

2015-2016 SUNY Poly Graduate Catalog

Table Of Contents

President's Message	5
About SUNY Polytechnic Institute	6
Admissions	8
Academic Requirements and Policies	20
Accreditation	21
Academic Standards	22
Degree Requirements	24
Code of Academic Conduct	25
Graduate Standing	26
Graduate Course Requirements	28
Residency Requirements	31
Requirements for Graduation	32
Time Limit on Completing Degree Requirements	33
Transfer of Graduate Credit	34
Dual Master's Degrees	35
Exceptions to Academic Policies	36
Transcript Request Policy	37
Certifying Official	38
Regional Educational Consortium	39
Academic Programs – HEGIS Code	40
Student Services	41
Athletics and Recreation	42
Career Services	43
Counseling Center	44
Dining Service	45
Health and Wellness Center	46
Services for Students with Disabilities	49
Services for International Students	50
Library	51
Teaching and Learning Support	52
Learning Center	53
Computing and Media Services	54
New Student Orientation	55
Residential Life and Housing	56
Residential Living Options	57
Personal Safety and Security	58
Student Activities and Student Government	59
Performing Arts/Cultural Interests	60
Financial Aid	61
Miscellaneous Programs	62
Estimated Cost of Attendance - Utica Campus	63
Applying for Financial Aid	65

Repayment of Financial Aid	67
Students' Rights and Responsibilities	68
Academic Requirements for Financial Aid Eligibility	70
International Student Financial Aid	73
Federal Financial Aid Programs	74
New York State Financial Aid Programs	76
More Information	79
Tuition, Fees, Refunds and Billing	80
Graduate Tuition	81
Residency	82
Mandatory Comprehensive Student Fee	83
Other Fees & Charges	84
Medical Insurance	85
Parking Fees	87
Combined Room and Board Rates 2015-2016	88
Refund Policy	89
How Receipt of Federal Title IV Funds Affects Student Refunds	91
Billing Tuition Payment	93
Financial Aid Deferrals	94
Other Third Party Deferrals	95
FERPA (Family Educational Rights and Privacy Act of 1974)	96
Required Disclosures	97
General Information	98
Physical Plant	99
Parking	101
SUNY Poly Identification Card	102
University Police	103
College Association at Utica/Rome, Inc	104
Governance	105
SUNY Poly Foundation	106
Release of Student Information and Photographs	107
Student Rights and Responsibilities	108
Student Records	109
Affirmative Action/Equal Opportunity Policy	110
Servicemembers Opportunity Colleges	111
SUNYIT Smoking Policy	112
Accountancy (MS)	113
Computer and Information Science (MS)	116
Data Analysis (CAS)	120
Information Design and Technology (MS)	121
Nanoscale Engineering	124
Nanoscale Science	131
Network and Computer Security (MS)	138
Nursing - Master of Science and Certificate for Advanced Study	141
MS and CAS in Family Nurse Practitioner	145

MS and CAS in Nursing Education	148
Technology Management (MBA)	151
Telecommunications (MS)	155
Courses	158
State University of New York / SUNY Board of Trustees	207

President's Message

<http://sunypoly.edu/apps/catalog/grad/2015-2016/>

Welcome to SUNY Poly!

SUNY Polytechnic Institute is New York's globally recognized, comprehensive educational ecosystem and a dynamic and proud member of the largest comprehensive university system in the country, the State University of New York.

Formed from the merger of SUNY Institute of Technology and the SUNY College of Nanoscale Science and Engineering, SUNY Poly is committed to scholarly excellence and high quality education. Our Albany campus offers undergraduate and graduate degrees in the emerging disciplines of nanoscience and nanoengineering, as well as cutting-edge nanobioscience and nanoeconomics programs. Our Utica/Rome campus offers a unique high-tech learning environment, providing degree programs in technology, including engineering, cybersecurity, computer science, and engineering disciplines; professional studies, including business, communication, and nursing; and arts and sciences, with degrees and course offerings in natural sciences, mathematics, humanities, and social sciences. Thriving athletic, recreational, and cultural programs, events, and activities complement SUNY Poly's academic experience.

As one of the world's most advanced, university-driven research enterprises, SUNY Poly boasts more than \$20 billion in high-tech investments, over 300 corporate partners and multiple technology and innovation hubs that span upstate New York, providing limitless opportunities for students.

Please refer to this graduate catalog frequently as it is both a valuable resource and a useful guide. On behalf of the faculty and staff, I extend best wishes for your success at SUNY Poly.

Sincerely,

Alain E. Kaloyeros, Ph.D.

*Founding President and Chief Executive Officer
SUNY Polytechnic Institute*

The content of this catalog is accurate as of October, 1, 2015. It is subject to change.

About SUNY Polytechnic Institute

<http://sunypoly.edu/apps/catalog/grad/2015-2016/about-sunypoly/>

SUNY Polytechnic Institute (SUNY Poly) is New York's globally recognized, high-tech educational ecosystem, formed from the merger of the SUNY College of Nanoscale Science and Engineering and SUNY Institute of Technology. SUNY Poly offers undergraduate and graduate degrees in the emerging disciplines of nanoscience and nanoengineering, as well as cutting-edge nanobioscience and nanoeconomics programs at its Albany campus, and degrees in technology, professional studies, and the arts and sciences at its Utica/Rome campus. As the world's most advanced, university-driven research enterprise, SUNY Poly boasts more than \$20 billion in high-tech investments, over 300 corporate partners, and maintains a statewide footprint. The 1.3 million-square-foot Albany NanoTech megaplex is home to more than 3,500 scientists, researchers, engineers, students, faculty, and staff, in addition to Tech Valley High School. The Utica/Rome campus offers a unique high-tech learning environment, providing academic programs in technology, including engineering, cybersecurity, computer science, and the engineering technologies; professional studies, including business, communication, and nursing; and arts and sciences, with degrees and course offerings in natural sciences, mathematics, humanities, and social sciences. Thriving athletic, recreational, and cultural programs, events, and activities complement the campus experience. SUNY Poly operates the Smart Cities Technology Innovation Center (SCiTI) at Kiernan Plaza in Albany, the Solar Energy Development Center in Halfmoon, CNSE's Central New York Hub for Emerging Nano Industries in Syracuse, the Photovoltaic Manufacturing and Technology Development Facility in Rochester, and the Smart System Technology and Commercialization Center (STC) in Canandaigua. SUNY Poly founded and manages the Computer Chip Commercialization Center (Quad-C) on its Utica campus and also manages the \$500 million New York Power Electronics Manufacturing Consortium, with nodes in Albany and Rochester, as well as the Buffalo High-Tech Manufacturing Innovation Hub at RiverBend, Buffalo Information Technologies Innovation and Commercialization Hub, and Buffalo Medical Innovation and Commercialization Hub. For information visit www.sunycnse.com and www.sunypoly.edu.

Mission

The SUNY Polytechnic Institute provides a vibrant, creative, and stimulating environment for innovation, education, and outreach that prepares our students to apply basic and applied knowledge to challenges, complexities and opportunities of a modern technological society. SUNY Poly provides an affordable range of undergraduate and graduate educational and research programs of the highest quality. Students receive a well-rounded education preparing them to be future leaders in a dynamic and diverse world by demonstrating the interconnectedness of knowledge and cultures and emphasizing the importance of continuous learning.

SUNY Poly values and encourages academic and intellectual achievement of the highest quality, broad access to persons motivated to pursue college preparation and experience, the breadth and depth provided by a sound and comprehensive liberal arts education and the technical competencies inherent to the applied disciplines. SUNY Poly is committed to the integration of these elements in a coherent program of higher learning. Serving as a leader for innovation and education in the interdisciplinary traditional and emerging disciplines of science, engineering, and technology, SUNY Poly strives to provide a

challenging, culturally diverse, and supportive educational environment that fosters and encourages active student participation in residential life and student organizations, athletics and recreation, and cultural and social events.

Utica, Albany and the Mohawk Valley

Located at the western end of the Mohawk Valley, Utica is the natural gateway to the beautiful Adirondack Mountains and scenic Thousand Islands. Albany, the capital of the State of New York, lies at the eastern terminus of the Valley on the Hudson River. Utica and Albany are regional transportation hubs; visitors can arrive by air (at Hancock International Airport in Syracuse), train or bus (Amtrak and Greyhound service), or car (the New York State Thruway or state routes 5, 8, 12).

The region is steeped in history—from the American Revolution through the Industrial Revolution—and is enriched by both cultural diversity and support for the performing and decorative arts. Utica is home to the internationally recognized Munson-Williams-Proctor Arts Institute, the Utica Symphony Orchestra, Broadway Theater League, the Stanley Performing Arts Center, the Utica Zoo, and a municipal ski facility. Albany boasts the Institute of History and Art, the New York State Museum, the Capitol Repertory Theatre, and the Palace Performing Arts Center. Albany and Utica were important ports along the Erie Canal which linked the Great Lakes with the Atlantic Ocean.

Admissions

<http://sunypoly.edu/apps/catalog/grad/2015-2016/admission/>

Applying for Admission & Application Deadlines

Applying for Admission

To apply for admission, submit the online [Application for Graduate Admission](#), transcripts from colleges previously attended, and all required [application materials](#) to:

*SUNY Polytechnic Institute
Graduate Admissions Office
100 Seymour Road
Utica, NY 13502*

Questions? contact the Graduate Admissions Office at (315) 792-7347 or graduate@sunyit.edu.

Application Deadlines

Fall Admission:

- July 1 – for international applicants requiring a visa
- July 15 – for domestic applicants

Spring Admission:

- November 1 – for international applicants requiring a visa
- December 1 – for domestic applicants

Notification of admission decisions begins early February for fall enrollment and early October for spring enrollment. Decisions continue on a rolling basis until the deadline or until the class is full. SUNY Poly reserves the right to close admission at any time prior to the application deadline.

Admission Guidelines & Application Materials by Program

Accountancy (MS)

Admission Guidelines

All applicants to the MS Accountancy program must possess a baccalaureate degree from an accredited university or college. Applicants without a baccalaureate degree in accounting will be required to complete pre-requisite undergraduate coursework in accounting, business law, statistics, economics, general business and computer science to prepare for the graduate level courses.

The Department of Business Management follows the AACSB (Association to Advance Collegiate Schools of Business) recommended admission guidelines:

A total of 1,000 points based on 200 x undergraduate GPA + GMAT Score. The minimum GMAT score required for admission consideration is 400.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Official GMAT score report *
- One academic or professional [Reference Report Form](#)
- Résumé

*A GRE score can be submitted in lieu of a GMAT score.

Computer and Information Science (MS)

Admission Guidelines

All applicants to the MS Computer and Information Science program must possess a baccalaureate degree with a major in computer science or information systems from an accredited university or college. In addition, a background in mathematics including calculus, discrete mathematics and statistics/probability is required. Applicants must generally have an average of B or better (a GPA of 3.0 on a 4.0 point scale).

A GRE General Test score is generally required for consideration. For international applicants requiring the TOEFL or IELTS, the minimum GRE score requirement for admissions consideration is a 153 on the quantitative section and a 140 on the verbal section of the exam.

Applicants not meeting the above admission criteria will be considered on an individual basis.

Applicants without a CS or IS degree may be admitted *conditionally* but must demonstrate proficiency in the following subject areas: computer organization (machine structures), data structures, object-oriented programming, discrete math/discrete structures, calculus and statistics. This can be achieved in one of two ways:

1. Submit undergraduate transcripts along with the SUNY Poly [Application for Graduate Admission](#) showing a B grade or higher in each subject area.
2. Address the deficiencies by completing the appropriate designated bridge course (CS 500, 502,

503, 505) with a B grade or higher within the first 16 credit hours of SUNY Poly graduate work. Bridge courses are intended to provide students with fundamental knowledge in computer science as appropriate and serve to prepare students for advanced coursework. *Bridge courses do not count toward the M.S. degree requirements.*

Bridge Courses

- CS 500 Discrete Structures
- CS 502 Machine Structures
- CS 503 Data Structures
- CS 505 Object-Oriented Programming

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Official GRE score report *
- One academic or professional [Reference Report Form](#)
- Résumé

* *Applicants with a 3.0+ GPA may request a GRE waiver based on strong undergraduate academic performance and/or relevant professional experience.*

Data Analysis (CAS)

Admission Guidelines

All applicants to the CAS Data Analysis program must possess a baccalaureate degree from an accredited university or college with an average of B or better (a GPA of 3.0 on a 4.0 scale). In addition, a background in mathematics including calculus I, II, III, and linear algebra/matrix methods is required.

Applicants not meeting the above admission criteria will be considered on an individual basis.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Résumé

Information Design and Technology (MS)

Admission Guidelines

All applicants to the MS Information Design and Technology program must possess a baccalaureate degree from an accredited university or college with an average of B or better (a GPA of 3.0 on a 4.0

point scale). Lower GPAs will be considered if the student has a strong portfolio, related experience or does well as a non-matriculated student.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Two academic or professional [Reference Report Forms](#)*
- Writing samples or a digital portfolio of design work. *Examples include: research paper, white paper, article, technical writing piece, graphic design work or web design work.* All items must be submitted in PDF format or as web links to graduate@sunyit.edu.
- [Educational Objective Statement](#)
- Résumé

*A non-matriculated student who takes an IDT course and attains a 3.5 GPA or higher may not need to submit the writing samples/portfolio or letters of reference when applying to enter the program.

