical Assistant (Cr3)

See Statement on Special Studies. Offered on demand.

Mathematics (MATH)

MATH 020 PreAlgebra (Cr3) (3:0)

Review arithmetic operations on whole numbers, fractions, decimals, and integers. Introduces algebraic notation: solution of algebraic equations, inequalities, and applications. This course is intended to prepare students for MATH 022, Elementary Algebra. Also available through Online Learning.

MATH 022 Elementary Algebra (Cr4) (4:0)

First-year algebra after an arithmetic review. Prereq. - Appropriate competence as determined by mathematics placement test or MATH020 with C or better. Also available through Online Learning.

MATH 026 Intermediate Algebra (Cr3) (3:0)

Functions and graphs, linear equations and determinants, factoring, exponents, inequalities, systems and theories of equations, quadratic equations. Prereq. - Appropriate competence as determined by mathematics placement test or MATH 022 with C or better. Also available through Online Learning.

MATH 028 Elementary and Intermediate Algebra Combined (Cr5) (5:0)

Real numbers, polynomials, rational expressions, radical expression, linear equations, systems of equations, quadratic equations, graphs, functions, applications. Prereq. - appropriate competence as determined by mathematics placement test.

MATH 103 Applications in Mathematics (Cr3) (3:0)

Applications of mathematics emphasizing problem solving and reasoning.

MATH 118 Foundations of Mathematics I (Cr3) (3:0)

Problem solving and inductive reasoning, sets, functions, numeration systems, integers, rational numbers, number theory, decimals, percents, real numbers, and proportional reasoning; course based on state and national mathematics standards Prereq.- appropriate competence as determined by mathematics placement test or MATH 022 either with C or better. MATH 118 and 120 may not both count for credit toward the same degree. Also available through Online Learning.

MATH 119 Foundations of Mathematics II (Cr3) (3:0)

A continuation of Math 118; probability and statistics, elementary geometry, geometric constructions, geometric transformation, tessellations, nets, and measurement; course based on state and national mathematics standards. Prereq. -appropriate competence as determined by mathematics placement test or MATH 022 with a C or better. MATH 119 and 120 may not both count for credit toward the same degree. Also available through Online Learning.

MATH 120 The Nature of Mathematics (Cr3) (3:0)

The role of mathematics, inductive and deductive reasoning abilities, and problem-solving skills; number theory, probability, statistics, linear programming, and geometry; additional topics at the discretion of the instructor. Prereq. - appropriate competence as determined by mathematics placement test or MATH 022 with a C or better. Neither MATH 118 and 120 nor MATH 119 and 120 can count for credit toward the same degree. Also available through Online Learning.

MATH 140 College Algebra (Cr3) (3:0)

Concepts of algebra, graphs and functions, exponential and log functions, systems of inequalities and equalities, complex numbers. Prereq. - appropriate competence as determined by mathematics placement test or MATH 026 or 028 either with C or better. Also available through Online Learning.

MATH 145 Trigonometry (Cr3) (3:0)

Angles, trig functions, trig identities, solution of triangles, complex numbers. Prereq. - appropriate competence as determined by the mathematics placement test or MATH 140 with C or better. Also available through Online Learning.

MATH 150 Introductory Statistics (Cr3) (3:0)

Summarizing data, probabilities, chance variation, normal distribution, measurements. Prereq. - appropriate competence as determined by mathematics placement test or MATH 022 either with C or better. Also available through Online Learning.

MATH 160 Pre-Calculus (Cr4) (4:0)

Review of algebra, methods of proof, inequalities, graphing, functional analysis, transcendental functions, analytic geometry and a review of trigonometry. Prereq. - appropriate competence as determined by mathematics placement test or MATH 140 with C or better.

MATH 165 Applied Calculus (Cr3) (3:0)

Functions, limits, derivatives and their application, integration, and application of the definite integral. Prereq. - appropriate competence as determined by mathematics placement test or MATH 140 with C or better.

MATH 175 Calculus I with Review (Part 1) (Cr4) (4:0)

This course along with MATH 176 reviews both algebra and trigonometry throughout the study of calculus. The completion of both MATH 175 and 176 satisfies the MATH 180 requirement. Only MATH 175 and 176 or MATH180 may be applied to the degree program. Prereq. - appropriate competence as determined by the mathematics placement test or MATH 140 with C or better.

MATH 176 Calculus I with Review (Part 2) (Cr4) (4:0)

This course along with MATH 175 continues review of both algebra and trigonometry throughout the study of calculus. The completion of both MATH 175 and 176 satisfies the MATH 180 requirement. Only MATH 175 and 176 or MATH180 may be applied to the degree program. Prereq. - MATH 175 with C or better.

MATH 180 Calculus I (Cr4) (4:0)

Limits of functions, derivatives, chain rule, implicit differentiation, extrema, indefinite and definite integration; Fundamental Theorem of Calculus, transcendental functions and applications. Prereq. - appropriate competence as determined by mathematics placement test or MATH 145 or 160 either with C or better. Also available through Online Learning.

MATH 181 Calculus II (Cr4) (4:0)

Techniques and applications of integration, L'Hopital's Rule, improper integrals, solving differential equations using separation of variables, sequences and series, conics, parametric equations and polar coordinates. Prereq. - MATH 176 or 180 either with C or better, or score of 4 or 5 on AP Calculus AB or BC test.

MATH 191 Special Studies in Mathematics (Cr1)

See Statement on Special Studies. Offered on demand.

MATH 192 Special Studies in Mathematics (Cr2)

See Statement on Special Studies. Offered on demand.

MATH 193 Special Studies in Mathematics (Cr3)

See Statement on Special Studies. Offered on demand.

MATH 194 Special Studies in Mathematics (Cr4)

See Statement on Special Studies. Offered on demand.

MATH 202 Discrete Math (Cr3) (3:0)

An introduction to mathematical discrete structures and algorithms will be presented. Topics include: sets, logic, proof techniques, mathematical induction, combinatorics, relations, graph and trees. Prereq. - MATH 176 or 180 either with C or better.

MATH 210 Calculus III (Cr4) (4:0)

Vectors and the geometry of space, vector-valued functions, partial and directional derivatives, multiple integration, vector analysis, and Green's Theorem, the Divergence Theorem and Stokes' Theorem. Prereq. - MATH 181 with C or better.

MATH 211 Differential Equations (Cr4) (4:0)

First and higher order differential equations, linear equations, partial differential equations. Prereq. - MATH 210 with C or better.

MATH 291 Special Studies in Mathematics (Cr1)

See Statement on Special Studies. Offered on demand.

MATH 292 Special Studies in Mathematics (Cr2)

See Statement on Special Studies. Offered on demand.

MATH 293 Special Studies in Mathematics (Cr3)

See Statement on Special Studies. Offered on demand.

MATH 294 Special Studies in Mathematics (Cr4)

See Statement on Special Studies. Offered on demand.

Medical Assistant (MDAS)

MDAS 101 Medical Assistant Techniques I (Cr5) (3:6)

The course will provide an introduction to the clinical role of the Medical Assistant, and will include basic skills necessary to assist the physician and provide direct patient care in the medical office setting. Basic skills will include obtaining a patient history, taking vital signs, administering oral, liquid and topical medications. Telephone triage skills, documentation, infection control principles, use of an autoclave, and assisting with minor office procedures and surgery will also be covered. Restricted to Medical Assistant students. Pre- or Coreq. - OFAD 101 and 154, BIOS160. Additional course fee: $45.00

MDAS 105 Medical Assistant Techniques II (Cr5) (3:6)

This course focuses on advanced level clinical skills common to medical offices and clinics. The enhanced role and function of the medical assistance will focus on legal aspects, ethical aspects, patient education, CLIA waived testing, Point of Care Testing, Rapid response Teams for emergencies, electrocardiography, phlebotomy, respiratory and physical therapy and rehabilitation therapeutic procedures. Advanced pharmacology will focus on parenteral calculations, preparations, and administration, with a special component on immunizations throughout the lifespan. Restricted to Medical Assistant students. Prereq. - MDAS 101. Pre- or coreq. - OFAD 170, 172, 240.

MDAS 201 Medical Assistant Externship (Cr5) (2:7)

This course provides an opportunity for the student to integrate theory and practicum into reality practice while working in a medical environment. Medical assisting skills and knowledge will increase in skill proficiency learned in MDAS 101 and 105. This course offers clinical experiences in diagnostic procedures, and other competencies delegated to the entry-level medical assistant with consideration of the ethical and legal implications. This course includes a capstone medical assistant seminar component to link theory to practice to reality. Restricted to Medical Assistant students. Prereq.- MDAS 105.

Modern Languages (MDLA)

MDLA 102 Elementary French I (Cr3) (3:0)

Introductory course; instruction and practice in listening, speaking, reading and writing in the target language; emphasis on vocabulary and basic grammaticalstructures; cultural elements fully integrated in

all aspects of the course; designed for students who have not previously studied French, not appropriate for native French speakers.

MDLA 103 Elementary Spanish I (Cr3) (3:0)

Introductory course; instruction and practice in listening, speaking, reading and writing in the target language; emphasis on vocabulary and basic grammatical structures; cultural elements fully integrated in all aspects of the course; designed for students who have not previously studied Spanish, not appropriate for native Spanish speakers. Also available through Online Learning.

MDLA 112 Elementary French II (Cr3) (3:0)

Expansion of the skills acquired in an elementary French I course; instruction and practice in listening, speaking, reading and writing in the target language; emphasis on vocabulary and grammatical structures; cultural elements fully integrated in all aspects of the course; designed for students who have previously studied one semester of French at an elementary level.

MDLA 113 Elementary Spanish II (Cr3) (3:0)

Expansion of the skills acquired in an elementary Spanish I course; instruction and practice in listening, speaking, reading and writing in the target language; emphasis on vocabulary and grammatical structures; cultural elements fully integrated in all aspects of the course; designed for students who have previously studied one semester of Spanish at an elementary level; appropriate for native and non-native Spanish speakers. Also available through Distance Learning.

MDLA 122 Intermediate French I (Cr3) (3:0)

Expansion of the language skills learned at the elementary levels; emphasis on conversation, reading and writing, with brief reviews of grammar; designed for students who have previously studied two or three semesters of French; cultural elements fully integrated in all aspects of the course; taught primarily in French.

MDLA 123 Intermediate Spanish I (Cr3) (3:0)

Expansion of the language skills learned at the elementary levels; emphasis on conversation, reading and writing, with brief reviews of grammar; designed for students who have previously studied two or three semesters of Spanish; cultural elements fully integrated in all aspects of the course; taught primarily in Spanish and appropriate for native and non-native Spanish speakers.

MDLA 133 Intermediate Spanish II (Cr3) (3:0)

Expansion of the language skills learned at the elementary levels; emphasis on conversation, reading and writing, with brief reviews of grammar; designed for students who have previously studied two or three semesters of Spanish; cultural elements fully integrated in all aspects of the course; taught primarily in Spanish and appropriate for native and non-native speakers.

MDLA 291 Special Studies in Modern Language (Cr1)

See Statement on Special Studies. Offered on demand.

MDLA 292 Special Studies in Modern Language (Cr2)

See Statement on Special Studies. Offered on demand.

MDLA 293 Special Studies in Modern Language (Cr3)

See Statement on Special Studies. Offered on demand.

Music (MUSC)

MUSC 101 Introduction to Music (Cr3) (3:0)

Survey of the music of Western Civilization (Western European and American) from 600 AD to the present; primary emphasis on developing listening skills through a better understanding of our cultural background and the progressive development of musical styles and structures. Also available through Online Learning.