Nanoscale Engineering (MS) & Nanoscale Science (MS)

Admission Guidelines

All applicants to the MS Nanoscale Engineering or MS Nanoscale Science programs must possess a baccalaureate degree or equivalent with a major in the physical, chemical, biological, or computer sciences, mathematics, or engineering from an accredited university or college. A minimum GPA of 3.0 (out of a maximum of 4.0) is strongly recommended.

Submission of a GRE General Test score is highly recommended. Because CNSE evaluates all elements of an individual's application, minimum required scores are not identified.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Official GRE score report (*strongly recommended*)
- Three academic or professional [Reference Report Forms](#)
- [CNSE Statement of Purpose Form](#)
- Résumé

Network and Computer Security (MS)

Admission Guidelines

All applicants to the MS Network and Computer Security program must possess a baccalaureate degree

with a major in network and computer security, computer science, computer information systems, electrical engineering, or a related field from an accredited university or college. In addition, coursework or a demonstrated proficiency in each of the following areas is required: computing fundamentals, Linux programming, computer organization, networking of information systems, discrete math, calculus, and statistics. Applicants must generally have an average of B or better (a GPA of 3.0 on a 4.0 scale).

A GRE General Test score is generally required for consideration. For international applicants requiring the TOEFL or IELTS, the minimum GRE score requirement for admissions consideration is a 153 on the quantitative section and a 140 on the verbal section of the exam.

Applicants not meeting the above admission criteria will be considered on an individual basis.

Applicants with deficiencies in any area may be required to take appropriate pre-requisite coursework beyond the 33 graduate credit hours required for the MS program. Required pre-requisite coursework will be identified at the time of admission and will be built into the student's plan of study.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Official GRE score report *
- One academic or professional [Reference Report Form](#)
- Résumé

** Applicants with a 3.0+ GPA may request a GRE waiver based on strong undergraduate academic performance and/or relevant professional experience.*

Nursing (MS & CAS)

Family Nurse Practitioner & Nursing Education

Admission Guidelines

All applicants to the MS Nursing program must possess a baccalaureate degree with a major in nursing from an NLNAC or CCNE accredited program with a minimum 3.0 grade point average (on a 4.0 scale).

Applicants must possess a current unrestricted, unencumbered license as a Registered Professional Nurse (RN) in New York State. *(The applicant is required to report all licenses/registrations in all jurisdictions and/or states in which a license/registration is or has ever been held, including any registrations through occupational licensing boards or emergency medical services that the applicant holds or has ever held. This includes any active or inactive licenses/registrations that have been encumbered, disciplined, sanctioned or terminated at the time of application to the graduate program.)*

All applicants must demonstrate evidence of the equivalent of at least 2000 hours work experience as a RN, by the start of the first semester of study.

All applicants must demonstrate successful completion of an undergraduate course in basic statistics with a grade of C or better.

Family Nurse Practitioner Applicants only:

All applicants to the Masters of Science Nurse Practitioner programs must have completed an instructor observed lab/clinical based health assessment course with a grade of B or better, taken within 5 years of registering for NUR566/567 (*Applicants whose health assessment course is either unapproved or does not meet the lab/clinical component will be required to take SUNY Poly's undergraduate health assessment course (NUR 314) or graduate health assessment refresher course (NUR 514) in the summer prior to taking NUR 566/567. NUR 566/567 is taken in the first semester for all full-time students and taken in the third semester for all part-time students.*)

Nursing Education Applicants only:

Out-of-state applicants for the MS in Nursing Education program must possess a current unrestricted license as a Registered Professional Nurse in their respective state.

International applicants for The MS in Nursing Education program only:

* International applicants must possess the equivalent of a bachelor's degree in nursing. (*Foreign transcripts must be professionally translated and evaluated by a member of the [National Association of Credential Evaluations Service](#).*)

* International applicants must possess the equivalent of a current unrestricted license to practice as a Registered Professional Nurse in their respective country.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended reflecting completion of:
BS in Nursing (for MS applicants)
MS in Nursing (for CAS applicants)
Undergraduate statistics course (both MS and CAS applicants)
- Two academic or professional [Reference Report Forms](#)
- [Professional Experiences Form](#)
- [Employment Verification Form](#) (*This form must reflect your most recent 2000 hours of work experience; use separate forms for each employer needed to reach the total number of hours required.*)
- [Writing Sample](#) adhering to specific guidelines

Technology Management (MBA)

Admission Guidelines

All applicants to the MBA Technology Management program must possess a baccalaureate degree from

an accredited university or college.

The Department of Business Management follows the AACSB (Association to Advance Collegiate Schools of Business) recommended admissions guidelines:

A total of 1,000 points based on 200 x undergraduate GPA + GMAT Score. The minimum GMAT score required for admission consideration is 400.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Official GMAT score report *
- One academic or professional [Reference Report Form](#)
- Résumé

* A GRE score can be submitted in lieu of a GMAT score

Telecommunications (MS)

Admission Guidelines

All applicants to the MS Telecommunications program must possess a baccalaureate degree with a major in telecommunications, engineering, engineering technology, computer science, or a related area from an accredited college or university. In addition, coursework or a demonstrated proficiency in each of the following areas is required: computing fundamentals, Linux programming, networking of information systems, discrete math, calculus, and statistics. Applicants must generally have an average of B or better (a GPA of 3.0 on a 4.0 point scale).

A GRE General Test score is generally required for consideration. For international applicants requiring the TOEFL or IELTS, the minimum GRE score requirement for admissions consideration is a 153 on the quantitative section and a 140 on the verbal section of the exam.

Applicants not meeting the above criteria will be considered on an individual basis.

Applicants with deficiencies in any area may be required to take appropriate pre-requisite coursework beyond the 33 graduate credit hours required for the MS program. Required pre-requisite coursework will be identified at the time of admission and will be built into the student's plan of study.

Application Materials Checklist

- [Application for Graduate Admission](#)
- \$60 application fee
- Official transcripts from colleges previously attended
- Official GRE score report*

- One academic or professional [Reference Report Form](#)
- Résumé

** Applicants with a 3.0+ GPA may request a GRE waiver based on strong undergraduate academic performance and/or relevant professional experience.*

International Student Admission

In addition to the standard admission requirements pertaining to graduate study, international applicants must also submit the following materials for admission consideration:

Transcript Evaluation: International applicants may be required to have their transcripts evaluated by an approved credential evaluator to determine the credit equivalencies of previously completed coursework outside of the United States. The [National Association of Credential Evaluation Services](#) has an approved list of credential evaluators on their website.

Financial Documents: International applicants must submit the SUNY Poly [ESA-4](#) document along with a certified bank statement or affidavit of support. Please contact the International Admissions Office for the required minimum level of financial support that is required at the time of application.

Proof of English Proficiency: International applicants must demonstrate minimum levels of English proficiency through the Test of English as a Foreign Language (TOEFL) or the International English Language Testing System (IELTS) as follows:

Minimum Acceptable Scores – Utica Site Programs

TOEFL: 550 for the paper-based test, 214 for the computer based test and 79 for the Internet based test.
IELTS: overall band score of 6.5.

Minimum Acceptable Scores – Albany Site Programs

TOEFL: 600 for the paper-based test, 250 for the computer based test and 100 for the Internet based test.
IELTS: overall band score of 7.5.

International student applications should reflect the student's name exactly as it appears on their passport. SUNY Polytechnic Institute is authorized under Federal law to enroll non-immigrant students.

Cancellation Policy for English Proficiency Exams

For Applicants

If SUNY Poly receives notification of an invalid English proficiency score for an international applicant, the applicant should submit a new, valid, official test score. Any application with a canceled score will be considered incomplete until SUNY Poly is in receipt of a new, valid, official test score or other acceptable proof of English proficiency.

For Accepted Students

If SUNY Poly receives notification of an invalid English proficiency score for an accepted applicant, the

offer of admission will be withdrawn. To gain admission, the applicant should submit a new, valid, official test score or other acceptable proof of English proficiency meeting SUNY Poly's minimum requirements by the prescribed application deadlines.

For Enrolled Students

If SUNY Poly receives notification of an invalid English proficiency score for an international student who has already arrived in the United States or is currently enrolled, his/her records will be reviewed and it will be determined if the student should submit a new test score, if a new test score should be waived, or if the student should be removed from the program.

Standardized Examinations

Graduate Record Examination (GRE)

Applicants to the MS programs in computer science, network and computer security, and telecommunications are required to submit scores from the Graduate Record Examination (GRE) General Test. Applicants to the MS programs in nanoscale science and nanoscale engineering are strongly encouraged to submit GRE General Test scores. The GRE is administered through the [Educational Testing Service](#) (ETS).

The aptitude test is a 3½-hour examination which measures general scholastic ability at the graduate level and yields separate scores for verbal reasoning, quantitative reasoning, and analytical writing abilities. The GRE is a computer-based exam offered at testing centers around the world. Score reports take approximately four weeks to reach the SUNY Poly Graduate Admissions Office. Students should register for the exam in time for the scores to reach campus by the appropriate application deadline dates. The SUNY Poly school code for GRE score reporting is 2896.

Graduate Management Admission Test (GMAT)

Applicants to the graduate programs in accountancy (MS) and technology management (MBA) are required to submit scores from the Graduate Management Admission Test (GMAT). The GMAT is administered through the [Graduate Management Admission Council](#) (GMAC).

The GMAT is a four-hour aptitude test designed to measure certain academic skills important in the study of management at the graduate level. This test does not measure judgment or knowledge in any specific subject matter, and those who take it are neither required nor expected to have undergraduate preparation in business subjects. The GMAT is a computer-based exam offered at testing centers around the world. Score reports take approximately two weeks to reach the SUNY Poly Graduate Admissions Office. Students should register for the exam in time for the scores to reach campus by the appropriate application deadline dates. The SUNY Poly school codes for score reporting are:

MBA: K6R-D6-26

MS Accountancy: K6R-D6-24

Full-time/Part-time Graduate Status

A full-time graduate student is one who has registered for a minimum of 9 credit hours per semester. The maximum full-time student load is 15 graduate credit hours per semester.

A part-time graduate student is one who is registered for less than 9 credit hours per semester.

Tuition Deposits

Domestic Students

Fall Admission

Full-time domestic graduate students accepted for fall admission must submit a \$50 tuition deposit along with the *Graduate Enrollment Confirmation Form* by May 1. For students accepted after April 1, the deposit is required within 30 days of acceptance. A refund of the tuition deposit will be granted upon written request until May 1 or for students accepted after May 1, within 30 days of the date of deposit.

Part-time domestic graduate students are not required to submit a monetary deposit but must return the *Graduate Enrollment Confirmation Form* according to the same schedule as full-time students for fall admission.

Spring Admission

Full-time domestic graduate students accepted for spring admission must submit a \$50 tuition deposit along with the *Graduate Enrollment Confirmation Form* within 30 days of acceptance. A refund of the tuition deposit will be granted upon written request within 30 days of the date of deposit.

Part-time domestic graduate students are not required to submit a monetary deposit but must return the *Graduate Enrollment Confirmation Form* according to the same schedule as full-time students for spring admission.

International Students

Fall & Spring Admission

International graduate students accepted for admission must submit a \$300 tuition deposit along with the *Graduate Enrollment Confirmation Form* within 30 days of acceptance or by the deposit date noted in the acceptance letter. A refund of the tuition deposit will be granted upon written request within 30 days of the date of deposit (or later with proof of a visa denial).

Domestic & International Students: Upon course registration, the deposit amount is subtracted from tuition due. Under no circumstances will a deposit be refunded after classes begin.

Housing Deposits

Students who wish to request a room in the residence halls are required to pay a \$150 housing deposit (due with their *Graduate Enrollment Confirmation Form*). On-campus housing is limited, early deposit is strongly recommended. Requests for housing deposit refunds must be made in writing to the Residential Life & Housing Office, and are subject to terms and conditions of the Room & Board License. A refund of the housing deposit will be granted until May 1, or for students admitted after May 1, within 30 days of the date of deposit. Only full-time students may reserve a room in the residence halls.

Change of Program

If a student currently enrolled in a specific degree program desires to change from one program to another, a [Change of Program Form](#) must be submitted to the Registrar's Office.

Readmission

Readmission is required if a student was previously matriculated but has been out for at least three consecutive semesters of study at SUNY Poly. It is also required for students who withdraw from all courses and then wish to enroll for the following semester.

Students seeking readmission to SUNY Poly must file a [Readmission Application for Graduate Study](#) with the Registrar's Office along with a \$30 readmission fee.

Readmission Application Deadlines

Fall: August 1

Spring: December 15

Summer: May 1

Non-Degree Study

Students may apply to take graduate courses without formal admission to the degree program, on a space-available basis by filing the [Non-Matriculated Application](#) with the Office of Continuing and Professional Education. Generally, a maximum of six credit hours is allowed for non-degree study. In some instances students may choose to continue taking coursework above the six hour total if permitted, but may not take more than 12 hours before matriculating into a degree program. The maximum number of non-matriculated credits permitted varies from program to program. Graduate coursework taken while in non-degree status may be applicable to the degree program upon formal admission, **however, there is no guarantee of credit applicability or admission by completing coursework in non-degree status.**

Students with Disabilities

SUNY Poly does not discriminate against qualified individuals with disabilities in admissions or in access to programs. See [Services for Students with Disabilities](#) section to learn more about accommodations.