MUSC 110 Fundamentals of Music (Cr3) (3:0)

The basic elements of music; exercises dealing with writing and interpreting various musical symbols, as well as constructing scales, intervals, and triads; training in the skills of basic musicianship: ear training, diction, and an introduction to composition.

MUSC 130 Chorus (Cr1) (0:2.5)

Study and performance of representative choral literature. May be taken four (4) times for credit.

MUSC 141 Applied Music I (Cr2) (1:3)

Private instrumental or vocal music lessons arranged with a private music teacher through the Northampton Community College faculty music advisor. The faculty advisor will assist the student in finding an appropriate teacher when necessary. The student will need to complete a minimum of one lesson per week with the private teacher and five practice hours per week during the semester. Student pays private tuition fees.

MUSC 191 Special Studies in Music (Cr1)

See Statement on Special Studies. Offered on demand.

MUSC 192 Special Studies in Music (Cr2)

See Statement on Special Studies. Offered on demand.

MUSC 193 Special Studies in Music (Cr3)

See Statement on Special Studies. Offered on demand.

MUSC 242 Applied Music II (Cr2) (1:3)

Private instrumental or vocal music lessons arranged with a private music teacher through the Northampton Community College faculty music advisor. The faculty advisor will assist the student in finding an appropriate teacher when necessary. The student will need to complete a minimum of one lesson per week with the private teacher and five practice hours per week during the semester. Student pays private tuition fees. Prereq. - MUSC 141.

MUSC 243 Applied Music III (Cr2) (1:3)

Private instrumental or vocal music lessons arranged with a private music teacher through the Northampton Community College faculty music advisor. The faculty advisor will assist the student in finding an appropriate teacher when necessary. The student will need to complete a minimum of one lesson per week with the private teacher and five practice hours per week during the semester. Student pays private tuition fees. Prereq. - MUSC 242.

MUSC 244 Applied Music IV (Cr2) (1:3)

Private instrumental or vocal music lessons arranged with a private music teacher through the Northampton Community College faculty music advisor. The faculty advisor will assist the student in finding an appropriate teacher when necessary. The student will need to complete a minimum of one lesson per week with the private teacher and five practice hours per week during the semester. Student pays private tuition fees. Prereq. - MUSC 243.

Nanofabrication (NANF)

NANF 211 Materials, Safety and Equipment Overview for Nanofabrication (Cr3) (2:2)

This course will provide an overview of basic nanofabrication processing equipment and materials handling procedures. The focus is on procedural, safety, environment, and health issues in equipment operation and materials handling. Emphasis is on using state-of-the-industry processing equipment in the Nanofabrication Facility cleanrooms. Prereq. - permission of department. Offered at the Nanofabrication facility of Pennsylvania State University, main campus.

NANF 212 Basic Nanofabrication Processes (Cr3) (2:2)

The course will provide an overview of basic processing steps in nanofabrication. A step-by-step description of the equipment and processes needed to fabricate devices and structures will be examined for microelectromechanical (MEM) devices, biomedical 'lab-on-chip' structures, display devices, and microelectronic devices including the diode, transistor, and full CMOS structures. Students will undertake 'hands-on' processing. Prereq. - permission of department. Offered at the Nanofabrication facility of Pennsylvania State University, main campus.

NANF 213 Thin Films in Nanofabrication (Cr3) (2:2)

This course will cover thin film deposition and etching practices in nanofabrication. The purpose is to develop a full understanding of the use of, and the processing involved in, thin film materials in nanofabrication. The emphasis is on learning with and using state-of-the-art processing equipment in the Nanofabrication Facility

cleanrooms. Prereq. - permission of department. Offered at the Nanofabrication facility of Pennsylvania State University, main campus.

NANF 214 Lithography for Nanofabrication (Cr3) (2:2)

Lithography is a key part of the nanofabrication equipment, processing, and materials base. This course will cover all aspects of lithography from design and mask fabrication to pattern transfer and inspection. Emphasis will be on using state-of-the-art lithography equipment in the Nanofabrication Facility cleanrooms. Prereq. - permission of department. Offered at the Nanofabrication facility of Pennsylvania State University, main campus.

NANF 215 Materials Modification in Nanofabrication (Cr3) (2:2)

This course will cover in detail the processing steps used in modifying material properties in nanofabrication. The purpose is to provide hands-on experience across the spectrum of materials modification techniques used in nanofabrication. The emphasis is on learning and using state-of-the-art materials-modification equipment and materials characterization tools in the Nanofabrication Facility clean rooms. Prereq. - permission of department. Offered at the Nanofabrication facility of Pennsylvania State University, main campus.

NANF 216 Characterization, Packaging, and Testing of Nanofabricated Structures (Cr3) (2:2)

This course will examine a variety of techniques and measurements essential for controlling device fabrication, device performance, and device coupling to the outside world and device stability. The emphasis will be learning with and using state-of-the-art packaging equipment in the Nanofabrication Facility clean rooms. Prereq. - permission of department. Offered at the Nanofabrication facility of Pennsylvania State University, main campus.

NANF 270 Nanofabrication Seminar (Cr1) (1:0)

Seminar course that provides an overview of the processes used in nanofabrication. Formerly ELEC 270.

Nursing (NURS)

NURS 101 Introduction to Nursing (Cr8) (4:12)

Fundamental nursing knowledge and skills to provide basic nursing care to patients across the lifespan; the nursing process, communication skills, and recognition of normal assessment parameters emphasized throughout the course; clinical application in a variety of settings. Restricted to Nursing Students. Additional course fees: $48.00.

NURS 151 Medical-Surgical Nursing for the Practical Nurse (Cr8) (4:12)

Application of nursing principles to medical-surgical health problems affecting patients across the lifespan; development of critical thinking and communication skills through clinical application in a variety of settings. Restricted to Nursing Students. Prereq. - NURS 101 and BIOS 160; Pre- or coreq.- PSYC 258.

NURS 205 Geriatric Nursing for the Practical Nurse (Cr4) (1.3:8.3)

Emphasis on application of nursing interventions to address the complex health care needs of geriatric patients; basic principles of nursing management within the scope of practical nursing; extended care facilities provide clinical experiences for the course. Restricted to Nursing Students. Prereq.- NURS 151, PSYC 258 and SOCA 103. Additional course fees: $37.00.

NURS 206 Maternal Nursing for the Practical Nurse (Cr4) (1.3:8)

Emphasis on providing nursing care to the childbearing family through the nursing process; exploration of the role of the practical nurse related to pregnancy, childbirth, and pediatrics in acute care and community settings. Restricted to Nursing Students. Prereq.- NURS 151, PSYC 258 and SOCA 103.

NURS 207 Mental Health Nursing for the Practical Nurse (Cr3) (1:6.2)

Application of the nursing process to address the needs of patients with common mental health problems; emphasis on the principles of therapeutic communication and relationships in providing nursing care in inpatient and outpatient settings. Restricted to Nursing Students. Prereq.- NURS 151, PSYC 258 and SOCA 103.

NURS 215 Nursing Care of Patients with Medical Surgical Problems (Cr8) (4:12)

Students learn to apply the nursing process to plan and provide care to patients of various age groups with medical-surgical problems. This course will include classroom, lab, and clinical experiences including health problems involving the cardiovascular, respoiratory, musculosketetal, neurological, sensory, gastrointestinal, endocrine and reproductive, renal system and integumentary systems. Restricted to Nursing Students. Prereq.- NURS 101.

NURS 223 Maternal Child Health Nursing (Cr4) (2:6)

The nursing process as it is related to care of the family throughout the childbearing cycle; clinical rotations in specialized inpatient and community settings. Restricted to Nursing Students. Prereq.- NURS 101, 215 and BIOS 204; Pre- or coreq.- BIOS 254; Coreq.- NURS 224. Additional course fees: $32.00.

NURS 224 Care of Mental Health Patients (Cr4) (2:6)

Principles of mental and psychiatric nursing in a variety of health care settings; directed toward maximizing therapeutic interactions. Restricted to Nursing students. Prereq. - NURS 101, 215 and BIOS 204; Pre- or coreq.- BIOS 254; Coreq.- NURS 223.

NURS 231 Nursing Seminar (Cr2) (2:0)

The professional role of the associate degree nurse is explored in depth as it relates to the health care delivery system; current issues and trends affecting nursing practice, such as role transition, health care policy and political process. Restricted to Nursing Students. Prereq. - NURS 223 and 224; Coreq.- NURS 257 and 258.

NURS 257 Care of Patients with Complex Problems I: Critical Care (Cr4) (2:6)

Emphasis on planning and providing care for patients with multiple acute and/or chronic health problems who present in emergency and critical care settings. This course will include classroom, lab and clinical experiences to enable the student to participate in providing complex patient care utilizing critical care skills and current technologies. Restricted to Nursing Students. Prereq.- NURS 223 and 224; Coreq.- NURS 231 and 258. Additional course fees: $53.00.

NURS 258 Care of Patients with Complex Problems II: Gerontology/Patient Care Management (Cr4) (2:6)

Emphasis on the nursing process to address the multiple needs of the aging population; basic concepts of management and leadership as they relate to the entry-level nurse; a variety of experiences to prepare the graduate to care for a group of patients throughout the lifespan. Restricted to Nursing Students. Prereq.- NURS 223 and 224; Coreq.- NURS 231 and 257.

NURS 291 Special Studies in Nursing (Cr1)

See Statement on Special Studies. Offered on demand. Restricted to Nursing students.

NURS 292 Special Studies in Nursing (Cr2)

See Statement on Special Studies. Offered on demand. Restricted to Nursing students.

NURS 293 Special Studies in Nursing (Cr3)

See Statement on Special Studies. Offered on demand. Restricted to Nursing students.

NURS 297 Special Studies in Nursing (Cr2)

See Statement on Special Studies. Offered on demand. Restricted to Nursing students.

Nutrition (NUTR)

NUTR 105 Introduction to Nutrition (Cr3) (3:0)

This course is designed to introduce the student to the fundamentals of nutrition related to health promotion and disease prevention throughout the life cycle. Topics include metabolism of carbohydrate, lipid, protein, vitamins, minerals, food and nutrition across the life span from pregnancy and fetal growth to old age. Also available through Online Learning.

Office Administration (OFAD)

OFAD 100 Electronic Keyboarding (Cr1) (1:0)

Self-paced course for all students wishing to develop a touch keyboarding skill for vocational and/or personal use; keyboard mastery developed using a computer and software using a self-paced approach with emphasis on accuracy and speed; completion speed - 25 words per minute. OFAD 100 + 146 may be used in lieu of OFAD 101. Only one of the following - OFAD 100 + 146 or OFAD 101 may be applied to graduation.

OFAD 101 Keyboarding I on Microcomputers (Cr3) (3:0)

Develops the touch-typing technique using the personal computer for keyboard mastery; develops mastery of formatting techniques for preparation of: letters, complete reports, tables, memos and resumes, with a minimum speed of 30 wpm for course completion. OFAD 100 + 146 may be used in lieu of OFAD 101. Only one of the following - OFAD 100 + 146 or OFAD 101 may be applied to graduation.

OFAD 111 Trends in Office Automation (Cr3) (3:0)

Current trends in information processing software and related technologies encountered in today's office; introduction and practical application of the most current Windows operating system to include: Windows basics, Windows Explorer using My Computer, accessory utilization, and Control Panel applications; mastery of navigating and using the Internet; presentation software basics; ongoing updates of the latest technological advances. OFAD 147 + 148 + 149 may be used in lieu of OFAD 111. Only one of the following - OFAD 147 + 148 + 149 or OFAD 111 may be applied to graduation.

OFAD 121 Keyboarding II on Microcomputers (Cr3) (3:0)

Reinforcement of correct "touch" keyboarding techniques with emphasis on speed and accuracy with a completion speed of 40 words per minute; develops mastery of formatting "mailable" business documents using word processing software on microcomputers to accomplish the following: complex letters, a variety of business reports, memos and memo reports, enhanced complex and lengthy tables, template modification and application, mail merge correspondence and originally designed office forms and publications. Prereq. - OFAD 101.

OFAD 125 Word Processing Applications (Cr3) (3:0)

For experienced "touch" typists who have had limited exposure to word processing applications; word processing functions including: creating, saving and retrieving documents, formatting, using tools such as: thesaurus, spellcheck, grammatik; printing options and special print features, pagination, headers and footers, search and replace, file maintenance and management, advanced table functions, text columns, macros, merging, styles, outlining, creating graphs, forms development and desktop publishing features; mastery to be accomplished using heavily revised documents. Prereq. - completion of OFAD 101 or touch typing skill of at least 40 words per minute.

OFAD 131 Machine Transcription (Cr3) (3:0)

Development of transcribing skill with speed and accuracy to meet the machine transcription requirements of business offices. Pre- or coreq.- OFAD 121 or departmental permission.

OFAD 141 Introduction to Word (Cr1) (1:0)

Self-paced course designed for personal and/or vocational use for students wishing to master the fundamentals of Microsoft Word. Prereq. - keyboarding skill and Windows experience.

OFAD 142 Introduction to Excel (Cr1) (1:0)

Self-paced course designed for personal and/or vocational use for students wishing to master the fundamentals of Microsoft Excel; creation and formatting of worksheets and charts, use of Excel's wizards and productivity features to enter functions and analyze data. Prereq. - keyboarding skill and Windows experience.

OFAD 143 Introduction to Access (Cr1) (1:0)

Self-paced course designed for personal and/or vocational use for students wishing to master the fundamentals of Microsoft Access; creation, modification, and of sorting database tables, creation of queries and reports, and design of forms. Prereq. - keyboarding skill and Windows experience.

OFAD 146 Formatting with Word (Cr2) (2:0)

Self-paced course designed for personal and/or vocational use for students wishing to increase keyboarding speed and accuracy; primary emphasis on proper formatting techniques for preparation of letters, complete reports, tables, memos, and resumes; minimum speed of 30 wpm for course completion. OFAD 100 + 146 may be used in lieu of OFAD 101. Only one of the following - OFAD 100 + 146 or OFAD 101 may be applied to graduation. Prereq. - OFAD 100.

OFAD 147 Introduction to Windows (Cr1) (1:0)

Self-paced course designed for personal and/or vocational use for students wishing to master the fundamentals of Microsoft Windows; overview of the Microsoft Windows operating system and components of the active desktop; use of the Start menu; shortcuts; Windows accessory programs; opening data files; managing disks, folders and files; customizing the desktop.

OFAD 148 Learning the Internet (Cr1) (1:0)

Self-paced course designed for personal and/or vocational use for students wishing to master the fundamentals of using the Internet; hand-on practice using Netscape to navigate the World Wide Web and link to Internet resources; creating and sending email, FTP, using search engines, file downloading, locating newsgroups and other discussion tools. Prereq. - OFAD 147.

OFAD 149 Powerpoint (Cr1) (1:0)

Self-paced course designed for personal and/or vocational use for students wishing to master the fundamentals of Microsoft Powerpoint; creation of presentations in Powerpoint. Prereq. - OFAD 147.

OFAD 150 Essentials of Office 2007 (Cr3) (3:0)

Hands-on, self-paced development of skills using Office 2007: Word, Excel, and Powerpoint to enhance employability in today's office environment. Prereq.- Keyboarding skill and prior experience with earlier versions of Word, Excel, and Powerpoint.

OFAD 153 Real Estate Law (Cr3) (3:0)

Designed to prepare the student to become a legal office administrative support person who is either a paralegal or legal office administrator; basic concepts of the law of real property and rules affecting ownership, and transfer of ownership of real property; preparation of deeds, mortgages, title search and leases, including accumulating data and information needed to complete the above forms. Cross-listed as PARL 153; only one may be applied to a degree. Prereq. -word processing skill using Microsoft Word.

OFAD 154 Medical Terminology (Cr3) (3:0)

Comprehensive study of medical terminology with emphasis on prefixes, suffixes, word roots, and spelling principles through the use of programmed materials, interactive computer experiences, lecture, and audio tape delivery.

OFAD 155 Basic Medical Transcription (Cr3) (3:0)

Development of medical transcribing skill with emphasis on guidelines for spelling, grammar, punctuation, number, figure and abbreviation transcription, and formatting of medical correspondence and reports from prepared clearly dictated material; emphasis on accuracy. Minimum of three hours per week of lab to be arranged. Prereq. - OFAD 101 and 154; Pre- or coreq. - OFAD 121.

OFAD 163 Law Office Procedures (Cr3) (3:0)

Legal software for billing and docket control, procedures for filing, phone techniques, and appropriate handling of clients in a legal setting; divorce, bankruptcy, and keyboarding of wills. Prereq. - word processing skill using Microsoft Word or Word Perfect.

OFAD 170 Coding for Medical Services (Cr3) (3:0)

Development of ICD-9-CM and CPT coding skills with emphasis on coding guidelines, methodologies, rules and regulations for inpatient and outpatient medical/health services; in-class coding exercises including the selection of principal/secondary diagnosis and procedures, V codes, E codes, chronic and acute conditions. Prereq. - OFAD 101 and 154.

OFAD 172 Processing: Health Care Services Reimbursement (Cr3) (3:0)

Procedures and technical information to effectively process medical/health insurance claims; detail claims processing for each major insurance program;

understanding and application of ICD-9-CM/CPT codes to the superbill/encounter forms. Prereq. - OFAD 101 and 154; Pre or coreq. - OFAD 170.

OFAD 201 Advanced Document Production (Cr3) (3:0)

High-level production using simulated information processing projects; further development and enhancement of software skills; emphasis on extreme accuracy, mailability, appropriate priority setting, superior production speed, and demonstration of acceptable business attitudes applied to success in the office environment; exit keyboarding speed requirement of no less than 50 words per minute. Prereq. - OFAD 121.

OFAD 205 Microsoft Office Software Applications (Cr3) (3:0)

Development of word processing skills using Word, spreadsheet skills using Excel, and database skills using Access using MS Office software. OFAD 141+142+143 may be used in lieu of OFAD 205. Only one of the following - OFAD 141+142+143 or OFAD 205 may be applied to graduation. Pre- or coreq.- OFAD 101.

OFAD 221 Business Communications (Cr3) (3:0)

Comprehensive overview of the communications processes with special emphasis on practical workplace applications; students assess and develop their listening, speaking, writing, and research skills as they prepare business letters, memos, reports, presentations, proposals, and employment packages; students plan and conduct business meetings and practice effective group problem-solving skills. Only one of the following: BUSA 221 or OFAD 221 may be applied to a degree. Prereq. - ENGL 151 and CMTH 102. Also available through Online Learning.

OFAD 230 Modern Office Procedures (Cr3) (3:0)

Procedures for dealing with people, communication, travel, meeting arrangements, records management, as well as other support functions needed in today's automated office; dress, grooming and personality; prepares a student to function as an administrative assistant in a modern office setting. Prereq. - OFAD 121.

OFAD 240 Medical Office Management Practices (Cr3) (3:0)

Develops skills necessary for a medical assistant in a computerized medical office: medicolegal issues, interpersonal and phone communication skills dealing with patients and other visitors, appointment scheduling and time management, handling correspondence and processing mail, medical records management, dealing with professional fees, credit arrangements and collection procedures, managing office space and equipment. Prereq. - knowledge of medical terminology and typing skill.

OFAD 250 Internship (Cr3) (1:6)

Preparatory seminars preceding placement of each student in an office setting appropriate to the course of study; assignments by faculty in an environment where the intern will be supervised by an on site, experienced mentor; maintenance of a daily journal during the actual work experience, and development of a detailed procedures manual which reflects office operations. On-site visits will be made by the OFAD faculty. Only one of OFAD 250 or PARL 250 may be applied to a degree. Pre- or coreq.- OFAD 230 and completion of at least 40 credits in an OFAD degree program or PARL 215 and completion of at least 40 credits in the Paralegal program.

OFAD 254 Advanced Medical Terminology (Cr3) (3:0)

Continuation of in-depth study of medical terminology with emphasis on current usage pertaining to diagnostic techniques, diseases, pharmacology, surgical, and medical treatment. Prereq. - OFAD 154.

OFAD 255 Advanced Medical Transcription (Cr3) (3:0)

Practice and further development of medical transcription skill using up-to-date actual dictation on a wide variety of reports by many dictators provided by medical personnel in allied health settings; emphasis on high standards of accuracy and speed of transcription. Minimum of three hours per week of lab to be arranged. Prereq. - OFAD 154.

OFAD 270 Advanced Coding for Medical Services (Cr3) (3:0)

Advanced ICD-9-CM and CPT coding skills with emphasis on enhancing accuracy and refinement of effective use of resources. Course intended only for those students who possess a working knowledge of coding; will prove beneficial to those currently working in a medical billing setting. Prereq. - OFAD 170 and 172.

OFAD 291 Special Studies in Office Administration (Cr1)

See Statement on Special Studies. Offered on demand.

OFAD 292 Special Studies in Office Administration (Cr2)

See Statement on Special Studies. Offered on demand.

OFAD 293 Special Studies in Office Administration (Cr3)

See Statement on Special Studies. Offered on demand.

Optoelectronics Technology (OPTO)

OPTO 100 Technology of Telecommunications (Cr3) (2:2)

Concepts of telecommunications and data communications, their evolution and future convergence; history of telecommunications, development of standards, transmission of voice and data, data communications and the Internet, mobile communications and personal communications systems; movement from a wired world to a wireless and fiber optics communication system; methods for understanding technology utilized in telecommunications networks. Pre- or Coreq. - ELEC 126 or 130.

OPTO 101 Introduction to Optoelectronics (Cr4) (3:2)

Concepts of fiber optic communications; history of fiber communications, development of standards, transmission of light in the visible and infrared, voice and data communications and long haul communications, development and manufacture of the materials of fiber, sources, and detectors in fiber optics and associated equipment for light transmission, and introduction to global and local fiber communications systems. Prereq. - ELEC 126 or 130 or PHYS 225; Pre- or coreq.- PHYS 101 or 215 or CHEM 120.

OPTO 201 Fiber Optic Test and Measurement (Cr4) (3:2)

Advanced studies in fiber optic components and systems testing; review of key components of fiber optics communications systems and their criteria for testing and evaluation; qualification of fiber components and systems testing and evaluation during manufacture, installation, and operation; evaluation of fiber systems delivering voice, data, and video and their unique requirements. Prereq. - OPTO 101.

OPTO 220 Application and Maintenance of Fiber Optic Systems (Cr3) (2:2)

Direct experience with fiber installations; fiber optic systems installation and maintenance for data, voice, and video systems; students design and evaluate fiber installations and review applications, fiber preparation, fiber termination, and fiber communications component connections. Prereq. - ELEC 126 or 130 or PHYS 225; Pre- or coreq.- CHEM 120 or PHYS 101 or PHYS 215.

OPTO 240 Optoelectronic Systems and DWDM (Cr4) (3:2)

Continuation of study of optoelectronic systems and the utilization of DWDM (Dense Wavelength Division Multiplexing) as the methodology for expansion of optoelectronic systems; managing light within a DWDM system, principles and devices associated with DWDM systems and components, introduction to managing lightwave systems using all optical switching techniques, and future developments in multiplexing light on other scales such as HWDM (Hyperfine WDM). Prereq. - OPTO 101.