Academic Requirements and Policies

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/>

Information on advisement, progression, retention, grading policies, course load, and procedures for processes such as add/drop, change of graduate status, advancement to candidacy, etc., can be obtained from the appropriate academic unit.

- [Accreditation](#)
 - [Academic Standards](#)
 - [Degree Requirements](#)
 - [Code of Academic Conduct](#)
 - [Graduate Standing](#)
 - [Graduate Course Requirements](#)
 - [Residency Requirements](#)
 - [Requirements for Graduation](#)
 - [Time Limit on Completing Degree Requirements](#)
 - [Transfer of Graduate Credit](#)
 - [Dual Master's Degrees](#)
 - [Exceptions to Academic Policies](#)
 - [Transcript Request Policy](#)
 - [Certifying Official](#)
 - [Regional Educational Consortium](#)
 - [Academic Programs – HEGIS Code](#)
-

Accreditation

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/accreditation/>

SUNY Polytechnic Institute is accredited by the Board of Regents of the State of New York. Its academic programs are registered by the State Education Department and are accredited by the Middle States Association of Colleges and Schools.

Specialized Academic Program Accreditations include:

Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM)
The programs in health information management are accredited by the Commission on Accreditation for Health Informatics and Information Management Education (CAHIIM).

Commission on Collegiate Nursing Education (CCNE)

The undergraduate and graduate nursing programs are registered by the New York State Education Department and accredited by the Commission on Collegiate Nursing Education. The CCNE is recognized by the U.S. Department of Education as an accrediting agency for nursing programs at both the baccalaureate and graduate levels. For more information, see: www.aacn.nche.edu/accreditation/

Technology Accreditation Commission of ABET (ETAC/ABET)

The following programs are accredited by ETAC/ABET: Civil Engineering Technology, Computer Engineering Technology, Electrical Engineering Technology, and Mechanical Engineering Technology.

The Association to Advance Collegiate Schools of Business (AACSB)

The Association to Advance Collegiate Schools of Business (AACSB) accredits the SUNY Polytechnic Institute's undergraduate degree programs in accounting and business as well as the following graduate programs: MBA in technology management and MS in accountancy www.aacsb.edu

SUNY Poly's programs in Civil Engineering, Electrical and Computer Engineering, and Mechanical Engineering are currently seeking ABET accreditation. Until these programs are accredited, graduates are not eligible to receive maximum education/experience credits as a "professional engineering program" towards New York State licensure in professional engineering. ABET does not allow programs to apply for accreditation until they have graduated at least one student. ABET does allow the accreditation to cover students who graduated in the year before the accreditation is granted.

See www.abet.org/new_program.shtml for more information about the ABET accreditation process.

Academic Standards

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/academic-standards/>

Each matriculated graduate student must maintain an overall academic grade point average of 3.0 (B grade). A student may, through the advisor, submit a petition to the department to repeat a maximum of two (2) courses in which a C grade or less was received. No more than two (2) C grades will count towards a graduate degree.

If a student does not receive a passing grade in a course which is a prerequisite for another course in the program, the student may not proceed to take other course(s) until the prerequisite has been met.

Grading System

Letter grades are used for the final rating in all courses. The grades and an interpretation of the quality of work follow:

A	Excellent	4.0 (Quality Point Per Credit Hour)
A-		3.67 (Quality Point Per Credit Hour)
B+		3.33 (Quality Point Per Credit Hour)
B	Good	3.0 (Quality Point Per Credit Hour)
B-		2.67 (Quality Point Per Credit Hour)
C+		2.33 (Quality Point Per Credit Hour)
C	Passing	2.0 (Quality Point Per Credit Hour)
F	Failing	0.0 (Quality Point Per Credit Hour)
I	Incomplete	This grade is granted by the instructor when a student has failed to complete course requirements on schedule. An incomplete grade must be removed by mid-semester of the following regular semester unless the student has applied in writing and has received an extension for a specified time. Approval of requests for renewal will be at the option of the faculty member and college dean. Any incomplete grade not removed within the stated time will become an F grade at the next semester midpoint.

IP	In Progress Passing	This grade is assigned at the discretion of the instructor when the student is making satisfactory progress in course requirements that one ordinarily would be unable to complete by the end of a semester, ie., practicums, internships, research, etc. An IP grade that is not removed by the end of the following semester will be recorded as an F grade.
S	Satisfactory	Upon receipt of a Satisfactory grade the student will receive credit for the registered number of semester hours.
U	Unsatisfactory	With an Unsatisfactory grade, the student must register again for the requisite number of semester hours in order to receive credit toward degree requirements.
W	Withdraw	Students who find it necessary to withdraw from a course must notify the Registrar's Office within the approved time frame to receive a W for the course.

Degree Requirements

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/degree-requirements/>

Each graduate program is autonomous in establishing specific degree requirements. Individual program policies and procedures may be reviewed in the individual program descriptions.

Code of Academic Conduct

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/code-of-conduct/>

Refer to the current [Student Handbook](#) for SUNY Poly's Code of Academic Conduct.

Graduate Standing

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/graduate-standing/>

Graduate Standing

The following definitions, procedures and regulations apply to __

Matriculation: A matriculated student is one who has followed the standard SUNY admission policies for entrance to SUNY Polytechnic and is formally enrolled in an established program leading to a degree at SUNY Poly. A student who discontinues enrollment for more than three semesters will lose status as a matriculated student and must apply for readmission.

Full-Time/Part-Time Graduate Status: A full-time graduate student is one who has registered for a minimum of 9 credit hours per semester. The maximum student load is considered 15 graduate credit hours per semester*. A part-time graduate student is one who is registered for less than 9 credit hours per semester.

** Academic departments may have individual policies that supersede the 15 credit maximum student load.*

Academic Warning: At the completion of each semester, each student's academic record is routinely reviewed, and if the cumulative grade point average is below 3.00, the student is placed on academic warning for the following semester.

Academic Dismissal: At the completion of each semester, the academic record of each student on academic warning will be reviewed for academic dismissal reasons. If the semester grade point average of a student on academic warning is below 3.00 after nine (9) credit hours, the student will be academically dismissed. No student will be academically dismissed without first being on academic warning.

Readmission Following Academic Dismissal: Students dismissed for academic deficiencies who wish to apply for readmission to SUNY Poly must submit their written application to their college dean. The dean will evaluate the application and make a determination as to readmission. Readmission may be delayed until one full semester has elapsed and will generally be the case if a student is applying for readmission a second time. Establishing matriculation in a degree program is governed by the regulations for matriculation in that program at the time of readmission.

Continuous Registration: All graduate students must maintain continuous registration, equal to or greater than one credit while doing their final thesis, project, or capstone experience. Students can do this by registering for CMT 600 - Continuous Registration. (Computer Science students completing a thesis will register for CS 599 and Telecommunications students completing a thesis will register for TEL 599). This may be taken up to six semesters at which time it is expected that all program requirements will have been met.

Voluntary Withdrawal: To retain good academic standing, students who withdraw voluntarily must

officially withdraw through the Registrar's Office. Students who do not officially withdraw may receive failing grades in any courses not completed. The student who withdraws voluntarily without being granted a leave of absence loses matriculation status. Should the student desire to return at a later time, the student must file a [Readmission Application for Graduate Study](#) with the Registrar's Office and be approved for readmission. (Admission/graduation requirements in effect at the time of re-entry will apply.)

Leave of Absence: Leave of absence for a specified period of time may be granted to a student not subject to academic dismissal. The student applying for a leave of absence must give a definite date for re-registration at SUNY Poly. A student not returning for re-registration within the specified time will be classified as an official withdrawal. Application for leave of absence must be made to the dean of the college in which the student is enrolled.

Graduate Course Requirements

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/course-requirements/>

Class Attendance: Each student is expected to attend class regularly in order to achieve the maximum benefit from educational activities. The student is responsible for all classwork missed, regardless of the reason(s) for absence. Each instructor sets the standards of performance to be met by each student for each course in keeping with the standards and policies of SUNY and the college, or academic unit. Expected performance is defined at the beginning of the course. The student's performance in relation to the established standards shall determine the student's grade in a course.

Time Requirement for Courses: It is the policy of SUNY Poly for all courses offered to conform to the New York State Education Regulations requiring at least 15 hours of instruction* and at least 30 hours of supplementary assignments for each semester credit hour awarded in lecture/discussion courses. For example, a three credit course requires at least three hours of instruction plus supplementary assignments requiring at least six additional hours each week for the 15-week semester.

Courses involving laboratories, independent studies, tutorials, or practicum experiences are required to have some combination of instruction, laboratory work, and/or supplementary assignments equaling at least 45 hours for each credit awarded.

* *Inclusive of examinations. An hour of instruction equates to 50 minutes of actual class time.*

Substitution of Courses: The academic unit chairperson may allow substitutions for a particular credit course required in a program or curriculum. The student's adviser must formally recommend the substitution as part of the academic petition.

Independent Study: Independent study projects are designed to provide matriculated students with the opportunity for a learning experience in a specific area of knowledge not provided by regular courses at SUNY Poly. They are not to be used in lieu of courses listed in the general catalog, nor are they to be considered guaranteed offerings; they are available to the student as facilities, faculty, time, and interest permit. Within these guidelines each academic department defines its concept of independent study.

Responsibility for planning, conducting, and reporting on an independent study project rests with the student. However, students are to seek the assistance of a faculty member in developing proposals. The student must submit a proposal to the faculty member specifying educational goals, proposed methods of evaluation, duration of the project, and the number of credit hours. The completed proposal is reviewed by the chairperson of the subject area. *Registration for independent study can only occur after the proposal has been approved by that chairperson.* Independent study courses cannot be added after the normal add date for the semester. A copy of the proposal must be filed with the registrar in order to be registered by the Registrar's Office. At the end of the study period, the faculty member will receive documentation of the results, assign an appropriate grade, and forward the grade with an abstract to the registrar.

Auditing: Students must complete a [Course Audit Registration Form](#) for a course to be taken for audit. The form must be signed by the instructor of the course and the chair of the academic unit within which the course is offered. Students taking courses for audit may submit the audit form beginning the first day of class and no later than the last day to add classes. Tuition and fees are not charged for audited courses, and there will be no notation of these courses on the college transcript. Note: Online and hybrid courses can not be audited.

Adding or Dropping a Course: A student may [add or drop a course, without academic record](#), by completing the appropriate forms available in the Registrar's Office and obtaining the required approvals (refer to the comprehensive academic calendar for appropriate dates). During the third through tenth week of the semester, any student dropping a course receives a "W" grade. After the tenth week of class, a letter grade A-F is assigned.

Section Changes: Change of section is accomplished by the use of an [Add/Drop Form](#).

Final Grade Reports: Students should carefully review their final grade reports that are available on Banner web at the conclusion of each semester. Errors should be immediately reported to the Registrar's Office. Students have one year from the end of any semester in which to request, in writing, a correction to their academic record, and must provide appropriate documentation to support the request.

Students Unable to Register or Attend Classes on Certain Days Because of Religious Beliefs. The SUNY policy on attendance in class states: No person shall be expelled from or be refused admission as a student to an institution of higher education for the reason that the student is unable, because of religious beliefs, to register or attend classes or to participate in any examination, study, or work requirements on a particular day or days.

Any student in an institution of higher education who is unable, because of religious beliefs, to attend classes on a particular day or days shall, because of such absence on the particular day or days, be excused from any examination or any study or work requirements.

It shall be the responsibility of the faculty and of the administrative officials of each institution of higher education to make available to each student who is absent from school, because of religious beliefs, an equivalent opportunity to make up any examination, study, or work requirements which the student may have missed because of such absence on any particular day or days. No fees of any kind shall be charged by the institution for making available to said student such equivalent opportunity.

If registration, classes, examinations, study, or work requirements or opportunity to register are held on Friday after four o'clock post meridian, or on Saturday, similar, or make-up classes, examinations, study, or work requirements shall be made available on other days, where it is possible and practicable to do so. No special fees shall be charged to the student for these classes, examinations, study, or work requirements held on other days.

In effectuating the provisions of this section, it shall be the duty of the faculty and of the administrative officials of each institution of higher education to exercise the fullest measure of good faith. No adverse or prejudicial effects shall result to students because of their availing themselves of the provisions of this section.

Any student who is aggrieved by the alleged failure of any faculty or administrative officials to comply in good faith with the provisions of this section, shall be entitled to maintain an action or proceeding in the supreme court of the county in which such institution of higher education is located for the enforcement of the student's rights under this section.

Residency Requirements

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/residency-requirements/>

Students in graduate degree programs must complete at least 27 semester hours of graduate credit in residence at SUNY Poly. It should be noted that bridge coursework required for the computer science program cannot be applied to this requirement.

Requirements for Graduation

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/graduation-requirements/>

While each student is assigned a faculty advisor and is given an opportunity to obtain additional counseling on personal and collegiate matters, final responsibility rests with the student to assure that all degree program requirements are satisfied for graduation as follows:

1. In order to be considered for graduation, students must submit a [Graduation Application](#) to the Registrar's Office by the preceding November 1 for May graduation, by April 1 for August graduation, or by June 1 for December graduation. The list of potential graduates is forwarded to each academic unit, and advisers and the registrar review each student file to determine if all requirements have been met. All students have approximately three weeks from the formal date of graduation to submit any paperwork required to clear them for graduation (specific deadline dates are posted each semester by the Registrar's Office). Students not meeting this deadline will be notified in writing that they have not graduated.
2. Satisfactory completion of program credit requirements with a minimum cumulative GPA of 3.0 for all coursework taken at SUNY Poly.
3. All specific program requirements must be met.
4. A 3.0 GPA in all courses in the major, as identified by the department.
5. No more than two "C" grades will count toward a graduate degree.>

There is a \$10.00 diploma cover fee which must be paid prior to graduation. All financial obligations must be cleared before the diploma is released.