OPTO 270 Optoelectronics Practicum (Cr2) (0:0:8 practicum)

Workbased experience assisting in the servicing or manufacture of optoelectronic devices and systems with focused exposure in carrying out assembly and test, routine maintenance, optoelectronic/fiber optic lab setup, equipment calibration and repairs, and customer relations; written analysis of problem solving project. Pre- or coreq. - OPTO 101 and at least one OPTO 200-level course.

Paralegal (PARL)

PARL 101 Introduction to Paralegal Studies (Cr3) (3:0)

Basic introduction to the American legal system and the variety of work done in the public and private practice of law by attorneys and

paralegals working under the supervision of attorneys; emphasis on substantive and procedural aspects of law and the role of paralegals in accomplishing varied tasks within the legal system; examination of the structure and operation of the federal and state court systems; discussion of the ethical considerations inherent in the performance of various functions by paralegals. Formerly PARL 180.

PARL 151 Family Law (Cr3) (3:0)

Basic common law and statutory concepts of family law and domestic relations. Topics include, among others, marriages, separation, divorce, annulment, marital property, the parent-child relationship, child custody and supports, adoptions, guardianship, domestic relations court procedures, and the paralegal's role in the delivery of family law legal services. Ethical obligations, family law terminology and relevant technology in domestic relations practice are also presented. Pre- or coreq. - PARL 101.

PARL 153 Real Estate Law (Cr3) (3:0)

Designed to prepare the student to become a legal office administrative support person who is either a paralegal or legal office administrator; basic concepts of the law of real property and rules affecting ownership, and transfer of ownership of real property; preparation of deeds, mortgages, title search and leases, including accumulating data and information needed to complete the above forms. Cross-listed as OFAD 153; only one may be applied to a degree. Pre- or coreq. - PARL 101; Prereq. - word processing skill using Microsoft Word.

PARL 156 Estates and Trusts (Cr3) (3:0)

Preparation of wills, trusts and administration of estates; responsibilities of the legal assistant in these areas; sample forms for wills, trusts and administration of an estate; preparation of tax returns. Pre- or coreq. - PARL 101.

PARL 161 Business Organizational Law (Cr3) (3:0)

Principles of law applicable to operation of a business as a sole proprietorship, partnership, and corporation; documents needed for organization, operation and dissolution of each. Pre- or coreq. - PARL 101.

PARL 162 Contract Law (Cr3) (3:0)

Analysis and application of the law pertaining to contract classification, formation, interpretation, remedies, and dispute resolution under common law and the Uniform Commercial Code. Emphasis on the role of the paralegal in accomplishing various tasks under the supervision of an attorney in all phases of the contracting process. Pre- or coreq.- PARL 101.

PARL 163 Tort Law (Cr3) (3:0)

Introduction to the area of civil wrongs including intentional torts, negligence, product liability, trespass, and nuisance cases. Examination of the common defenses to such actions and appropriate remedies for the victims. The paralegal's role in the delivery of legal services, ethical obligations, legal terminology and relevant technology in a tort and personal injury law practice are also presented. Pre- or coreq. - PARL 101.

PARL 166 Criminal Law and Procedure (Cr3) (3:0)

Overview of the paralegal's role in various law offices involved in the criminal justice process. Substantive aspects of criminal law including the general principles of criminal liability, analysis of particular crimes, parties to crimes, and the substantive defense to crimes. Constitutional safeguards and procedures from arrest through trial, sentencing, punishment, and appeal are also studied. Ethical obligations, appropriate legal terminology and relevant technology in criminal law and procedure are examined. Pre- or coreq. - PARL 101.

PARL 187 Litigation Practice and Procedure (Cr3) (3:0)

Civil litigation including appeals, drafting pleadings, interrogatories, depositions, and motions; aspects of criminal practice. Pre- or coreq. - PARL 101; Prereq. - typing skill.

PARL 215 Legal Research and Writing (Cr3) (3:0)

The legal resources available to the legal profession; practical experience doing research, performing conventional and computerized legal research. Prereq. - ENGL 151; Pre- or coreq. - PARL 101.

PARL 250 Internship (Cr3) (1:6)

Preparatory seminars preceding placement of each student in an office setting appropriate to the course of study; assignments by faculty in an environment where the intern will be supervised by an on-site, experienced mentor; maintenance of a daily journal during the actual work experience, and development of a detailed procedures manual which reflects office operations. On-site visits will be made by PARL faculty. Only one of OFAD 250 or PARL 250 may be applied to a degree. Pre- or coreq.- PARL 215G, 101 and completion of at least 40 credits in the Paralegal program.

PARL 291 Special Studies in Paralegal (Cr1)

See Statement on Special Studies. Offered on demand.

PARL 292 Special Studies in Paralegal (Cr2)

See Statement on Special Studies. Offered on demand.

PARL 293 Special Studies in Paralegal (Cr3)

See Statement on Special Studies. Offered on demand.

Philosophy (PHIL)

PHIL 111 On Death and Dying (Cr3) (3:0)

Provides a number of perspectives on death, how people have perceived and responded to it, its personal, social, and artistic aspects; provides routes for exploring the ways of grief and the relationships between our lives and our deaths. Also available through Online Learning.

PHIL 121 World Religions (Cr3) (3:0)

World-wide religions (Hinduism, Buddhism, Taoism, Judaism, Christianity, Islam and Native American spirituality), their concepts of deity, world-views, and theories on the problems and potentials of humankind; emphasis on essential ethical, metaphysical, and spiritual beliefs and practices, similarities and differences, and relations to contemporary life.

PHIL 201 Introduction to Philosophy (Cr3) (3:0)

A study of central philosophical questions and theories about human existence, our experience of and place in the world; God, free will, scientific humanism, existentialism; ancient Greek, Judeo-Christian, Modern and 20th century thought; emphasis on development of rational skills and reflective thinking. Approved for the Honors Program. Prereq. - Reading and writing competence as determined for ENGL 101. Also available through Online Learning.

PHIL 202 Ethics and Moral Problems (Cr3) (3:0)

A critical study of major ethical theories and concepts and their application to selected moral issues, to aid in shaping one's own ethical stance and in making sound ethical choices; Hedonism, Egoism, Altruism, Authenticity, Existentialism, Absolutism, Relativism, Utilitarianism, Human Rights and Duty, Justice, Multiculturalism and Feminism. Also available through Online Learning.

PHIL 204 Asian Philosophies (Cr3) (3:0)

A survey of major Asian traditions, texts, and thinkers, especially in Indian and Chinese philosophy. Course themes will include Asian philosophical perspectives on the nature of the mind, body, self, soul, identity, knowledge, reality, compassion, duty, karma, and nirvana. Approved for the Honors Program. This course will involve the disciplined practices of concentration and meditation. Pre or coreq. - PHIL 121 or 201.

PHIL 291 Special Studies in Philosophy (Cr1)

See Statement on Special Studies. Offered on demand.

PHIL 292 Special Studies in Philosophy (Cr2)

See Statement on Special Studies. Offered on demand.

PHIL 293 Special Studies in Philosophy (Cr3)

See Statement on Special Studies. Offered on demand.

Physical Education (PHED)

PHED 111 Tennis I (Cr1) (0.5:1.5)

Designed for the beginning student to develop and acquire the skills, techniques and knowledge, thus enabling the student to successfully

participate in tennis on a lifetime basis. Coeducational.

PHED 116 Golf (Cr1) (0.5:1.5)

Designed for the development and acquisition of skills, techniques and knowledge to enable the student to successfully participate in golf on a lifetime basis. Coeducational.

PHED 117 Bowling I (Cr1) (0.5:1.5)

Designed for the beginning student to develop and acquire the skills, techniques, and knowledge thus enabling the student to successfully participate in bowling on a lifetime basis. Student works independently to achieve the objectives of the course. Additional lane fee will be charged. Coeducational. Also available through Online Learning. Additional course fees: $40.00.

PHED 120 Racquetball (Cr1) (0.5:1.5)

Designed to enhance the skills, techniques and knowledge to enable the student to successfully participate in racquetball on a lifetime basis. Coeducational.

PHED 121 Exercise Through Movement and Dance (Cr1) (0.5:1.5)

Designed for the development of physical and social needs through dance movements. Various dance methods employed to improve cardiovascular endurance and flexibility. Coeducational.

PHED 125 Weight Training I (Cr1) (0.5:1.5)

A course designed to introduce the student to basic principles and techniques of progressive resistance training. Instruction will include the use of free weights, selectorized machines, and other specialized equipment. Students will devise a personal program designed to meet their fitness needs. Medical clearance or testament of health status is required. Also available through Online Learning.

PHED 130 Fitness I (Cr1) (0.5:1.5)

Application of training techniques relating to the development and improvement of strength, flexibility, and cardiovascular endurance; emphasis on the effects of exercise on the physiological systems of the body, development of individualized fitness programs and development of an appreciation of the values derived from such training programs and lifetime sports activities. Medical clearance or testament of health status is required. Also available through Online Learning.

PHED 135 Yoga and Pilates (Cr1) (0.5:1.5)

Designed to introduce the student to the fundamental philosophies and skills of Yoga and Pilates. Instruction will include flexibility and other physiological benefits as well as psychological and relaxation benefits.

PHED 140 Backpacking (Cr1) (.5:1.5)

This course is designed to instruct students in the basic skills and equipment of hiking, backpacking, wilderness camping and cooking, navigation, trip planning, safety, and first aid. Instruction will emphasize the value of backpacking as a life-long activity. Students will plan and execute an overnight trip.

PHED 211 Tennis II (Cr1) (0.5:1.5)

A course designed to enhance the student's skills, techniques and knowledge of the game of tennis, thus enabling the student to participate on a more competitive basis. Medical clearance or testament of health status is required. Prereq.- PHED 111 or departmental approval.

PHED 217 Bowling II (Cr1) (0.5:1.5)

A course designed to enhance the student's skills, techniques and knowledge thus enabling the student to participate on a more competitive lifetime basis. Student works independently to achieve the objective of the course. Coeducational. Prereq. - PHED 117 or departmental permission. Also available through Online Learning. Additional course fees: $40.00.

PHED 230 Fitness II (Cr1) (0.5:1.5)

This course builds upon concepts learned in Fitness I to provide a deeper understanding of fitness and a more complete view of wellness. Goal setting, special exercise considerations, injury prevention, heart health, nutrition, and weight management will be examined. Students will employ these concepts to further enrich fitness programs and lead a healthier lifestyle. Medical Clearance or testament of health status is required. Prereq.- PHED 130 or departmental permission. Only available through Online Learning.

PHED 291 Special Studies in Physical Education (Cr1)

See Statement on Special Studies. Offered on demand.

PHED 292 Special Studies in Physical Education (Cr2)

See Statement on Special Studies. Offered on demand.

PHED 293 Special Studies in Physical Education (Cr3)

See Statement on Special Studies. Offered on demand.

PHED 295 Special Studies in Physical Education (Cr1)

See Statement on Special Studies. Offered on demand.

Physics (PHYS)

PHYS 101 Physics I (Cr4) (3:2)

Motion, forces, work, power, energy, momentum, rotation, equilibrium, fluids, temperature, and heat. Pre- or coreq.- MATH 140. Also available through OnlineLearning.

PHYS 151 Physics II (Cr4) (3:2)

Simple harmonic motion, wave motion, electric fields, DC circuits, AC circuits, power, magnetism, electromagnetic waves, light, optics. Prereq. - PHYS 101. Also available through Online Learning.

PHYS 152 Physical Science II (Cr3) (2:2)

A study of basic physics and chemistry including properties of matter, force and motion, work and machines, heat and combustion, electricity and magnetism, mechanics of liquids and gases, basic chemical reactions, atomic energy and radiation.

PHYS 215 Physics for Science and Engineering I (Cr5) (4:3)

Physical quantities, particle kinematics and dynamics, work, energy, momentum, rotational mechanics, equilibrium, heat, and thermodynamics. Pre- or coreq. - MATH 181.

PHYS 225 Physics for Science and Engineering II (Cr5) (4:3)

Electrostatics, DC and AC circuits, magnetism, Maxwell's equations, electromagnetic waves, light, sound, wave motion, optics, and introduction to modern physics. Prereq. - PHYS 215.

PHYS 291 Special Studies in Physics (Cr1)

See Statement on Special Studies. Offered on demand.

PHYS 292 Special Studies in Physics (Cr2)

See Statement on Special Studies. Offered on demand.

PHYS 293 Special Studies in Physics (Cr3)

See Statement on Special Studies. Offered on demand.

PHYS 294 Special Studies in Physics (Cr4)

See Statement on Special Studies. Offered on demand.

Political Science (POLS)

POLS 101 Introduction to Political Science (Cr3) (3:0)

Basic issues of political science including political theory, comparative political institutions, dominate ideologies and ideas, the importance of law, the domestic and Third World struggles for civil and political equality and international relations. Also available through Online Learning. Approved for the Honors Program.

POLS 105 American Constitutional Law (Cr3) (3:0)

The role of law in society; the function of the U.S. constitution in balancing the interests of the government and the individual; separation of powers, the First Amendment freedoms, the right to privacy, the war power, criminal justice, and desegregation; analysis and critique of Supreme Court's landmark decisions in constitutional law and the effects on American society. Also available through Online Learning.

POLS 110 American National Government (Cr3) (3:0)

Constitutional interpretation and implementation, powers and procedures of executive, legislative and judicial branches and the American political process. Offered alternate years. Also available through Online Learning.

POLS 170 Politics of Modern Turkey (Study-Abroad) (Cr3) (3:0)

This course focuses on the politics of modern Turkey with special reference to the culture, history, economy, and social life of the

country. The political structure and institutions of Turkey are studied with special focus on Turkish secular democracy within the context of tradition, modernity and change.

POLS 202 International Relations (Cr3) (3:0)

The varieties of relationships among the nations of the world, with special attention to the role of the United States in dealing with economic interdependence, and the major international relations issues including that of national security from the end of World War II to the present. Offered alternate years. Also available through Online Learning.

POLS 205 Women and Politics (Cr3) (3:0)

This course explores women's quest for political equality in the U.S. and globally. It examines the social, cultural and economic factors affecting women's political power. The course also surveys contemporary global issues and their impact on the status of women.

POLS 251 State and Local Government (Cr3) (3:0)

The varieties of subnational government in the United States, with special attention paid to Pennsylvania institutions and politics, from the revolutionary era to the present.

POLS 291 Special Studies in Political Science (Cr1)

See Statement on Special Studies. Offered on demand.

POLS 292 Special Studies in Political Science (Cr2)

See Statement on Special Studies. Offered on demand.

POLS 293 Special Studies in Political Science (Cr3)

See Statement on Special Studies. Offered on demand.

Psychology (PSYC)

PSYC 103 Introduction to Psychology (Cr3) (3:0)

Research and psychotherapeutic methods, and the following topics: history of psychology, biological bases of behavior, sensation, perception, consciousness, learning, memory, language and thought, intelligence, motivation, emotion, human development, personality, stress and coping, psychological disorders, social behavior. Prereq. - Reading and writing competency as determined for ENGL 101. Also available through Online Learning. Approved for the Honors Program.

PSYC 221 Responding to the Bereaved (Cr3) (3:0)

Comprehensive study of bereavement, including grief and mourning, complicated grief, bereaved children and adolescents, spousal bereavement, bereaved parents, principles of bereavement caregiving and assessment. Students will explore ways to structure the funeral director's role as caregiver, address their feelings and attitudes toward death, and receive training in communication skills enhancement. Restricted to Funeral students.

PSYC 251 Child Psychology (Cr3) (3:0)

The individual from conception to adolescence: physically, mentally, emotionally and socially from the research standpoint. PSYC 251 and PSYC 258 may not both be used for credit. Prereq. - PSYC 103. Also available through Online Learning.

PSYC 254 Adolescent Psychology (Cr3) (3:0)

The physical, personal and social parameters of adolescence with co-emphasis on group trends and individual adjustments within those trends. Prereq. - PSYC 103.

PSYC 255 Abnormal Psychology (Cr3) (3:0)

Investigates the issues of normal versus abnormal behavior and surveys alternative views of the causes, treatment and prevention of various disorders. Prereq. - PSYC 103. Also available through Online Learning.

PSYC 258 Developmental Psychology (Cr3) (3:0)

Theory and research based; physical, cognitive and socio-personal/emotional dimensions of human development from preconception to death; universal patterns and individual variations within those patterns. PSYC 251 and PSYC 258 may not both be used for credit. Prereq. - PSYC 103. Also available through Online Learning.

PSYC 265 Psychology of Sex and Gender (Cr3) (3:0)

Students explore both human sex (the biological identification as male/female) and gender (the social/personal construct of feminine/masculine) from a psychological perspective. Students investigate the theories and research of biological, psychological, and cultural determinants. The influence of sex and gender is examined in areas of development, aggression, achievement, communication, relationship, employment, and physical and mental health. Prereq. - PSYC 103.

PSYC 291 Special Studies in Psychology (Cr1)

See Statement on Special Studies. Offered on demand.

PSYC 292 Special Studies in Psychology (Cr2)

See Statement on Special Studies. Offered on demand.

PSYC 293 Special Studies in Psychology (Cr3)

See Statement on Special Studies. Offered on demand.

Quality (QUAL)

QUAL 110 Metrology (Cr2) (2:1)

Concepts of measurement systems; application and use of mechanical gages and instruments; inspection techniques and data collection; graphical inspection analysis; calibration methods; gage control techniques.

QUAL 151 Nondestructive Testing Principles (Cr4) (1:6)

Fundamental concepts and related application of liquid penetrant, magnetic particle, ultrasonic, radiographic and visual testing methods in material inspection as per AWS, ASTM, ASME and ASNT code books and/or guidelines.

QUAL 152 Destructive Testing Principles (Cr3) (2:2)

Detailed instruction and application of destructive testing procedures for materials as per ASTM (American Society for Testing Materials).

QUAL 155 Quality Applications in GMAW and GTAW Pipe (Cr3) (1:4)

Development of problem solving skills using GMAW and GTAW processes for various complex steel structures that are designed to eliminate unacceptable discontinuities as stated in acceptance criteria; student writing of technical analysis on suggested techniques. Prereq. - WELD 120 and 121.

QUAL 156 Quality Applications in SMAW Plate (Cr5) (2:6)

Development of problem solving skills using SMAW process for simple steel structures that are designed to eliminate unacceptable discontinuities as stated in acceptance criteria; student writing of analysis on suggested techniques. Prereq. - WELD 103.

QUAL 158 Quality Applications in SMAW Pipe (Cr2) (1:2)

Development of problem solving skills using SMAW for various complex steel structures that are designed to eliminate unacceptable discontinuities as stated in acceptance criteria; student writing of analysis on suggested techniques. Prereq. - QUAL 156.

QUAL 210 Statistical Quality Control (Cr3) (3:0)

Controlling the output variability of the process and producing quality products and services using applied sampling and statistical process control; data collection SPC application, chart construction interpretation, process capability, and taking corrective action; use of spreadsheet and SPC software in data collection and analysis; and statistical experiments. Prereq. - Evidence of score of 500 or higher on SAT mathematics exam or 11th grade PSSA mathematics score of 1300 or higher, or completion of MATH 026 or 028 with C or better or appropriate competence in MATH 150 as determined by the mathematics placement test, and industrial experience or ENGG 125 or ELEC 177.

QUAL 215 Quality Assurance (Cr3) (3:0)

Planning and analysis of quality; customer requirements identification, design review and processes, quality analysis and feedback techniques such as experimental models, process yields analysis, testing, reliability, audit practices, customer/supplier relations, and application of ISO 9000 series of quality standards.

QUAL 221 Applied Quality Practicum (Cr3) (0:0:12 practicum)

Actual work experience in manufacturing or service organization providing exposure to the application of Quality

methodology to its process, product or service; emphasis on cultural issues, documentation and data collection/reporting, auditing, ethics, and problem solving. Pre- or coreq. - QUAL 210 and 215.

Radiography (RADT)

RADT 102 Fundamentals of Radiologic Sciences (Cr3) (3:0)

Students in the course will learn about the structure of the health care system, attitudes and communications, human diversity, professionalism and ethical behavior, infection control, medical emergencies, and medical terminology. Restricted to Radiography students or those without an RT background planning to enter the Sonography program. Program director's signature required.

RADT 107 Clinical Education I (Cr2) (0:16)

On-campus preparatory instruction for first three weeks in basic radiation protection, safety, body mechanics, nursing procedures, and an overview of medical ethics. Clinical rotations through the front desk, file room, transportation, general radiography, and fluoroscopy. Restricted to Radiography students. Additional course fees: $46.00.

RADT 111 Radiographic Procedures I (Cr4) (3:3)

Students will perform radiographic procedures of the respiratory and abdominal systems, upper and lower extremities, shoulder and pelvic girdle using energized radiographic equipment. Images are performed on phantoms. Restricted to Radiography students. Coreq. - RADT 107. Additional course fees: $15.00.

RADT 113 Imaging and Exposure (Cr2) (2:0)

An introduction to radiographic imaging, exposure and an analysis of the factors that influence radiographic quality including photographic and geometric properties, image receptors and image processing. Restricted to Radiography students. Additional course fees: $15.00.

RADT 125 Sectional Anatomy for Medical Imagers (Cr1) (1:0)

Human anatomy in the transverse, longitudinal, and coronal planes with application to sonography and other imaging modalities in radiology. Restricted to Radiography and Sonography students. Runs with DMSG 125. Prereq. - BIOS 204; Pre- or coreq. - BIOS 254.

RADT 127 Clinical Education II (Cr3) (0:20.8)

Continuation of clinical education rotations in general radiography and fluoroscopy with an introduction to mobile radiography. Restricted to Radiography students. Prereq. - RADT 107.

RADT 137 Clinical Education III (Cr3) (0:30.4)

Continued observation and application of the principles and procedures involved in general radiography and fluoroscopy; introduces mobile surgical radiography, IVP, and tomography procedures; includes a seminar on advanced procedures and related topics. Restricted to Radiography students. Prereq. - RADT 127.

RADT 201 Advanced Imaging (Cr2) (2:0)

General techniques, procedures, and equipment pertinent to Interventional Radiography, MRI, Mammography and Bone Densitometry are studied. In depth CT fundamentals, positioning, patient prep and scanning procedures. Restricted to Radiography students. Prereq. - RADT 208.

RADT 205 Pathology for Radiographers (Cr2) (2:0)

A study of the disease process affecting body organs and systems; stressing those areas most commonly encountered and demonstrated in diagnostic radiology. Restricted to Radiography students.

RADT 207 Clinical Education IV (Cr3) (0:24)

Continuation of Clinical Education III, with rotations in general radiography, fluoroscopy, mobile and surgical radiography, IVP and tomography. Restricted to Radiography students. Prereq. - RADT 137. Additional course fees: $46.00.

RADT 208 Imaging Equipment and Radiation Production (Cr3) (3:0)

The course covers the x-ray circuit, permanent installation and mobile x-ray and fluoroscopic/image intensification units, automatic exposure control, conventional tomography, magnification and electronic imaging along with the application of quality standard and quality control principles. The principles of x-ray production, interactions of photons with matter, technique formation, and exposure calculations will be applied through discussion. Restricted to Radiography students. Prereq.- RADT 113.