Time Limit on Completing Degree Requirements

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/time-limit/>

Courses completed more than seven (7) years before the term in which the degree is awarded may not be used for credit toward the advanced degree. In the event that attendance has been interrupted due to extenuating circumstances, exceptions may be made by the academic unit with approval of the Provost.

Degree requirements are determined by the catalog under which the student is initially matriculated, and remain in force if the student maintains continuous matriculation. A student who discontinues enrollment for three consecutive semesters or more may [apply for readmission](#) and then fulfill the degree requirements in effect at that time.

Transfer of Graduate Credit

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/credit-transfer/>

Students seeking transfer credit at the time of admission must provide official transcripts to the Graduate Admissions Office at SUNY Poly. Only graduate courses with a grade of A, A-, B+, or B and completed less than seven years prior to matriculation are transferable. Transfer credit will not be included in the computation of a graduate student's grade point average at SUNY Poly. A maximum of six hours of graduate work may be accepted for transfer credit by SUNY Poly, with the exception of the majors in Family Nurse Practitioner (MS) and Technology Management (MBA) which accept up to 12 credits, and Nursing Education (MS) which accepts up to 9 credits.

If after being admitted to a degree program, a student wishes to take and transfer courses from another institution, he or she must submit the [Petition to take Courses at Another College](#) to his or her adviser. This petition requesting such approval must include institution name, catalog number, title, and description of each course being proposed for transfer credit and the equivalent course at SUNY Poly. Upon completion of the course, an official transcript must be sent to the Registrar's Office at SUNY Poly.

Dual Master's Degrees

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/dual-degrees/>

1. A student possessing a master's degree from another institution may earn a second master's degree from SUNY Poly by completing the specific degree requirements and the college residency requirement.
 2. A student may earn two master's degrees from SUNY Poly. The student must satisfy all degree requirements for each degree program. A student may use up to 9 credits from their first degree program, taken at SUNY Poly, to apply toward the second degree program (which also will apply toward the 27 hour per degree residency requirement). A minimum of 24 new credits are required for each 33 credit degree program. A minimum of 39 new credits are required for each 48 credit degree program. In programs with more than 9 credits of course overlap between degree requirements, all common courses will be counted toward fulfilling degree requirements but additional course work to reach the minimum new credits will be required. A student wishing to complete more than one master's degree may transfer a different set of courses from another institution for each degree.
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Exceptions to Academic Policies

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/exceptions-to-policies/>

Students seeking an exception to an academic policy may do so by filing an [Academic Petition](#) form with the chair of their academic unit.

Transcript Request Policy

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/transcript-request/>

SUNY Poly transcript requests must be made in writing to the Registrar's Office using the [Transcript Request Form](#) with the student's signature. Telephone and e-mail requests, without the signed form attached, cannot be legally honored. There is a \$5.00 processing charge for each copy of a transcript requested. All financial obligations to SUNY Poly must be cleared prior to the issuance of a transcript.

Certifying Official

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/certifying-official/>

The Registrar is designated as SUNY Poly's certifying official and performs the following certification functions: Veterans Educational Benefit Certification, verification of enrollment (i.e., insurance, employment, enrollment certification for NYS Higher Education, loan servicing centers and banks, etc.), and certification/verification of graduation.

Regional Educational Consortium

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/regional-educational-consortium/>

SUNY Poly is a member of a regional educational consortium that includes Empire State College (Utica location only), Herkimer County Community College, Hamilton College, Mohawk Valley Community College, SUNY College of Technology at Morrisville, and Utica College. Full-time matriculated students at any of the consortium partners are able to enroll in one course of up to four credits of eligible coursework per semester (fall and spring only) at partner campuses without incurring additional tuition charges.

Eligible courses must be applicable to the student's degree program and approved by the student's academic advisor, then certified by the Registrar. Courses are ineligible if SUNY Poly offers the same or equivalent course during the same semester. Registration in eligible courses is provided by the host campus on a space-available basis, determined by the host campus on or about the first day of classes.

When enrolled in a course at another campus, students are reminded that the course will follow the calendar and all academic and student conduct regulations of the host campus. While there is no additional tuition charge for courses taken under this program, students will be charged by the host campus for any fees (e.g., parking, technology, computer, student activity, etc.) normally assessed upon part-time students. In addition, SUNY Poly may impose an administrative fee.

Full details on this program, which may be modified from time to time, are available in the Office of the Registrar.

Academic Programs – HEGIS Code

<http://sunypoly.edu/apps/catalog/grad/2015-2016/academic-requirements-and-policies/hegis-code/>

Academic Programs – HEGIS Code

The Higher Education General Information System (HEGIS) Taxonomy is a nationally accepted classification scheme for assuring consistency in the curriculum content of courses leading to a degree within a given HEGIS discipline category. Thus, the concept of “information science” is the same for the person studying for a degree in computer and information science, classification number 0701, whether the degree is pursued at SUNY Poly or at another institution. Enrollment in other than the following registered, or otherwise approved, programs may jeopardize eligibility for certain student aid awards.

HEGIS	Classification	Degree
0502	Accountancy	M.S. Master of Science
0925	Advanced Technology	M.S. Master of Science
0701	Computer and Information Science	M.S. Master of Science
1703	Data Analysis	Advanced Certificate
1203.10	Family Nurse Practitioner	M.S. Master of Science
	Family Nurse Practitioner	Advanced Certificate
1203.10	Gerontological Nurse Practitioner	M.S. Master of Science
	Gerontological Nurse Practitioner	Advanced Certificate
0799	Network and Computer Security	M.S. Master of Science
1203.10	Nursing Education	M.S. Master of Science
	Nursing Education	Advanced Certificate
0799	Information Design and Technology	M.S. Master of Science
1203.10	Nursing Administration	M.S. Master of Science
1203.10	Adult Nurse Practitioner	M.S. Master of Science
	Adult Nurse Practitioner	Advanced Certificate
1203.12	Nursing Administration	Advanced Certificate
0599	Technology Management	M.B.A. Master of Business Administration
0799	Telecommunications	M.S. Master of Science
0915	Nanoscale Engineering	Ph.D., Doctor of Philosophy
	Nanoscale Sciences	Ph.D., Doctor of Philosophy
	Medicine and Nanoscale Engineering	Ph.D., Doctor of Philosophy
	Medicine and Nanoscale Sciences	Ph.D., Doctor of Philosophy

Student Services

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/>

- [Athletics and Recreation](#)
 - [Career Services](#)
 - [Counseling Center](#)
 - [Food Service](#)
 - [Health and Wellness Center](#)
 - [Services for Students with Disabilities](#)
 - [Services for International Students](#)
 - [Library](#)
 - [Teaching and Learning Support](#)
 - [Learning Center](#)
 - [Computing and Media Services](#)
 - [Residential Life and Housing](#)
 - [Residential Living Options](#)
 - [Personal Safety and Security](#)
 - [Student Activities and Student Government](#)
 - [Performing Arts/Cultural Interests](#)
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Athletics and Recreation

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/athletics-recreation/>

The intercollegiate sports and recreation program at the Utica site offers a variety of activities for the experienced student-athlete, the fitness enthusiast, the intramural participant and the avid sports fan. The Athletics and Recreation department encourages active participation from all students, faculty and staff at SUNY Poly.

Athletic Facilities

The Field House is equipped with a fitness center featuring a variety of treadmills, cross trainers, stair climbers and circuit training equipment and free weights, which can benefit the fitness goals of the SUNY Poly community. The gym, running track, basketball court, and racquetball court comprise the Campus Center indoor facilities; outside, facilities include the Roemer fitness trail, soccer, baseball and softball fields, and a golf practice area. The field house also features multiple court areas, a running track and an aerobics room and is adjacent to our lit turf field.

Intercollegiate Teams

Our intercollegiate sports program, a member of the NCAA III and the NEAC, includes competitive teams in men's baseball, men's and women's basketball, men's and women's cross country, men's and women's soccer, women's softball, men's and women's volleyball and men's and women's lacrosse.

Intramurals and Recreation, Fitness Classes

Our recreation staff will help you become involved in a myriad of single event or league intramural programs in a wide variety of sports and activities. We want you to become active and involved! A large number of weekly fitness classes are also scheduled for Zumba, Yoga, etc. The Wildcat Fitness Center is headquarters for information and sign-up.

For Credit Courses

Athletics offers 1-credit courses in fitness and recreation. Learn how to utilize the fitness center equipment and how to manage a personalized strength training or aerobic training program. Begin playing or hone your skills in recreational sports like golf and racquetball. Classes are offered each semester.

Club Sports

Students interested in competing less formally have the opportunity to participate in a variety of club sports. Skiing and snowboarding, bowling, indoor soccer, fencing, cricket, and mountain biking/running club are examples of activities the Student Association at SUNY Poly has sponsored in the past.

Become Involved

Visit with us and we'll get you involved! Athletics offices are located in the Field House. For more information, contact us at 315-792-7520 or refer to our website at www.sunypoly.edu.

Career Services

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/career-services/>

The Office of Career Services offers Albany and Utica site students a wide range of career planning services to include resume writing and interviewing workshops, mock interview sessions, job search and internship assistance, and individualized career counseling. Students are strongly encouraged to register with Career Services as soon as they are admitted to the college. Registering upon admission allows students to take full advantage of these services and to gain access to the comprehensive web-based student/employer database, College Central Network. Students who create an account receive targeted e-mails regarding internship and employment opportunities available throughout the academic year. Information is also available regarding graduate school admissions procedures and graduate school standardized testing through the Career Services Office.

Counseling Center

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/counseling-center/>

The Counseling Center, associated with the Health & Wellness Center, is located in Oriskany Hall, Suite B, at the Utica site. The Center is open during the academic year, Monday through Thursday, 9 a.m. to 6 p.m., and Fridays until 5 p.m. Appointments can be made by calling (315) 792-7172. All services are strictly confidential and are provided by a licensed mental health provider.

The Counseling Center supports and enhances the educational experience of SUNY Poly students, providing prevention, intervention and referral services for those addressing emotional and behavioral needs and issues. The Center is committed to assist SUNY Poly students by providing counseling services regarding personal and emotional concerns, relationship difficulties, college adjustment concerns, depression/anxiety issues, etc.

Questions regarding the Counseling Center can be directed to (315) 792-7172.

Dining Service

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/food-service/>

Campus dining service is provided in two locations at SUNY Poly (Utica Site). It is required that all resident students participate in the campus meal plan.

Meal plan participants are able to dine in the "all you can eat" Campus Center Café with unlimited seconds for a meal swipe. A nutritious menu is available with a variety of stations to choose from:

- **“Home”** Classic favorites that meet the spice of modern age! Tempting array of proteins, fresh vegetables while expertly prepared the way you want.
- **“Deli”** Enjoy our classic New York deli offerings with your choice of spreads and breads, featuring a local and seasonal flair.
- **“Green”** Hearty and Healthy. Treat yourself to a fresh, seasonally inspired soup and salad bar with toppings and much more.
- **“Brick”** Craving your favorite Italian foods? Try the traditional crust pizza, flatbreads, baked pastas, calzones and fresh bread.
- **“Fuse”** Enjoy Vegan and Vegetarian items prepared fresh daily.
- **“Sweet”** Fresh baked treats.

Operation hours are seven days a week, providing breakfast, lunch and dinner menu, with continuous service during the week. Weekends offer brunch and dinner.

The Student Center is a full service food court. Hours of operation are breakfast, lunch, dinner and late night Monday through Thursday; Friday hours are breakfast, lunch, and late night. Saturday and Sunday the Student Center is open for late night dining. The Student Center features a stone baked pizza area, create your own sub station, homemade soups, charbroiled grill area, made to order sauté station, fresh baked desserts, salads, Simply to Go items, beverages, and snacks.

Dining Services for residential students at Albany site are under development.

Health and Wellness Center

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/health-wellness-center/>

Health and Wellness Center

The Health and Wellness Center, located in Oriskany Hall, Suite B, at the Utica site, provides evaluation, treatment and prevention of health-related problems for full-time, part-time, undergraduate and graduate students. The Health and Wellness Center is staffed by a part-time physician, a nurse practitioner, registered nurses, a health educator and support personnel. It is open daily Monday through Thursday, 9 am to 6 pm, Friday until 5 pm.

The Health and Wellness Center and Counseling Center are supported through a mandatory health fee each semester. This fee provides each student comprehensive, confidential health-related services by appointment or walk-in basis at the Health and Wellness Center. This fee should not be confused with the mandatory medical insurance fee that covers off-campus health care services. Some services provided by the mandatory health fee include:

Clinical Services:

- Sick/Injury Care - medical evaluation, treatment & follow-up medical care
- Vaccinations - Influenza, etc.
- Women's and Men's Health - GYN examinations, birth control, STD testing, etc.
- Blood work/laboratory work - throat cultures, HIV, etc.
- Medications - prescription & over the counter
- Medical Equipment/Supplies/Other - crutches, band-aids, cough drops, etc.
- Referrals - to private practitioners, community agencies, etc.

Health Education:

- Free, confidential HIV testing & counseling
- Alcohol/substance abuse screening & counseling
- Current health-related educational literature/resources
- Appropriate health guidance with necessary referral
- Prevention focused programs
- Peer education programs
- Smoking cessation assistance & counseling

Student Health Requirements for Attending SUNY Poly:

All students are REQUIRED to provide the following health documents to the Health and Wellness Center before August 1 for fall admission and January 1 for spring. Student athletes and nursing students have more stringent health requirements. Please refer to those respective departments for details.

Immunizations - Mandatory for all students registered for six (6) or more credits. Non-compliant students will be de-registered pursuant to the directives of the law.

Measles, Mumps and Rubella (MMR) - NYS Health Law § 2165 requires all students taking on campus classes to provide documentation of immunity to MMR. Persons born prior to 1/1/57 are exempt.

Required documentation:

- **Measles:** Two dates of immunization given after 1967 AND on/or no more than 4 days prior to the first birthday
- **Mumps:** One date of immunization given on/or no more than 4 days prior to the first birthday
- **Rubella:** One date of immunization given on/or no more than 4 days prior to the first birthday

OR

- **Titers:** Date AND positive results of the measles titer, and/or mumps titer and/or rubella titer

Meningococcal Meningitis - NYS Health Law § 2167 requires all on or off campus students provide the following documentation:

- One date of the meningococcal immunization given within the past 10 years

OR

- Completion of the Meningococcal Information Response Form indicating acknowledgement of meningococcal disease risks and refusal of the meningococcal meningitis immunization signed by the student (or student's parent/guardian if under 18 years old). The Meningococcal Information Response Form is available on the SUNY Poly Health & Wellness Center website.

Health History and Physical Examination within the last two (2) years – Mandatory for all students registered for twelve (12) or more credits. The student may only receive clinical services at the Health & Wellness Center after the health history and physical examination have been submitted. Full-time students will not be permitted to register for another term until this health requirement has been met. Students taking less than 12 credits may use the clinical services if a physical examination within 2 years is on file.

Medical Insurance – Mandatory for all students registered for twelve (12) or more credits and all nursing students registered for 4 or more credits. SUNY Poly provides a basic, economical medical insurance plan for students who need coverage or wish to purchase additional coverage. Students taking less than 12 credits may request enrollment.

Domestic Student Medical Insurance Policy – EACH semester all domestic students taking twelve (12) or more credits and all nursing students, regardless of credit hours, are automatically billed and enrolled for a medical insurance policy as designated by SUNY Poly. If a student has other medical insurance coverage, i.e. under a parent or employer, and the student does not wish to purchase the SUNY Poly designated medical insurance, a waiver must be completed prior to attendance once each academic year. Automatic billing and enrollment will occur, if a waiver is not completed by the first day of the semester. Once that date passes, no waivers will be accepted. A PIN number is required to complete the waiver, which new students receive via mail. The medical insurance waiver is

online: <http://healthwaiver.sunypoly.edu>.

International Student Medical Insurance Policy – The State University of New York requires that all international students entering the country for study or research, or any US student studying abroad in a SUNY sponsored program purchase a SUNY medical insurance policy. Medical insurance information is mailed upon admission and students are automatically billed.

For questions or more information, please contact the Health and Wellness Center by phone: 315-792-7172 or fax: 315-792-7371.

Services for Students with Disabilities

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/disability-services/>

SUNY Polytechnic Institute welcomes students with disabilities at our Albany and Utica sites. A student with a disability should discuss individual needs with the Disability Services Coordinator at any time to understand options for academic accommodations or disability services at SUNY Poly. An appointment by phone or in person with the Disability Services Director, (315-792-7170) Utica site, is needed for the consideration, planning, and provision of the necessary support services.

The Disability Services Director assists with the following services: orientation, regular counseling, individualized advisement and registration, assistive technology training and the determination of academic accommodations based on a student's documented disability.

The Disability Services Director also serves as a liaison with the New York State Vocational Rehabilitation Service, the New York State Commission for the Blind and Visually Impaired, and other agencies serving or sponsoring the student.

Students with disabilities seeking accessible rooms in the residence halls should contact the Residential Life and Housing Office at 315-792-7810. For further information regarding the Disability Services program at SUNY Poly go to the Disability Services website: http://sunypoly.edu/disability_services or email ds@sunypoly.edu.

Services for International Students

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/international-student-services/>

The Office of International Student Services, located in the Student Center in Utica, serves the international student community of SUNY Poly. We provide immigration services, initial and on-going orientation programming and general support to the international population.

Through our immigration services, we help international students maintain their status in compliance with immigration regulations and apply for the immigration benefits for which they are eligible. The International Student Services Office provides assistance and advocacy for all international students with the campus, community, and state and federal offices. Additionally, numerous workshops on immigration topics are offered to international students and the campus community.

As part of our orientation programming, we provide extensive fall and spring orientation programs for incoming international students and workshops throughout the semester on topics relating to living and working in the U.S. The International Student Services office works with student groups to help provide activities to complement the educational experiences of international students.

We also assist our current students who are interested in developing skills and experience in full and part-time off-campus work related to their studies through Curricular Practical Training and Optional Practical Training. Additionally, there are a limited number of opportunities for international students to work on campus during the semester and over semester breaks.

Library

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/library/>

Named after SUNYIT's third president, the Peter J. Cayan Library is open seven days a week during the academic year so that the SUNY Poly community members can take advantage of the many library services when they most need them. The library includes 10 group study and collaboration spaces and two computer lab areas for students to use for academic projects. The Library staff is available to assist students in finding the appropriate resources for learning and research. The library offers many services to online and distance SUNY Poly students. The Cayan Library also houses many services that are essential for student and faculty success, including The Learning Center, Academic Advising, Instructional Technology Support, and the IT Help Desk.

Teaching and Learning Support

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/teaching-learning-support/>

Student success is very important to SUNY Poly, and the services available through our teaching and learning support area are designed to ensure all students have the best possible support during their time at SUNY Poly. The teaching and learning support group provides assistance to students and faculty on the exploration and usage of various instructional technologies, including our online learning management system, ANGEL. Students interested in help with either math or writing skills can visit our learning center. The Learning Center has both professional and student tutors available for a wide range of specific courses as well as a small computer lab which students can use with their tutors for more intensive help. The Learning Center also manages any ADA based testing accommodations.

Learning Center

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/learning-center/>

Located in the Cayan Library, the Learning Center is the source for academic support services on our campus. The Center has a staff of tutors, both professionals in their fields and peer tutors trained to help other students succeed. In addition to live tutoring, students can access online support through two services, STAR-NY and NetTutor. Both are available through our webpage and campus learning management system. The Center also sponsors a number of workshops on topics like effective test preparation, research skills and academic integrity. Many students who are entitled to accommodations will use the center as a place for test-taking and other options. In addition, the Center is also a public computing lab with networked computers. Our staff is always ready to answer questions on software applications. Questions can be directed to the Learning Center or by calling (315) 792-7316.

Computing and Media Services

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/computing-media-services/>

The use of technology is widely integrated into almost all facets of life at SUNY Poly. Every student receives a SUNY Poly computer account for access to computer and network resources and an email account for college communications. All official electronic communications between students, faculty and campus offices are conducted through the campus email system. Students, faculty, and staff can get assistance with the various technology services around campus by going to, calling, or submitting a help ticket to the Help Desk located in the Cayan Library. Community members can use SUNY Poly's computer labs as well as the wireless and wired network to access various specialized software applications. Virus protection and other software are available to students at no or low costs. Information pertaining to computing resources and software downloads is available at <http://www.sunypoly.edu/its>.

Students are encouraged to be an active part of the technology infrastructure of the college. Students may elect to pursue employment within one of the technology support areas through the Human Resources Department, Financial Aid Office, or Graduate Office, or through coordination with the appropriate faculty advisor, address a specific technology challenge as part of a for-credit academic experience.

New Student Orientation

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/new-student-orientation/>

New graduate students are required to participate in an on-line orientation program. In addition, new graduate students have the option to attend a half-day on-campus program that is offered on various dates at the start of every term. Information regarding the on-line and on-campus orientation programs is forwarded by the Graduate Center following acceptance to SUNYIT. Please note that international students are required to attend a multi-day orientation designed specifically for them upon arrival.

Residential Life and Housing

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/residential-housing/>

The mission of the staff in the Office of Residential Life and Housing at SUNY Polytechnic Institute is to promote a residential experience that advances each resident's personal growth and development and inspires lifelong community engagement.

The Residential Life staff members are guided by principles that support a safe, healthy and well maintained living environment. The department is administered by the Director of Residential Life and Housing. Residential complexes are staffed by full time professionals who provide guidance and support to the student staff and resident students. The student staff in Residential Life includes Resident Advisors (RAs) and Residential Office Assistants who serve as mentors and sources of information to assist students in making their SUNY Poly experience a positive and successful one.

Residential Living Options

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/residential-living-options-2/>

SUNYIT currently guarantees on campus housing in traditional residence halls and suite style buildings. Oriskany Hall, a newly constructed residence with LEED Silver Certification, primarily houses first year students. Oriskany is comprised of 14, 25 or 28 person double and single room suites with multiple restrooms, a shared kitchenette, shared conference/study room and shared living room. Oriskany also hosts three large classrooms and a full kitchen for building events and academic courses.

Upper-class students reside in Mohawk and Adirondack complexes. Buildings hold 16 students in 4-person suites with a shared bathroom and common living room and primarily single bedrooms. Both Mohawk and Adirondack have full kitchens and lounges available in a common area for resident student use.

There is a limited amount of Graduate Student Only Housing in Mohawk complex. A section of this upper-class and graduate student housing complex is reserved for graduate students only. Space is limited, and graduate students who are committed to living on campus should apply for housing immediately to increase the likelihood of securing a room in this area. Graduate students may also be housed in Adirondack and Oriskany depending upon demand and timing of applications.

Ethernet, wireless and cable service are provided for all resident students. Resident students also have access to laundry facilities within their own complex. Returning students are eligible to select their own suitemates and housing via a lottery system in the spring semester of each year.

Resident students are required to purchase a meal plan with Sodexo Dining Services. For more information regarding housing, dining, or the terms of the housing license, please contact the Residential Life and Housing Office at 315-792-7810 or visit the SUNYIT website.

Personal Safety and Security

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/personal-safety-security/>

SUNY Poly is committed to providing a safe, supportive, and secure environment for the entire community, including visitors. Members of the community are encouraged to promptly report suspicious behavior, crimes and fires to the University Police Department by dialing 315-792-7111 (Utica) or 518-437-8600 (Albany). University Police is staffed by dispatchers and officers 24 hours a day, 7 days a week.

Our residence halls are protected by smoke and heat detectors and exterior doors are secured by an electronic access system that is activated by the resident student's SUNY Poly Card. SUNY Poly's University Police Department maintains regular patrols around the residence hall areas on a 24-hour-a-day basis and also monitors the inside and outside public areas of residences with closed circuit television. University Police escorts are also available 24 hours a day, 7 days a week.

Upon request, University Police will provide a copy of SUNY Poly's Annual Security and Fire Safety Report. This report includes statistics as reported to the United States Department of Education for the previous three years. The report also includes institutional policies concerning security and fire safety, policies concerning sexual assault, life safety systems, and other related information. You may also access the report from the University Police web page at: www.sunyit.edu/university_police/safety. Information on campus crime statistics (Jean Clery Act) is available in the Admissions Office, Human Resources Office or at the University Police Office.

Student Activities and Student Government

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/student-activities-government/>

The SUNY Poly Student Association (SUNYPolySA) is the elected student government organization for the student body (undergraduate and graduate) at the Utica site. Through student activity fees, SUNYPolySA provides funding to support more than 30 academic and social clubs, student organizations, a student-run literary publication, a student senate, and a campus radio and cable TV station (Wildcat Media) providing students with a choice of extracurricular activities to make life outside of class more enjoyable both educationally and socially. Additionally, SUNYPolySA supports ~~and~~ major campus programming and special events. Student organizations at SUNY Poly provide students with leadership opportunities and with outlets for creative expression and campus involvement. Professional, academic, and special interest clubs are open to all students. The Black and Latino American Student Union, the West Indian African Club, and the International Student Association provide peer support and multi-cultural activities for the campus. Academic honor societies and academic clubs are also an important component of campus life at SUNY Poly.

Performing Arts/Cultural Interests

<http://sunypoly.edu/apps/catalog/grad/2015-2016/student-services/performing-artscultural-interests/>

The SUNY Poly Campus Activities Board (CAB) in Utica sponsors various performances throughout the academic year, to include comedians, musical artists, hypnotists, and more. Students may purchase discount tickets to performances presented by internationally acclaimed artists in the Broadway Theatre League at the Stanley Performing Arts Center and the Great Artists Series of the Munson-Williams-Proctor Institute.

The Gannett Gallery, located in Kunsela Hall on the Utica site, hosts several art exhibitions a year, including SUNY Poly's annual regional show.

SUNY Poly's Cultural and Performing Arts Council funds fine arts, music and theater programs on campus throughout each academic year.

Culturally diverse programs are also available through programming by the SUNY Poly Campus Activities Board, President's Programming Initiative, and special interest groups (International Students Association, the West Indian African Club, and Black and Latino American Student Union). Black History Month, Hispanic Heritage Month, and other cultural programs provide the opportunity to celebrate the unique contributions of our culturally diverse world.