RADT 210 Level II Radiographic Procedures (Cr4) (3:3)

Systematic study, demonstration and practice of radiographic procedures involving the sacro-iliac joints, vertebral column, bony thorax, skull, portable radiography, trauma radiography and pediatric studies using phantom plus simulated radiography. Restricted to Radiography students. Prereq. - RADT 111. Additional course fees: $15.00.

RADT 227 Clinical Education V (Cr5) (0:36.8)

Continuation of student clinical education with emphasis on increasing professional competency and review of previously acquired radiographic concepts and skills. For those students who have completed all the course requirements before the last six weeks of the course, there is a voluntary six-week internship from one of the following: CT, MR, interventional radiology, mammography, bone densitometry. Restricted to Radiography students. Prereq. - RADT 207.

RADT 230 Radiation Biology/ Protection (Cr3) (3:0)

Biologic effects of ionizing radiation on human tissues, advanced radiation protection/ safety, and federal/state regulations. Restricted to Radiography students.

RADT 242 Digital Imaging and Analysis (Cr2) (2:0)

The study of the components, principles and operation of digital imaging systems and the factors that impact image acquisition, display, and retrieval in radiology along with the principles of digital system quality assurance and maintenance. Restricted to Radiography students. Prereq.- RADT 208.

RADT 245 Senior Seminar (Cr1) (1:0)

A capstone experience that encompasses analysis, application, and evaluation in the principles, concepts, and the art and science of medical imaging. Restricted to Radiography students. Prereq.- RADT 207.

RADT 291 Special Studies in Radiologic Technology (Cr1)

See Statement on Special Studies. Offered on demand. Restricted to Radiography students.

RADT 292 Special Studies in Radiologic Technology (Cr2)

See Statement on Special Studies. Offered on demand. Restricted to Radiography students.

RADT 293 Special Studies in Radiologic Technology (Cr3)

See Statement on Special Studies. Offered on demand. Restricted to Radiography students.

Reading (READ)

READ 016 Reading Fundamentals (Cr3) (2:2)

Lays the foundation for success with complicated text; provides the fundamental skills necessary to gain meaning from text materials. Prereq. - as determined by reading department placement test.

READ 017 Critical Reading (Cr3) (2:2)

Prepares students for success in English I and other core courses; students are guided through experiences designed to enhance their understanding of complicated text; readings taken from recent periodicals, and assignments designed to emphasize the importance of inferential thinking; the role prior knowledge plays in the learning of new information; the importance of summary writing as a check to comprehension. Prereq. - an 'R' in Reading Fundamentals or as determined by the reading department placement test.

Real Estate (REAL)

REAL 101 Real Estate Fundamentals (Cr2) (2:0)

Terminology, conveyancing and land use, introduction to Pennsylvania real estate law, overview of specialized skills and opportunities in the real estate profession. Restricted to Real Estate majors or with approval of the dean.

REAL 105 Real Estate Practice (Cr2) (2:0)

Methods of obtaining listings, advertising, selling, settlements, preparation of closing statements. Restricted to Real Estate majors or with approval of the dean.

REAL 111 Real Estate Law I (Cr3) (3:0)

The law of Pennsylvania as it relates to title in real property and various other interests in real estate. Offered alternate years. Restricted to Real Estate majors or with approval of the dean.

REAL 115 Real Estate Construction (Cr2) (2:0)

Introduction to the means and methods of building construction, from construction site considerations to the completion of a building contruction project, examining the steps that lead from start to completion. Restricted to Real Estate majors or with approval of the dean.

REAL 121 Real Estate Law II (Cr3) (3:0)

An in-depth study of historic cases in Pennsylvania real estate law. Offered alternate years. Prereq. - REAL 111. Restricted to Real Estate majors or with approval of the dean.

REAL 201 Real Estate Finance (Cr4) (4:0)

Concepts of finance, equity versus debt, types of debt financing, value of collateral in securing real estate financing, mortgage loan to property value, mortgage amortization. Offered alternate years. Restricted to Real Estate majors or with approval of the dean.

REAL 203 Real Estate Appraisal I (Cr3) (3:0)

Real estate economics, the principles affecting property values, analysis of sites, neighborhoods, individual properties and the application of the appraisal process in determining value. Offered alternate years. Restricted to Real Estate majors or with approval of the dean.

REAL 205 Real Estate Office Managment (Cr2) (2:0)

Course covers the principles of directing a real estate company's financial and human resources in a cost-efficient and effective way so that the organization functions as a profitable enterprise. Reastricted to Real Estate majors or with approval of the dean.

REAL 223 Real Estate Appraisal II (Cr3) (3:0)

Theories and techniques of appraisal with special emphasis on income producing real estate; principles of value theory and appraisal terminology; income approaches with attention on building appropriate capital rates and estimating revenue and expenses. Restricted to Real Estate majors or with approval of the dean. Prereq. - REAL 203 or consent of instructor.

REAL 291 Special Studies in Real Estate (Cr1)

See Statement on Special Studies. Offered on demand.

REAL 292 Special Studies in Real Estate (Cr2)

See Statement on Special Studies. Offered on demand.

REAL 293 Special Studies in Real Estate (Cr3)

See Statement on Special Studies. Offered on demand.

Safety Health And Environmental (SAFT)

SAFT 101 The Environment and Health (Cr3) (3:0)

The relationship between human health and environmental disease agents; impact of physical, chemical and biological assaults on man and environment in air, water and land; origin, evaluation, and control of environmental health problems common to modern societies.

SAFT 110 Industrial Hygiene Fundamentals (Cr3) (3:0)

Basic principles of occupational hygiene including major types of environmental factors and stresses; pathology of the lungs, skin, ears, and eyes as routes of entry for environmental stresses; recognition, evaluation and control in a wide variety of occupational exposures. Pre- or coreq. - BIOS 105 or permission of the instructor.

SAFT 121 Industrial Safety (Cr3) (3:0)

Industrial accident prevention including the history of the industrial safety movement and a comprehensive look into the Federal Occupational Safety and Health Act of 1971.

SAFT 131 Hazardous Materials Management and Technology (Cr3) (3:0)

Classification of hazardous materials and examination of the associated regulatory requirements; planning and implementing a hazardous materials management program in an organization including emergency response at operations level. Prereq. - SAFT 121; Pre- or coreq.- CHEM 105 or permission of instructor.

SAFT 151 Environmental Regulatory Law (Cr3) (3:0)

Interpretation and application of the current laws that regulate the release of harmful substances into the environment; federal, state and local laws, regulatory systems, liabilities, and management strategies for environmental compliance.

SAFT 210 Industrial Hygiene Technology (Cr3) (2:2)

Industrial hygiene field survey and measurement techniques and equipment; hands-on experience using technology such as noise meters and air sampling pumps. Prereq. - SAFT 110.

SAFT 211 Industrial Fire Protection and Life Safety (Cr3) (3:0)

Principles and methods of protecting the industrial facility from fire and ensuring safety of employees; fire chemistry and NFPA classification of fire, construction methods, building evacuation, fire detection and suppression systems, and OSHA requirements for life safety. Prereq. - SAFT 121 or permission of instructor.

SAFT 241 Occupational Safety Standards (Cr3) (3:0)

Safety standards and compliance requirements as they apply to general industry: personal protective equipment, material handling, electrical safety, machine guarding, respiratory protection and building/facilities; and construction: welding and compressed gases; confined space entry; ladders and scaffolding; excavation; trenching and shoring; portable power tools; cranes and rigging. Prereq. - SAFT 121.

SAFT 251 Safety Administration (Cr3) (3:0)

Managing an organization's overall safety program including risk management, insurance and Worker's Compensation; record keeping, analysis and feedback; handling an OSHA inspection; safety training; vehicle safety. Prereq. - SAFT 121.

SAFT 255 Accident Investigation (Cr3) (3:0)

Elements of a total safety program designed to identify and remedy loss producing conditions and events; facility inspections, hazard recognition, job safety analysis, accident prevention and reporting, incident recall, fault tree and other systems safety analysis techniques. Prereq. - SAFT 121.

SAFT 261 Safety/Environmental Practicum (Cr1) (0:0:4)

Actual work experience in an occupational safety and/or environmental function of an organization. Prereq. - completion of at least 40 credits in the program and one 200-level SAFT course.

Small Business Management (SBUS)

SBUS 101 Introduction to Small Business (Cr1) (1:0)

Steps and decisions needed in planning business operation; assessing financial and personal resources and goals; locating business resources, networks, and associations; assessing need for and working with business professionals; developing a business plan including financial projections; developing a marketing plan. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 102 Accounting for Small Business (Cr2) (2:0)

Steps of setting up accounting/ bookkeeping systems in small business establishments; basic debit and credit ledger, profit and loss statements, taxes, cost cutting and one-write bookkeeping. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 103 Financial Management for Small Business (Cr1) (1:0)

Understanding and using financial statements, diagnosing company's financial condition, return on investment analysis, computing and using the break-even point in decision-making and determining cash flow. Restricted to Small

Business Management majors or with permission of the dean. Prereq. - SBUS 102 or instructor's permission. Also available through Online Learning.

SBUS 105 Marketing Methods for Small Business (Cr1) (1:0)

Marketing and advertising principles as they apply to the small business; marketing elements, demographics, the marketing and advertising interface, direct mail, using various media, the ad budget, and developing a theme. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 106 Human Resources Management (Cr1) (1:0)

Hiring and firing practices and relevant legal issues; employee interviews and evaluations; grievance procedures and the firing process; maintenance of personnel files; selection procedures; assessment and performance factors; motivation and job satisfaction. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 107 Small Business Law (Cr1) (1:0)

Legal problems faced by small business owners; bad debts and credit collections, business and personal bankruptcy, commercial relationships, contracts and the UCC, finances including secure transactions, usury and dealing with accounts receivable and payable. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 108 Microcomputers for Small Business (Cr1) (1:0)

General aspects of data processing and small business applications including accounting, inventory control, payroll; selection of hardware and software. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 109 Selling Skills for Small Business (Cr1) (1:0)

Principles, attitudes, art of sales, pitfalls, follow-ups, underselling versus overselling. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 110 Business Planning for Small Business (Cr1) (1:0)

Development of key elements of a small business plan including specific business analysis, market analysis, competitor analysis, organization and management, financial plans, and strategic action plan. Restricted to Small Business Management majors or with permission of the dean. Also available through OnlineLearning.

SBUS 111 Taxes for Small Business (Cr1) (1:0)

Nature of income tax regulations including tax planning, taxable income, and annual changes in tax rules; determining taxes for single proprietorships, partnerships, and corporations. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 112 Internet for Small Business (Cr1) (1:0)

Using the Internet as a tool to enhance small business; introduction to World Wide Web, using newsgroups, using mailing lists, chat, e-mail, ISP, installing software, choosing and using Web browsers and plug-ins, searching for business information, networking with small business managers, creating a Web page and exploring hot sites. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

SBUS 114 Communication Skills for Small Business (Cr1) (1:0)

Importance of clear communication techniques to small business; customer service, basic elements of communication process, formal versus informal communication, methods of persuasion, barriers to communication, listening techniques, presentation techniques and business writing skills. Restricted to Small Business Management majors or with permission of the dean. Also available through Online Learning.

Social Work (SCWK)

SCWK 101 Introduction to Social Work (Cr3) (3:0)

Introduction to social work as a profession; knowledge, values, and skills necessary for beginning level professional practice; academic and practice requirements for becoming a social worker; various fields of social work practice and the unique attributes of each; linkages between social work and other human service occupations; human diversity, client empowerment and social justice as common themes. Also available through Online Learning.