In addition, academic programs sponsor lecture series, symposia on current research, demonstrations, and dramatic readings which are open to students and the SUNY Poly community.

Students may also participate in performance ensembles in theatre and instrumental jazz.

Financial Aid

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/>

- [Applying for Financial Aid](#)
 - [Miscellaneous Programs](#)
 - [Estimated Cost of Attendance – Utica Campus](#)
 - [Payment of Financial Aid](#)
 - [Students' Rights and Responsibilities](#)
 - [Academic Requirements for Financial Aid Eligibility](#)
 - [International Student Financial Aid](#)
 - [Federal Financial Aid Programs](#)
 - [New York State Financial Aid Programs](#)
 - [More Information](#)
-

Miscellaneous Programs

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/miscellaneous-programs/>

Employer Sponsorships: Students who will be reimbursed by their employer for tuition costs may be eligible to defer payment of their tuition. Visit the [Bursar's webpage](#) for more details.

Shirley Wurz Loan Fund: SUNY Poly has established the Shirley Wurz Loan Fund to assist students in meeting unanticipated financial needs. Through this fund, a student can borrow up to \$75 for 30 days with no interest or service charge. If the loan is not repaid on time, there is a \$2.00 administrative charge assessed for each 30 day period or portion thereof until the loan is repaid. All funds must be repaid by the end of the semester during which they were borrowed. Loans will not be made during the last two weeks of the semester. To be eligible, a student must be enrolled at least half-time and working toward a degree. A student will not be able to borrow if he/she already has a loan outstanding, has continually repaid loans after the due date, owes an outstanding balance to SUNY Poly or if classes are not in session. Applications can be obtained from the Financial Aid Office.

Class of 1983 Loan Fund: The Class of 1983 established a loan fund to assist students by providing short-term loans (up to \$300) secured by undisbursed financial aid. To be eligible, a student must have authorized federal and/or state aid from which the student is entitled to a refund. A student may take out only one Class of 1983 loan a semester and loans cannot be issued against undisbursed Federal Pell Grants or future disbursements of student loans. Applications for a Class of 1983 loan can be obtained from the Financial Aid Office.

Wildcat Dollars: Students who have financial aid which exceeds their bill for the semester and have not received a refund check may be eligible to add Wildcat Dollars to their SUNY Poly card from their financial aid account. The SUNY Poly card is welcomed as a form of payment at our campus bookstore, Student Center food court, and all vending machines on campus. It is also welcomed at [participating off-campus vendors](#). Wildcat Dollars can be requested through your Bannerweb account by following the [instructions](#).

Private Scholarships and Fellowships: Several source books list scholarships and fellowships awarded by private organizations. Please check your local library for additional information.

Also, you may access an online searchable database of scholarships at www.finaid.org, www.fastweb.com, www.collegeboard.com, _____

Estimated Cost of Attendance - Utica Campus

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/estimated-cost-of-attendance/>

Masters

	Commute Off r Living with Parent	Off campus Apartmen t	On campus Dormitory
Tuition	\$8160	\$8160	\$8160
Fees	\$1,300	\$1,300	\$1,300
Books & Supplies	\$900	\$900	\$900
Room & Board	\$2,360	\$12,870	\$12,870
Transportation	\$1,440	\$1,440	\$1,400
Personal	\$1,350	\$1,350	\$1,350
Total Budget	\$14,855	\$25,850	\$25,850

Tuition for out-of-state residents is \$15,147.

MBA

	Commute Off r Living with Parent	Off campus Apartmen t	On campus Dormitory
Tuition	\$10,810	\$10,810	\$10,810
Fees	\$1,300	\$1,300	\$1,300
Books & Supplies	\$900	\$900	\$900
Room & Board	\$2,360	\$12,870	\$12,870
Transportation	\$1,440	\$1,440	\$1,400
Personal	\$1,350	\$1,350	\$1,350
Total Budget	\$17,990	\$17,990	\$17,990

Tuition for out-of-state residents is \$15,147.

The above budgets represent average expenses. Generally, a student who is careful about his/her expenses can complete the year for less. Off-campus living expenses are based upon the assumption that the student will be sharing an apartment, and the associated expenses, with another student.

Tuition, fees, and other charges are estimated at the time of printing and are subject to change without prior notice at the discretion of the college administration and the State University of New York.

Applying for Financial Aid

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/applying/>

To be eligible for financial aid, graduate students must meet those criteria as outlined on the "Eligibility" (www.sunypoly.edu/financial_aid/eligibility) page of the Financial Aid Office website.

To apply for financial aid, students must complete the following steps:

1. Obtain a Personal Identification Number (PIN) from the U.S. Department of Education at www.pin.ed.gov. If you have misplaced your original PIN, you can visit this website to request a duplicate PIN.
2. Complete and submit a Free Application for Federal Student Aid (FAFSA) at www.fafsa.ed.gov. SUNY Poly's Federal School Code is 011678.
Students are encouraged to complete the FAFSA after January 1 as soon as possible. To ensure timely financial aid process, students can submit the FAFSA using estimated adjusted gross income and income tax paid values. Upon submission of your official, completed federal tax return to the IRS, please update the FAFSA to show the actual amounts reported to the IRS. If your federal taxes have already been completed and filed with the IRS, please use the "IRS Data Retrieval Tool" when completing the FAFSA. This will allow you to bring certain income/tax information from the IRS website into your FAFSA. Note that your taxes must have been submitted/processed by the IRS at least 3 weeks previously if filed electronically and 8 weeks if sent to the IRS by mail.

The primary responsibility for meeting educational costs rests with the student and his/her family. The SUNY Poly Financial Aid Office uses the expected family contribution (EFC) generated from the FAFSA as the basis for the student/family contribution.

SUNY Poly gives priority in the awarding of financial aid to those students with the greatest financial need. Financial need is determined by subtracting the expected family contribution from the student's estimated cost of attendance.

While SUNY Poly does not have a deadline for applying for financial aid, we encourage our students to apply by March 1 each year. Applications are processed on a rolling basis starting in late February.

A financial aid award letter will be sent to each student who has been accepted and whose financial aid application is complete.

The U.S. Department of Education randomly selects some financial aid applicants to be verified. In those cases, the Financial Aid Office will request additional documents including an institutional verification worksheet and W2 forms. If you were unable to use the IRS Data Retrieval Tool when completing the FAFSA, an IRS Tax Transcript will also be required. These documents must be reviewed and necessary corrections made before financial aid is awarded.

If there has been a significant decrease in the student's income from the prior year, a Special Condition

form may be submitted to the Financial Aid Office along with supporting documentation. The Financial Aid Office may be able to use the current year's estimated income rather than the prior year's actual income to determine your eligibility for federal financial aid.

Repayment of Financial Aid

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/payment/>

Students who drop from full-time to part-time, withdraw from SUNY Poly, or stop attending class without officially withdrawing during a semester may be required to repay all or a portion of the financial aid awarded for that term. The amount of such repayment, if any, is dependent upon the amount of aid disbursed to the student and the number of days the student actually attended classes. The calculation of any repayment will be made by the Financial Aid Office subsequent to the official dropping of a class or withdrawal from SUNY Poly.

Students' Rights and Responsibilities

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/students-rights-responsibilities/>

You have the right to ask a school:

1. The names of its accrediting and licensing organizations.
2. About its programs; its instructional, laboratory, and other physical facilities; and its faculty.
3. What the cost of attendance is, and what its policy is on refunds to students who drop out.
4. What financial assistance is available, including information on all federal, state, local, private, and institutional financial aid programs.
5. What procedures and deadlines are for submitting applications for each available financial aid program.
6. What criteria it uses to select financial aid recipients.
7. How it determines your financial need. This process includes how costs for tuition and fees, room and board, travel, books and supplies, and personal and miscellaneous expenses are considered in your cost of attendance. It also includes the resources considered in calculating your need.
8. How much of your financial need, as determined by the institution, has been met.
9. How and when you will be paid.
10. To explain each type and amount of assistance in your financial aid package.
11. What the interest rate is on any student loan that you have, the total amount you must repay, the length of time you have to repay, when you must start repaying, and what cancellation or deferment provisions apply.
12. If you are offered a Federal College Work-Study job – what kind of job it is, what hours you must work, what your duties will be, what the rate of pay will be and how and when you will be paid.
13. To reconsider your aid package if you believe a mistake has been made, or if your enrollment or financial circumstances have changed.
14. How the college determines whether you are making satisfactory progress, and what happens if you are not.
15. What special facilities and services are available to the handicapped.

It is your responsibility to:

1. Review and consider all information about a school's program before you enroll.
2. Pay special attention to your application for student financial aid, complete it accurately, and submit it on time to the right place. Errors can delay or prevent your receiving aid.
3. Know and comply with all deadlines for applying or reapplying for aid.
4. Provide all additional documentation, verification, corrections, and/or new information requested by either the Financial Aid Office or the agency to which you submitted your application.
5. Read, understand, and keep copies of all forms you are asked to sign.
6. Repay any student loans you have. When you sign a promissory note, you are agreeing to repay your loan.
7. Notify your school of a change in your name, address, or attendance status. If you have a loan, you must also notify your lender of these changes.
8. Satisfactorily perform the work agreed upon in a Federal College Work-Study job.

9. Understand your college's refund policy.
 10. Maintain good academic standing to retain your eligibility for financial aid.
-

Academic Requirements for Financial Aid Eligibility

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/academic-requirements/>

Federal and state regulations governing financial aid programs require institutions of higher education to establish minimum standards of “satisfactory academic progress” (SAP) which a student must achieve in order to receive financial aid. These standards are applied to a student’s entire academic history at SUNY Poly, including periods when financial aid was not received. Failure to meet these SAP requirements for financial aid eligibility does not affect the student’s academic standing at SUNY Poly.

For a graduate student to be academically eligible for financial aid, a student must meet these criteria:

- Be matriculated (accepted into a degree program)
- Enrollment in at least 5 graduate credit hours each semester for federal aid programs
- Maintain satisfactory academic progress (as defined on the [Financial Aid Office website](#))

Please note that only courses required for your degree program are considered in determining your enrollment status as it pertains to financial aid eligibility. Student aid cannot be awarded for classes that do not count toward your degree.

Requirements for Maintaining Eligibility for Federal Student Aid Programs

Satisfactory academic progress is determined by measuring the student’s academic performance at SUNY Poly and consists of three components. In order to remain academically eligible for the federal aid programs, the student must meet the following requirements:

- **Maximum Time Frame:** students must meet all degree requirements within 150% of the credit hours needed to earn the degree; and
- **Qualitative Measure:** at the close of each spring semester students must have a cumulative grade point average of 2.0 or greater. Students must also maintain a cumulative grade point average greater than that which would result in academic dismissal (this information is listed in this catalog in the Undergraduate Standing section of the Academic Requirements and Policies chapter); and
- **Quantitative Measure:** students must pass at least 66% of all credit hours attempted toward their degree (the 66% measurement will be reviewed at the close of each spring semester).

All requirements and procedures which follow apply to full-time and part-time students.

Review Policies

- At the close of each spring semester, the cumulative GPA and number of credits earned by each student are reviewed for compliance with the criteria for good academic standing. Students not receiving financial aid are subject to the same criteria and can be placed on financial aid

suspension for future consideration.

- The following are considered credits passed: “A” through “D” grades; “S” passing with credit; and courses repeated for credit, subject to the above grades.
- The following are not considered credits passed: ”F” grades; “W” withdrawal; any courses audited with no credit; “I” incomplete; and “IP” in progress.

Notification

The Financial Aid Office notifies by letter or e-mail any student who does not maintain satisfactory academic progress that he/she is being placed on financial aid suspension.

Financial Aid Suspension

A student who fails to meet any of the above requirements is placed on financial aid suspension for federal aid until the requirement has been met. Also, any student who withdraws from SUNY Poly, does not pass any courses (incompletes are not considered passing grades) or is academically dismissed may lose his/her eligibility for aid, be placed on a Financial Aid probationary status, and/or would be required to see Financial Aid for counseling. Financial aid suspension results in the termination of financial aid from all federal financial aid programs including loans. Students do not have to receive a warning before action is taken to deny financial aid.

Appeal of Financial Aid Suspension

Students may request a waiver of the satisfactory academic progress requirements through the following procedure:

- The student submits a Request for a Waiver form (can be obtained from the Financial Aid Office) to the Director of Financial Aid. The request should include: reasons why he/she did not achieve the minimum academic requirements; reasons why his/her aid should not be terminated; and documentation which would support his/her reason for failing to maintain satisfactory academic progress (i.e., statement from doctor if reason given was medically related).
- The Director of Financial Aid reviews the appeal and determines whether the granting of a waiver is warranted. The student is then advised of the decision.
- Students whose appeals are approved will be placed on Financial Aid probation. Students who fail to meet the terms of their probationary period will be denied aid until they regain their eligibility.

Conditions of Reinstatement

- A student’s eligibility for federal financial aid will be reinstated for subsequent semesters once the above “Requirements for Federal Student Aid Programs” have been met.
- Students who are academically dismissed and who wish to return to SUNY Poly must submit an appeal to the Registrar’s Office. Those who are readmitted will need to apply for a Financial Aid Waiver if they do not otherwise meet the academic progress requirements. The Academic Requirements and Policies chapter in this catalog contains information on academic reinstatement.
- A grade change may result in the reinstatement of a student’s eligibility. However, it is the

responsibility of the student to notify the Financial Aid Office of any grade changes.

International Student Financial Aid

<http://sunypoly.edu/apps/catalog/grad/2015-2016/international-student-financial-aid/>

International students are not eligible for financial aid through the New York State Aid Programs or through the Federal Title IV Aid Programs. International students interested in financial aid funding should visit the following sites:

- [eduPass](#)
 - [Institute of International Education](#)
 - [International Education Financial Aid](#)
-

Federal Financial Aid Programs

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/programs/>

Campus-Based Federal Aid Programs

Federal Perkins Loan Program: A Federal Perkins Loan is a low-interest 5 % loan for graduate students with exceptional financial need, as determined by SUNY Poly. The annual maximum that a graduate student may be awarded is \$8,000 annually. The maximum aggregate loan amount is \$60,000 for a graduate student, including loans borrowed as an undergraduate student. Repayment begins nine months after the student graduates or drops below half-time status. The availability of this loan program for the academic year is unknown at this time, pending federal legislation.

Non-Campus Based Federal Aid Programs

Veterans Administration (VA) Educational Benefits: The Veterans Readjustment Act of 1966, and subsequent legislation, enables certain veterans, or sons or daughters of deceased or disabled veterans, to obtain financial assistance for a college education. Contact the local Veterans Administration Office for further educational information or call 1-888-442-4551.

U.S. Bureau of Indian Affairs Aid to Native Americans: For qualification guidelines contact Bureau of Indian Education, 1849 C Street, N.W., Mail Stop 3609 MIB, Washington, DC 20240, Tel: 202-208-6123 Fax: 202-208-3312, www.bie.edu

Federal Direct Unsubsidized Student Loans: A borrower's unsubsidized loan amount is determined by calculating the difference between the borrower's cost of attendance for the period of enrollment and the amount of estimated financial assistance. The maximum a student can apply for per academic year is \$20,500 for graduate students. Interest must be paid or capitalized by the student from the date the loan is disbursed. Payment begins six months after the student graduates or drops below half-time status.

Federal Direct Graduate PLUS Loan: Upon credit approval, graduate students are eligible to borrow under the Federal Direct Graduate PLUS Loan Program up to their cost of attendance minus other estimated financial assistance. Applicants for these loans are required to complete the Free Application for Federal Student Aid (FAFSA) and must have applied for their annual loan maximum eligibility under the Federal Subsidized and Unsubsidized Stafford Loan Program before applying for a Graduate PLUS Loan. Interest must be paid or capitalized by the student from the date the loan is disbursed. Repayment of the loan begins within 60 days of the last disbursement of the funds unless a borrower contacts direct lending to arrange a deferment or forbearance.

Loan Consolidation: You may want to consider consolidating your loans to simplify repayment. By consolidating your loans, you will make only one monthly payment to cover all of your loans. For more information on the Direct Consolidation Loan, call 1-800-557-7392 or visit their site on the Internet at www.loanconsolidation.ed.gov. Borrowers wishing to consolidate education loans other than a Direct Loan should contact their lenders for consolidation information.

New York State Financial Aid Programs

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/nys-programs/>

Unless otherwise indicated, information about these programs and other funding opportunities can be obtained from the New York State Higher Education Services Corporation, 99 Washington Ave., Albany NY 12255. You may also call them at 1-888-NYS-HESC or visit their website at www.hesc.ny.gov.

Vocational Rehabilitation Program (Access-VR): Eligibility for vocational rehabilitation services is based upon: (1) the presence of a physical or mental disability which, for the individual, constitutes or results in a substantial handicap to employment; and (2) the reasonable expectation that vocational rehabilitation services may benefit the individual in terms of employability. Further information is available from the nearest NYS Office of Vocational and Educational Services for Individuals with Disabilities (VESID) or www.acces.nysed.gov/vr/.

Math and Science Teaching Incentive Scholarship: This program provides an annual award for students, either at the bachelor or master's degree level, who enter into a contract with HESC agreeing to teach full time for five years in the field of math or science in a middle or secondary school in New York. The annual award cannot exceed SUNY tuition. Awards will be made upon the successful completion of the academic year.

To apply contact HESC at 1-888-697-4372 or

<http://www.hesc.ny.gov/pay-for-college/financial-aid/types-of-financial-aid/nys-grants-scholarships-awards/nys-math-and-science-teaching-incentive-scholarships.html>.

Veterans Tuition Award: This program provides financial assistance to help Vietnam, Persian Gulf, Afghanistan or other eligible combat veterans studying on either a full-time or part-time basis at an undergraduate or graduate degree-granting institution. For full-time study (12 credit hours), a recipient shall receive an award of up to the full cost of undergraduate tuition for New York state residents at the State University of New York, or actual tuition charged, whichever is less. For part-time study (3-12 credit hours), awards will be prorated by credit hour. Graduate students can receive a total of 3 years of payment for full-time or part-time study. To apply contact HESC at 1-888-697-4372 or [www.hesc.ny.gov/content.nsf/SFC/Veterans Tuition Awards](http://www.hesc.ny.gov/content.nsf/SFC/Veterans_Tuition_Awards).

Senator Patricia K. McGee Nursing Faculty Scholarship Program: This scholarship offers awards on a competitive basis to applicants who are registered professional nurses enrolling in graduate programs that will qualify them as nursing faculty or adjunct clinical faculty. To be eligible, applicants must: be legal residents of New York State for at least one year; be US citizens or eligible non-citizens; be registered nurses professionally licensed to work in New York State; have been accepted in an approved master's or doctoral level nursing faculty preparation program at an approved institution in New York State; maintain satisfactory academic progress; and complete and return a service agreement in which they agree to practice as nursing faculty in New York State for 4 years. Awards cover the cost of attendance up to \$20,000 annually or the average SUNY cost of attendance, whichever is less. Payments are available for up to three years of study. Recipients must complete their graduate program within three years of receiving this scholarship.

[www.hesc.ny.gov/content.nsf/SFC/Senator Patricia K McGee Nursing Faculty Scholarship Program](http://www.hesc.ny.gov/content.nsf/SFC/Senator_Patricia_K_McGee_Nursing_Faculty_Scholarship_Program)

SUNY Graduate Assistantship Program: Graduate Assistantships are awarded each academic year to selected students who have been formally admitted to a master's program at SUNY Poly. These awards may include a New York State tuition waiver and/or a cash stipend (note: stipend dollars are considered as income and are therefore taxable). Students awarded a graduate assistantship must enroll for a minimum of nine credit hours of graduate coursework per semester. Graduate assistantships carry a weekly work obligation of teaching, research or administrative responsibilities. The number of work hours per week will vary depending on the monetary value of the assistantship.

Graduate applicants that are interested in being considered for a graduate assistantship should complete the [Graduate Assistantship Application](#) and submit it with the online [Application for Graduate Admission](#). The completed form must be returned to the SUNY Poly Graduate Admissions Office by July 1 for fall consideration and December 1 for spring consideration. An undergraduate cumulative GPA of 3.0 or higher is required for assistantship consideration. The number of awards each semester is subject to the availability of funds.

Assistantship recommendations are made to the Provost through a selection process involving each academic department and the Graduate Admissions Office. Once the assistant has been selected, the formal appointment to the position will be processed through the Office of Human Resources. The assignment of an assistantship will not be made prior to a formal offer of admission.

A student may receive a maximum of two years of support from state funding while pursuing the master's degree (upon discretion of the department and academic standing). A 3.0 GPA must be maintained while on the assistantship. Exceptions to this policy should be directed to the Provost.

Graduate assistants are expected not to engage in outside or other on-campus employment during the term of their appointment. Exceptions based on educational need (not financial need) may be authorized by the Provost after being recommended by the student's department chairperson.

Graduate assistants are expected to provide their usual services during the period of the academic year except for holidays and recesses. Upon completion of the assistantship appointment, each assistant and their supervisor must certify that the assistant has satisfactorily fulfilled the assignment and duties of the position by submitting a performance evaluation to the Graduate Admissions Office at the end of each semester. Renewals for a future semester will be based on the performance evaluation and academic standing.

SUNY Graduate Diversity Fellowship Program: SUNY Graduate Diversity Fellowships are awarded each academic year to selected students who have been formally admitted to a master's program at SUNY Poly. The fellowship offers financial support in the form of a New York State tuition waiver and/or a cash stipend (note: stipend dollars are considered as income and are therefore taxable). Students awarded a fellowship must enroll for a minimum of nine credit hours of graduate coursework per semester. There is no work obligation tied to the fellowship award. The number of awards each semester is subject to the availability of funds. A 3.0 GPA must be maintained while on the fellowship. Exceptions to this policy should be directed to the Provost.

To be eligible for the fellowship, applicants must be US citizens or have permanent resident status. Graduate applicants that are interested in being considered for a graduate fellowship should complete the

[SUNY Graduate Diversity Fellowship Application](#) responding to the following: “How will you contribute to the diversity of the student body in the program for which you are applying, including having overcome a disadvantage or other impediment to success in higher education?” The completed form should be submitted to the Graduate Admissions Office along with the online [Application for Graduate Admission](#). An undergraduate GPA of approximately 3.0 or higher is required for fellowship consideration.

The recommended fellowship application deadline is July 1 for fall consideration and December 1 for spring consideration. Fellowship recommendations are made to the Provost through a selection process coordinated by the Graduate Admissions Office. All graduate fellowship appointments and notifications will be made by the Provost. Once the graduate fellow has been selected, the formal appointment to the position will be processed through the Graduate Admissions Office. The offer of a fellowship will not be made prior to a formal offer of admission.

Graduate Opportunity Program: The Graduate Opportunity Program is for former EOP, HEOP, CD, and SEEK program graduates and reflects SUNY Poly’s concerted efforts to expand educational opportunities to under-served constituencies. The graduate tuition scholarship will provide students with financial support to help cover the cost of tuition. The number of awards is subject to the availability of funds. Questions should be directed to the Associate Provost for Student Affairs at 315-792-7505.

More Information

<http://sunypoly.edu/apps/catalog/grad/2015-2016/financial-aid/more-information/>

Financial Aid Office

SUNY Polytechnic Institute

100 Seymour Road

Utica, NY 13502

Tel. 315-792-7210

Fax 315-792-7220

finaid@sunyit.edu

www.sunypoly.edu/financial_aid

Tuition, Fees, Refunds and Billing

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/>

Tuition and fees are subject to change without prior notice at the discretion of the SUNY Poly administration and the State University of New York.

A full-time graduate student is one who has registered for a minimum of 9 credit hours per semester. A part-time graduate student is one who is registered for less than 9 credit hours per semester.

- [Graduate Tuition](#)
 - [Residency](#)
 - [Mandatory Comprehensive Student Fee](#)
 - [Other Fees & Charges](#)
 - [Medical Insurance](#)
 - [Parking Fees](#)
 - [Combined Room and Board Rates 2015-2016](#)
 - [Refund Policy](#)
 - [How Receipt of Federal Title IV Funds Affects Student Refunds](#)
 - [Billing Tuition Payment](#)
 - [Financial Aid Deferrals](#)
 - [Other Third Party Deferrals](#)
 - [FERPA \(Family Educational Rights and Privacy Act of 1974\)](#)
 - [Required Disclosures](#)
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Graduate Tuition

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/graduate-tuition/>

	<i>12+ Credit Hours</i>	<i>1-11 Credit Hours</i>
New York Resident	\$5,435 per semester	\$453 per credit hour
Out-of-State Resident	\$11,105 per semester	\$925 per credit hour
MBA (NYS Resident)	\$7,205 per semester	\$600 per credit hour
MBA (Out-of-State Resident)	12,195 per semester	\$1,016 per credit hour
Comprehensive Student Fee	\$635 per semester	\$52.75 per credit hr.

Residency

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/residency/>

“Residence” for purposes of tuition refers to a student’s principal or permanent home. In order to qualify as a New York State resident for tuition purposes, in addition to other criteria, a student must be “domiciled” in New York State for a 12 month period immediately prior to the date of registration for the academic term for which application is made. A “domicile” is defined as that place where an individual maintains his/her permanent home and to which he/she always intends to return. Mere presence in New York State for educational purposes does not necessarily constitute domicile, regardless of time spent in NYS.

Effective July 1, 1986, resident tuition rates are applied to members of the Armed Forces of the United States on full-time active duty, stationed in New York State, their spouses and dependents. Spouses and dependents must obtain proof of their dependent status from appropriate personnel at their base education office and present it at the Bursar’s Office each semester upon registration. Please contact the Bursar’s Office if you require further information.

Mandatory Comprehensive Student Fee

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/mandatory-fee/>

The Comprehensive Student Fee supports programs not provided by tuition dollars or state subsidy that enrich the quality of a student's total experience at SUNY Poly. All components of the Comprehensive Student Fee are mandatory. The typical Comprehensive Student Fee supports activities at the following levels:

	<i>12+ Credit Hours (Per Semester)</i>	<i>1-11 Credit Hours (Per Credit Hour)</i>
College Fee	12.50	.85
Intercollegiate Athletics	224.00	18.70
Student Activities	105.00	8.75
Health Services	143.00	11.95
Technology Applications	150.00	12.50
Total:	\$635.00	\$52.75

The **College Fee** is established by the Board of Trustees of the State University of New York.