Sociology/ Anthropology (SOCA)

SOCA 102 Cultural Anthropology (Cr3) (3:0)

The analysis of human culture as it has evolved to the present, covering theories and methods, cultural universals and variations in such areas as marriage and family, politics, economics, kinship, religion and the arts, with an emphasis on non-Western and non-industrial societies. Also available through Online Learning.

SOCA 103 Principles of Sociology (Cr3) (3:0)

Concepts, theories and methods which form the sociological perspective of human behavior. Prereq. - Reading and writing competence as determined for ENGL 101. Also available through Online Learning. Approved for the Honors Program.

SOCA 105 American Ethnicity (Cr3) (3:0)

An exploration of the United States' ethnic diversity from a sociological perspective; history, present, and future of the social construction of race and ethnicity in the US; the impact of institutionalized power on the status of a variety of ethnic groups; contributions made by various ethnicities to the US. Prereq. - SOCA 103. Also available through Online Learning.

SOCA 125 Sociology of Families (Cr3) (3:0)

A sociological analysis of the family as a social institution including historical development, contemporary patterns in the United States, and possible future trends. Topics include the definition of family; families and work; love and sex; child-rearing; family violence; divorce and re-marriage; and variations in marriage and family patterns related to culture, class, race, ethnicity, gender, and sexual orientation. Prereq. - SOCA 103. Also available through Online Learning.

SOCA 150 Deviance (Cr3) (3:0)

Specialized study of the variety of deviant behaviors evidenced in American society; history and development of these sociological phenomena; contemporary issues and theories emphasized in all areas of current aberrant behavior. Prereq. - SOCA 103. Also available through Online Learning.

SOCA 204 Social Problems (Cr3) (3:0)

Current social problems in the United States examined from the major theoretical perspectives in sociology; substance abuse, crime and violence, family problems, ageism, sexism, racism, problems relating to work, education, urbanization, technology, health care, population and the environment. Prereq. - SOCA 103. Also available through Online Learning.

SOCA 210 Sociology of Gender (Cr3) (3:0)

This course is an exploration of the ways in which gender influences social life, institutions, and interactions. Students will also explore the continuing prevalence of gender, socialization, gender inequality, diverse gender experiences, and the influence of gender in major social institutions. Prereq. - SOCA 103.

SOCA 291 Special Studies in Sociology/ Anthropology (Cr1)

See Statement on Special Studies. Offered on demand.

SOCA 292 Special Studies in Sociology/ Anthropology (Cr2)

See Statement on Special Studies. Offered on demand.

SOCA 293 Special Studies in Sociology/ Anthropology (Cr3)

See Statement on Special Studies. Offered on demand.

Special Education (SPED)

SPED 160 Introduction to Special Education (Cr3) (3:0)

Nature and needs of children with special needs, with attention to the role of families; federal and state laws, including the Individuals with Disabilities Education Act (IDEA) and Pennsylvania Commonwealth laws and regulations; classifications of disabilities, service options, procedural safeguards; review of

current issues, research, and techniques for educating children with disabilities. Also available through Online Learning.

SPED 161 Accommodating Children with Exceptionalities in the Classroom (Cr3) (2:2)

Techniques of restructuring, adapting, and modifying education environments to accommodate individual needs of children, including the physical, behavioral, academic, communication, and social environments. Pre- or coreq.- SPED 160. Also available through Online Learning.

SPED 162 Foundations of Special Education (Cr3) (3:0)

Definition, etiology, and characteristics of a variety of disabilities; diagnostic material and techniques for identifying and assessing students with disabilities; complexities of disabilities in relationship to family systems and implications for educational services. Pre- or coreq.- SPED 160. Also available through Online Learning.

SPED 163 Instructional Strategies for Children with Exceptionalities (Cr3) (2:2)

Process of developing, implementing and monitoring individualized instructional strategies; implementation of Individualized Education Programs (IEP) through goals and objectives; special emphasis on working with children who are culturally and linguistically diverse. Pre- or coreq.- SPED 160. Also available through Online Learning.

SPED 164 The Paraeducator Professional (Cr3) (3:0)

The role and responsibilities of the paraeducator in relationship to the child, family, and educators; knowledge and skills necessary for collaboration and positive communication with families, regular and special educators and other professional staff within diverse learning environments; legal, health and safety, school systems, confidentiality, and professional standards issues. Pre- or coreq.- SPED 160. Also available through Online Learning.

SPED 166 Assistive Technology for Children with Exceptionalities (Cr3) (3:0)

Role of assistive technology as a related service in supporting children with exceptionalities in educational environments; legal requirements and funding issues; identification of national, state, and local resources and the opportunity for hands-on experiences with a wide array of technological devices. Pre- or coreq.- SPED 160. Also available through Online Learning.

SPED 210 Internship (Cr6) (2:0:15 practicum)

Field placement for 195 hours in an actual classroom under the supervision of a professional teacher; exposure to both inclusive and specialized settings. Prereq. - SPED 160, 161, 162, 163, 164, and 166. Also available through Online Learning.

Sport Management (SPRT)

SPRT 101 Introduction to Sport Management (Cr3) (3:0)

Effective sport management strategies and the wide variety of sport-related careers; definitions and directions of sport management, careers and options in sport management, and sport sociology, psychology, philosophy, and the modern history of both sport and management. Also available through Online Learning.

SPRT 152 Sports in Society (Cr3) (3:0)

Social processes that explain the pervasiveness and appeal of sport primarily in American culture; effects of sport on behavior and lifestyles of active and passive participants; investigation of historical developments and assessment of interrelationships among sport, culture, and major social institutions such as family, business, education, politics and religion. Also available through Online Learning.

SPRT 162 Facility Management and Event Planning (Cr3) (3:0)

An overview of facility management and event planning in the sport environment; an introduction to management theory and practice in relation to sport venues and the organization and planning of a sport industry-related event. Facility development, facility systems and operations, facility administration and event and activity management will be the focus. Also available through Online Learning.

Sports Medicine: Athletic Training (SMAT)

SMAT 101 Foundations of Athletic Training and Sports Medicine (Cr3) (3:0)

This course provides an introduction to sports medicine with an emphasis on the profession of athletic training. Students will be introduced to the roles of various disciplines within sports medicine; athletic training as an allied health profession; National Athletic Trainers' Association (NATA) structure and governance; athletic training competencies and proficiencies; education requirements, certification requirements, and continuing education requirements; interpersonal and intrapersonal skills important to uphold the NATA's code of ethics and standard of practice. Restricted to Sports Medicine majors. Coreq.- ENGL101.

SMAT 202 Kinesiology: Applied Anatomy (Cr3) (3:0)

This course is an introduction to the analysis of human movement based on anatomical and mechanical principles. Emphasis is placed on the anatomy and physiology of the muscular, skeletal, and nervous systems and their interaction in human movement and athletic performance. Restricted to Sports Medicine majors. Prereqs.- BIOS 254.

SMAT 230 Prevention and Management of Sport and Fitness Injuries (Cr3) (3:0)

This course provides an introduction to the prevention, evaluation and treatments of athletic related injuries. Emphasis is placed on learning musculoskeletal anatomy and recognizing the common signs and symptoms of injuries, illnesses, and disorders commonly seen in the physically active population. Restricted to Sports Medicine majors. Prereqs.- SMAT 101 and BIOS 204, Coreq.- SMAT 235.

SMAT 235 Basic Athletic Training Techniques Lab (Cr1) (0:2)

This course focuses on the application of psychomotor competencies and clinical proficiencies essential to becoming an entry-level Athletic Trainer. This introductory course emphasizes developing skills in injury prevention, injury and illness assessment, and using appropriate terminology and medical documentation to record injury and illness. Restricted to Sports Medicine majors. Prereqs.- SMAT 101 and BIOS 204, Coreq.- SMAT 230.

SMAT 240 Acute Care of Athletic Injuries and Illnesses (Cr4) (3:2)

This course focuses on acute management skills of common injuries and illnesses that active individuals commonly incur. This comprehensive course prepares the student to evaluate and stabilize an athlete for a variety of traumatic situations. Students will acquire the skills necessary to respond to the following emergencies: catastrophic injury to the head and neck, cessation of breathing and circulation, shock, heat and cold illnesses, internal injuries, or other life threatening or serious injury. Course includes certification in first aid, CPR for the professional rescuer, and AED use. Restricted to Sports Medicine majors. Prereqs.- SMAT 230, ENGL101.

SMAT 260 Exercise Physiology and Exercise Prescription (Cr3) (3:0)

This course will provide an introduction into concepts of exercise physiology. Students will develop an understanding of the acute physiological and chronic adaptations of the body to exercise. Neuromuscular, metabolic, cardiovascular, hormonal, and respiratory system will be examined. Emphasis will be placed on exercise testing and exercise prescription to prepare students to sit for nationally recognized personal training and health fitness instructor exams. Restricted to Sports Medicine majors. Prereqs.- BIOS 254.

Surgical Technology (SURG)

SURG 101 Surgical Technology I (Cr7) (6:1 Clinical*)

Fundamental course exposes the student to roles of the surgical technologist and other team members, health care organizations, communication skills, and the ever-changing physical environment of the operating room. An introduction to surgical care is presented including concepts of asepsis, scrubbing,

gowning, gloving and standard precautions. The preparation and care of supplies and equipment used for surgical procedures is included, Specific perioperative needs of the patient requiring surgical interventions are explored. The student is given the opportunity to develop correlating competencies through selected guided experiences in the clinical setting. (*1 Clinical credit = 80 clinical hours.) Restricted to Surgical Technology students. Prereq. - BIOS 202, BIOS 254, CMTH 102, ENGL 151C, MATH 140, PHIL 202G, SOCA 102, PSYC 103. Additional course fees: $206.00.

SURG 105 Surgical Technology II (Cr5) (3:2 Clinical*)

Advanced topics include developing a higher level of understanding to psychosocial stress in the patient and within the medical team. Students acquire an increased understanding of the legal and ethical foundations of health care practice. The course provides the student with didactic and clinical experience in scrubbing, gowning, gloving, of preparation of supplies and equipment, and the creation of a sterile field for selected surgical procedures. Specific intraoperative needs of a patient requiring surgical intervention are explored. (*1 Clinical credit = 80 clinical hours.) Restricted to Surgical Technology students. Prereq. - SURG 101. Additional course fees: $115.00.

SURG 110 Surgical Technology III (Cr9) (4:5 Clinical*)

A continuation of professional development for the surgical technology student with a focus on quality patient outcomes. The student is presented with more complex didactic and clinical related surgical procedures and equipment. Patient care concepts focus on an advanced understanding of intraoperative and immediate post-operative patient care needs and integrating concepts learned in the previous surgical technology courses and the enhanced role of service learning into their community role. (*1 Clinical credit = 80 clinical hours.) Restricted to Surgical Technology students. Prereq. -SURG 105. Additional course fees: $207.00.

SURG 115 Surgical Technology IV (Cr9) (4:5 Clinical*)

An advanced course focusing on entry into the workforce including job seeking skills and life long learning strategies. Special circumstances during surgical care are addressed, as well as the service learning role in the community developed from SURG 110. Didactic and clinical activities are related to more complex surgical techniques and serving in the advanced role as first scrub (solo) and assist to meet the standard requirements of attendance during surgical procedures. Basic concepts also related to robotics are also discussed. (*1 Clinical credit = 80 clinical hours.) Restricted to Surgical Technology students. Prereq. - SURG 110. Additional course fees: $207.00.

Veterinary Technician (VETC)

VETC 101 Veterinary Anatomy & Physiology (Cr4) (3:3)

Introduction to biochemistry, cell biology and histology, survey of the structure and function of domestic animals using a systems approach; physiology of domestic animals will be handled primarily in the lecture, while the anatomy will be discussed in the laboratory with the dissection of the cat as the primary tool. Prereq. - grade of B or better in high school biology within 5 years or BIOS 107. Additional course fees: $15.00.

VETC 110 Introduction to Veterinary Technology (Cr2) (0.5:3)

An introduction to the vocation of veterinary technology; orientation to professional organizations, practice management skills, client relations, medical terminology, ethics, legal and occupational issues; role of the veterinary technician in veterinary medicine, research, industry and private practice. Prereq. - admission into Veterinary Technician program.

VETC 115 Animal Management and Nutrition (Cr2) (2:0)

Management of domestic species; animal husbandry, reproduction, restraint, behavior, breed identification and preventative medicine; nutrition and feeding;animal management and feeding in an economic context. Prereq. - admission into Veterinary Technician program.

VETC 120 Veterinary Parasitology (Cr2) (1:3)

Clinically significant internal and external parasites of domestic animals; mites, lice, ticks, fleas, flies, nematodes, cestodes, trematodes and protozoans; parasite life cycles, host infection and pathology; prevention and treatment of parasitic infections; diagnosis via sample collection, preparation and microscopic evaluation during the lab section. Prereq. - admission into Veterinary Technician program. Additional course fees: $15.00.

VETC 125 Veterinary Clinical Laboratory Techniques (Cr4) (3:3)

Laboratory evaluation of various diagnostic samples including blood, urine and cytologic specimens; hematology, serum chemistry, serology, urine analysis and cytology as applied to veterinary medicine; laboratory work focusing upon lab technique and manual processing of samples; lecture focusing upon the indication for and interpretation of clinical pathology indices associated with disease states and immunologic function. Prereq. - admission into Veterinary Technician program and CHEM 135. Additional course fees: $15.00.

VETC 210 Large Animal Clinical Procedures (Cr3) (2:3)

Eight-week laboratory course conducted at the Vet Tech barn/ animal facility, designed to provide students with hands-on experience in large animal clinical procedures; restraint, physical examination, venipuncture, administration of medications via various routes, wound treatment, bandaging, sample collection, radiology and general husbandry procedures; species include cow, horse, sheep and goat. Attendance is mandatory. Prereq. - all the following: 1) admission into Veterinary Technician program, 2) proof of vaccination: rabies and tetanus, 3) proof of health insurance, 4) VETC 101, 110 and 115. Additional course fees: $85.00.

VETC 215 Animal Disease (Cr3) (3:0)

Provides students with a broad-based understanding of animal medicine and disease; pathogens, host pathology, diagnosis, treatment and prevention for large and small animal species; provides the necessary context in which to understand the "why" of doing diagnostic and therapeutic procedures. Principles of disease in large and small animal species; clinical symptomology, diagnosis, therapy, epidemiology, prevention of common diseases; toxicology, zoonotic diseases and medical emergencies; course organized around body systems and associated pathologic conditions. Prereq.- all of the following: 1) admission into Veterinary Technician program, 2) VETC 101, 110 and 125, 3) ENGL 151C.

VETC 218 Veterinary Pharmacology and Anesthesia (Cr3) (3:0)

Veterinary technicians will spend a significant portion of their time in both the veterinary pharmacy dispensing medication and in surgery serving as assistants and anesthetists. Students receive the theory of basic pharmacology and anesthesiology in this course and receive hands-on experience in a subsequent course. Theory and application of pharmacology and anesthesiology; pharmacologic principles including: drug administration, distribution, excretion and individual variability; drug side-effects, dosing and general pharmacologic calculations; pre-anesthesia patient assessment, pre-anesthetic drugs, induction, maintenance and post-operative patient monitoring; students work with various types of anesthetic equipment, operate anesthesia machines, EKG unit and a pulse oximeter. Prereq. - all the following: 1) admission into Veterinary Technician program, 2) CHEM 135, 3) VETC 101, 110, and 125.

VETC 220 Small Animal Clinical Procedures (Cr3) (1.5:4)

Provides students with hands-on experience conducting diagnostic and therapeutic procedures with small animals; students entering the job market must be able to easily make the transition from academic institution to the workplace; essentials in animal restraint and basic procedures; some basic specialty examinations. Laboratory course geared toward a variety of clinically relevant diagnostic and therapeutic procedures with small animal species; restraint, physical examination procedures, venipuncture, administration of medications, sample collection and general first aid and emergency care; students develop their technical skills in a veterinary setting. Attendance is mandatory. Prereq. - all the following: 1) admission into Veterinary Technician program, 2)proof of

vaccination: rabies and tetanus, 3) proof of health insurance, 4) VETC 101, 110 and 125. Additional course fees: $15.00.

VETC 225 Veterinary Radiology and Surgical Nursing (Cr4) (2.5:4)

Designed to develop technical competence in diagnostic radiology and surgical assisting and anesthesia; principles learned in previous courses applied in a veterinary setting using live animals. Overview of the basic principles of radiology; use and maintenance of radiographic/ imaging equipment, restraint and positioning of small animals and the development of diagnostic radiographs; troubleshooting for poor quality films; record keeping and safety issues; general principles of surgery, aseptic techniques, operating room protocol and surgical assisting by the veterinary technician; surgical instrumentation, surgical preparations, surgical assisting and pre, intra and post-operative nursing skills; students perform anesthesia on small animals and perform a prophylactic dentistry. Attendance is mandatory. Prereq. - all the following: 1) admission into Veterinary Technician program, 2) proof of health insurance, 3) proof of vaccination: rabies and tetanus, 4) VETC 101, 110, 125, 218 and 220.Additional course fees: $50.00.

VETC 228 Laboratory Animal Science and Exotics (Cr4) (3:3)

Due to the variety of job placement options, students must be prepared to work with laboratory animal and exotic species. Course provides foundation in lab animal medicine and disease; use and care of laboratory and research animals; laboratory animal biology, science and management; anatomy and physiology, nutrition, breeding, husbandry, sanitation, behavior, handling, nursing, euthanasia and necropsy; animal welfare regulations and ethics issues. Lecture, discussion, and laboratory sessions to provide hands-on experience with venipuncture, injections, gavage and necropsy; species include rats, mice, guinea pigs, rabbits and reptiles; exotic animal portion includes restraint, examination, medicine and disease and husbandry; species of exotics will vary with availability. Attendance is mandatory. Prereq. - all the following: 1) admission into Veterinary Technician program, 2) proof of health insurance, 3) proof of vaccination: rabies and tetanus, 4) VETC 101 and 115. Additional course fees: $15.00.

VETC 230 Laboratory Technician Externship (Cr4) (0:community placement)

Ten-week practicum conducted off campus at two designated community locations; clinical experience which is a capstone class aimed at providing students the opportunity to integrate the academic knowledge, critical thinking and technical skills developed during the program and directly apply and refine them in a work setting; opportunity to explore career options. Students must extern for a total of 180 hours during the 10 week summer term. Transportation and housing is the responsibility of the student. The college will be responsible for monitoring radiation exposure of externs. Prereq. - all of the following: 1) successful completion of all veterinary technology courses with a grade of C or better, 2) proof of health insurance, 3) proof of rabies and tetanus vaccination. Additional course fees: $70.00.

Welding Technology (WELD)

WELD 100 Welding Processes I (Cr2) (1:2)

Concepts and techniques in basic arc welding; hands-on experience in flat position shielded metal arc welding; safety practices; defect prevention approach. Formerly WELD 800.

WELD 101 Welding Processes II (Cr1) (0.5:1.0)

Technical information and experience in horizontal position shielded metal arc welding (SMAW); problem solving and defect analysis; proper use of oxy-fuel cutting apparatus; safety practices. Formerly WELD 101. Prereq. - WELD 100.

WELD 102 Welding Processes III (Cr1) (0.5:1.0)

Technical information and experience in vertical position shielded metal arc welding (SMAW); problem solving and defect analysis; safety practices; code information pertinent to welder certification per ANSI/AWS D1.1 (Structural Welding-Steel). Formerly WELD 802. Prereq. - WELD 101.

WELD 103 Welding Processes IV (Cr1) (0.5:1.0)

Technical information and experience in overhead position shielded metal arc welding (SMAW); torch brazing; problem solving and defect analysis; safety practices. Formerly WELD 803. Prereq. - WELD 102.

WELD 115 Weld Symbol Applications (Cr2) (2:0)

Reading and interpreting typical welding drawings including symbology for joints, fillets, groove, surface, flange, and other weld types; brazed joints; nondestructive testing symbols; related shop math review. Formerly WELD 815.

WELD 120 Gas Tungsten Arc Welding Processes (Cr2) (1.4:1.3)

Advanced technical information and experience in Gas Tungsten Arc Welding (GTAW) and cutting processes using standard and programmable equipment; problem solving; defect analysis; troubleshooting equipment. Prereq. - WELD 103.

WELD 121 Semiautomatic Welding Processes (Cr2) (1.4:1.3)

Advanced technical information and experience in using most semiautomatic welding processes involving standard and programmable equipment; problem solving; defect analysis; troubleshooting equipment. Formerly WELD 821. Prereq. - WELD 103.

WELD 123 Advanced Plate Welding Processes (Cr5) (2:6)

Skill development in Shielded Metal Arc Welding (SMAW) using all position grooved joints on plate with and without the use of backup material on steel; emphasis on defect prevention, weld analysis techniques, problem solving, skill development and code information pertinent to certification. Formerly WELD 823. Prereq. - WELD 103.

WELD 124 Advanced Pipe Welding Processes (Cr2) (1:2)

Skill development in Shielded Metal Arc Welding (SMAW) using 2G, 5G and 6G positions of grooved joints on pipe with and/or without the use of backup material on steel; emphasis on defect prevention, weld analysis, techniques, problem solving, and code informational pertinent to certification. Formerly WELD 824. Prereq. - WELD 123.

Additional Resources

Contact Information - http://catalog.northampton.edu/contact
Campus Locations - http://catalog.northampton.edu/locations

Mission, Vision & Values - http://catalog.northampton.edu/mission
Diversity Statement - http://catalog.northampton.edu/diversity
Online Learning - http://catalog.northampton.edu/OnlineLearning
Student Services:

- **Housing** - http://catalog.northampton.edu/housing
- **Counseling & Support** - http://catalog.northampton.edu/counseling
- **Career Services** - http://catalog.northampton.edu/CareerServices
- **Academic Advising** - http://catalog.northampton.edu/advising
- **Library** - http://catalog.northampton.edu/library
- **Learning Center** - http://catalog.northampton.edu/LearningCenter
- **Service Learning** - http://catalog.northampton.edu/ServiceLearning
- **Smoking Policy** - http://catalog.northampton.edu/smoking
- **Child Care** - http://catalog.northampton.edu/ChildCare
- **Disability Services** - http://catalog.northampton.edu/DisabilityServices
- **Veteran Benefits** - http://catalog.northampton.edu/veterans
- **Health & Wellness Center** - http://catalog.northampton.edu/health
- **Clubs & Activities** - http://catalog.northampton.edu/activities
- **Athletics** - http://nccspartans.com/
- **Community Education** - http://catalog.northampton.edu/community

Academic Calendars - http://catalog.northampton.edu/AcademicCalendar

Faculty Directory - http://catalog.northampton.edu/FacultyDirectory

Staff Directory - http://catalog.northampton.edu/StaffDirectory
Board of Trustees members - http://catalog.northampton.edu/trustees
Foundation Board members - http://catalog.northampton.edu/foundation

Campus Maps - http://catalog.northampton.edu/maps

Enrollment Application - http://catalog.northampton.edu/apply