The **Student Activities Fee** provides the funding for activities sponsored for the students, under the direction of the students' governing bodies.

The **Intercollegiate Athletics Fee** provides funding to operate and sustain competitive intercollegiate athletics programs at the campus. It is not a fee for use of athletic facilities by the students.

The **Health Services Fee** is used to support the services provided by the Health Center. Students must provide a health history and physical examination to be eligible for routine medical care.

The **Technology Fee** is used to upgrade, modify and make significant technological advances in classrooms and laboratories used by SUNY Poly students.

Other Fees & Charges

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/other-fees-charges/>

	<i>Full-time</i>	<i>Part-time</i>
Parking Fee, <i>plus sales tax</i> (see section entitled "Parking Fees")	\$55.00	\$27.50
Alumni Fee - per semester	\$10	\$.85 cr. hr.
Re-admission Fee	\$30	\$30
Diploma Cover Charge - payable when applying for diploma	\$10	\$10
Drop/Add Fee - paid per transaction	\$20	\$20
International Student Medical Insurance	\$1,301/yr.	\$1,301/yr.
Domestic Student Medical Insurance	\$696.50/sem.	Optional
ID Card Replacement Fee	\$25.00	\$25.00
Late Registration Fee	\$40	\$40
Orientation Fee - paid once during first semester		
<i>Freshman</i>	\$150	\$150
<i>Transfer/Graduate</i>	\$50	\$50
<i>International</i>	\$200	
Late Payment Fee — charged to accts for payments received after assigned due date	\$30	\$30
Returned Item Charge — levied against maker for checks returned unpaid or charge payments declined by cardholder bank	\$25	\$25
Transcript Fee — per transcript	\$5	\$5
Diploma Replacement Fee - per replacement	\$20	\$20
Diploma Cover Replacement Fee - per replacement	\$25	\$25
HVCC Technology Fee - HVCC students only	\$110	\$8.50 cr. hr.
HVCC Parking Fee — HVCC students only	\$86.40	\$7.20 cr. hr.
<i>All fees subject to change</i>		

Medical Insurance

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/medical-insurance/>

In accordance with State University policy, medical insurance is mandatory for all **domestic** students registered for 12 or more credits and those in health care programs that require clinicals or internships. The charge for medical insurance purchased by the University will be added to the student's account each semester unless he/she is able to provide SUNY Poly with proof of insurance coverage and fill out an on-line Medical Insurance Waiver Form prior to attendance. It is the student's responsibility to ensure that the waiver form is on file, as the charge becomes final on the last day to waive. Waiver forms will then no longer be accepted and the student is responsible for the payment of the insurance fee. **Students taking 4 or more credits may purchase coverage if they so desire.** Waiver forms must be submitted on the Web once each academic year **prior to attendance.** Completion of the waiver for the fall semester remains effective for that entire college year (fall and spring semesters). Completion of the waiver in the spring semester removes the insurance fee **ONLY FOR THAT SPRING SEMESTER.**

The medical insurance waiver is online: www.healthwaiver.sunypoly.edu.

The cost of Student Medical Insurance will be deducted from your bill after review by Health Center staff.

Medical Insurance fee is not automatically refunded. When a student drops below 12 credits, written request for refund will be accepted at the Business Office. After the last day to add for the semester, no further refunds of insurance will be allowed.

All international students (domestic students traveling abroad under an exchange program, or foreign students attending college in the U.S. on a student visa) **must purchase International Student Medical Insurance** regardless of whether they are full- or part-time. International students who have been issued an I-20 from SUNY Poly must be covered the entire time they remain in the U.S., whether attending classes or remaining in the country during summer break. Exemption from participation in the plan may be granted only in very few and specific circumstances.

Since both the international and domestic insurance plans are obtained through prior arrangement with insurance agencies independent of the State University of New York, cost per year is variable based on experience rating for the program. Students will be charged the appropriate rate at the time they begin attendance. Those graduating in December should contact the Health & Wellness Center and Business Office in advance of registration. Current rates are as follows, but are subject to change annually:

Domestic Student Basic Medical Insurance: \$1393. per year*

(full-time students only)

International Student Insurance: \$1301. per year*

(both full- and part-time students)

**Subject to change*

Parking Fees

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/parking-fees/>

A parking fee must be paid by all students and employees (not exempt as a result of collective bargaining agreements) who park a vehicle on campus. That vehicle must be registered with University Police and **exhibit a valid parking decal**. Fees are established using SUNY Parking Model Costs and Charges, and are subject to New York State and local sales taxes (currently 8.75%). All regulations pertaining to the use of vehicles on campus are enforceable 24 hours a day throughout the year.

Parking is automatically assessed to all students registered for classes requiring on-campus attendance. If you will not be parking on campus, please complete a waiver. A valid decal can be obtained at the University Police Department. Parking fees for various categories are as follows (plus applicable sales taxes):

Time Period	Full-time	Part-time
Single Semester Only	55.00	27.50
Summer Semester Only	20.00	20.00

Parking fees are non-refundable. A full-time student is a student registered for 12 or more credit hours on campus.

Provision for additional vehicles must be made with the University Police Department. Only one vehicle may be parked on SUNY Poly property at any given time. Each vehicle must be registered and display a valid registration decal.

Students who have more than enough aid to cover their appropriate semester charges may authorize the payment of their parking fee against their incoming financial aid.

Combined Room and Board Rates 2015-2016

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/combined-room-board-rates/>

Room	Meal Plan	Cost/Semester
Single	10 meals + 400 pts.	\$6,389
Single	14 meals +220 pts	\$6,389
Single	19 meals +100 pts	\$6,389
Double	10 meals + 400 pts.	\$5,857
Double	14 meals + 220 pts.	\$5,857
Double	19 meals + 100 pts.	\$5,857
Triple	10 meals + 100 pts.	\$5,325
Triple	14 meals + 220 pts.	\$5,325
Triple	19 meals + 400 pts.	\$5,325

Refund Policy

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/refund-policy/>

Refund of Tuition for Credit Courses

Students withdrawing from SUNY Poly incur the tuition liabilities listed below based on the date of withdrawal. Liability for tuition is calculated at the time the student completes the official withdrawal process with the Registrar's office. **Not attending classes does not reduce or cancel liability.**

Undergraduate/Graduate	15 Week Schedule (Full Semester)	
Liability During:	1st week of classes*	0%
	2nd week of classes	30%
	3rd week of classes	50%
	4th week of classes	70%
	5th week of classes	100%
Undergraduate/Graduate	Quarter or 10 Week Term	
Liability During:	1st week of classes*	0%
	2nd week of classes	50%
	3rd week of classes	70%
	4th week of classes	100%
Undergraduate/Graduate	8 Week Term	
Liability During:	1st week of classes*	0%
	2nd week of classes	60%
	3rd week of classes	80%
	4th week of classes	100%
Undergraduate/Graduate	7 Week Term	
Liability During:	1st week of classes*	0%
	2nd week of classes	65%
	3rd week of classes	100%
Undergraduate/Graduate	5 Week Term	
Liability During:	1st week of classes*	0%
	2nd week of classes	75%
	3rd week of classes	100%
Undergraduate/Graduate	4 Week Term	
Liability During:	2nd day of classes*	0%
	Remainder of 1st week*	50%
	2nd week	100%

* *The first week of class session is the first day of the semester, quarter or other term. The first week of classes, for purposes of this section, shall be considered ended after **seven calendar days, including the first day of scheduled classes, have elapsed.***

Please check with the Student Accounts Office immediately about any refund/liability if you are contemplating withdrawing from any course. Consult with the Financial Aid Office also, as an aid package could be adversely affected by a decrease in credit hours.

No drop is considered official until the proper forms have been completed and submitted to the Registrar's Office. Payment of any related fees must also be done at the Student Accounts Office, at this time. **During certain specified times of the year students may Add/Drop courses via the web. When the web is closed students must make changes in person or by telephone with the Registrar's Office. The Registrar's Office does not accept registration changes by e-mail.**

Refund of Fees

All student fees are non-refundable after the end of the first week of classes. The college fee is non-refundable once classes start. The alumni fee is refundable by petition to the Alumni Office until the last day to withdraw without record.

Refund of Room and Board Charges

Room and board refunds are granted in accordance with stipulations in the current year Room and Board License issued to each resident. Room rental refunds are determined when all personal effects are removed from the room, keys surrendered, room inspected by Residential Life, all debts related to room rental incurred by the resident are paid in full to SUNY Poly, and the resident has signed out of the room. Room and board refund requests **must** be in writing. Failure to terminate occupancy in the manner stipulated in the Room and Board License may result in additional charges accumulating for the period of time between termination of residency and the date of approval by the Director of College Housing. A resident who registers and occupies a room for two weeks or less receives a percentage refund of room and board charges based upon the number of weeks housed. A week is defined as beginning on Sunday and ending the following Saturday at midnight. A part week is counted as a whole week for refund purposes. **Students occupying a room after the Saturday following the second full week of classes are liable for room and board charges for the entire semester.**

Refund of Charges for Non-Credit Courses

Non-credit programs are operated on a self-sustaining basis. Fees are variable. Therefore, due to the nature of these programs, **no refunds** are allowed.

How Receipt of Federal Title IV Funds Affects Student Refunds

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/student-refunds/>

(Pell, Direct Student Loans, Perkins Loans, Nursing Loans, and SEOG)

In accordance with the Higher Education Amendments of 1998, a portion of Title IV grant or loan funds, but not Federal Workstudy Funds **must** be returned to the Title IV Program upon a student's withdrawal from school. The law does not specify an institutional refund policy. *This may result in a student incurring a liability to SUNY Poly after the Title IV funds are returned.*

Withdrawal Date

Regulation requires SUNY Poly to determine a withdrawal date from the student's official notification to the institution. For unofficial withdrawals (dropping out without notification), the withdrawal date becomes the last day we can document, your participation in an academic activity or the midpoint of the semester. If circumstances beyond the student's control (illness, accident, grievous personal loss) caused the unofficial withdrawal **and can be documented**, SUNY Poly may use discretion in determining an appropriate withdrawal date.

Earned Title IV Aid

Regulation provides a formula for the calculation of the amount of Title IV aid that the student has "earned" and SUNY Poly may retain. This depends on the percentage of the enrollment period that the student has completed up to withdrawal. This percentage is calculated by dividing the number of **calendar days (not weeks)** completed by the total number of calendar days in the period. Up through the 60% point of the enrollment period, the student is eligible for the actual percentage of aid this calculation provides. For example, if a student attends for 15 days out of a 75 day semester, he/she is eligible for 20% of their total Title IV aid package ($15/75 = .20$). After the 60% point of the semester, 100% of the Title IV aid is considered "earned" by the student. The earned percentage is applied to the total amount of Title IV grant and loan assistance that was disbursed (and could have been disbursed) to the student.

Application of Unearned Percentage

Any amount in excess of the allowed percentage must be returned to the appropriate Title IV program by SUNY Poly, the student, or both. SUNY Poly must return the lesser of the unearned Title IV assistance or an amount equal to the total liability incurred by the student multiplied by the unearned percentage. Using the above example, if a student had received \$1,000 in Title IV loans and grants, and \$500 had been applied to the account and \$500 had been applied to the student, the earned portion of the aid package is \$200 ($.2 \times \1000) and the unearned portion is \$800 ($.8 \times \1000). \$800 must be returned to the Title IV programs. Of this \$800, \$500** must be returned by SUNY Poly. This may result in the student owing SUNY Poly a substantial amount of money.

** \$500 is the lesser of \$500 vs \$1590. ($\$1987.5 \text{ tuition} \times .8 \text{ unearned \% applied to institutional costs} = \1590)

Student Responsibility

Students should contact the Financial Aid Office to determine how much of their federal aid they may

have to repay the school before they withdraw.

Special Rule

The student would not need to repay amounts in excess of 50% of any grant monies received. If the \$300 the student was to return came from a Pell disbursement, the student would only need to return \$150, or not more than 50% of the grant funds received.

Order of Return of Title IV Funds

Title IV Funds must be returned in the following order:

- Unsubsidized (other than parent loans) Federal Direct Student Loan
- Subsidized Federal Direct Loan
- Federal Perkins Loan
- Federal Direct PLUS Loan
- Federal Pell Grant
- Supplemental Educational Opportunity Grant (SEOG)
- Other Title IV assistance for which a return is required

Leaves of Absence

A leave of absence is not to be treated as a withdrawal and no return of Title IV funds is calculated. A student may take a leave of absence from school for not more than a total of 180 days in any 12-month period. SUNY Poly's formal leave of absence policy must be followed in requesting the leave. The leave must be approved by SUNY Poly in accordance with this policy. **However, if the student does not return at the expiration of an approved leave, then SUNY Poly calculates the amount of Title IV grant and loan assistance that is to be returned according to the HEA provision based on the day the student withdrew.**

Billing Tuition Payment

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/billing-tuition-payment/>

A bill will be generated each semester based on a student's registration. Currently enrolled, matriculated students may either register for classes online during specified times, or register by phone through the Registrar's office. New students will register at an orientation program.

All students must confirm their attendance, and if applicable authorize their financial aid.

To keep your class schedule and housing assignment (*if applicable*), you must choose one:

- **No payment due:** confirm your attendance and automatically accept your charges online at www.sunypoly.edu/confirm.
- **Pay online:** either in full or with a payment plan. *This automatically accepts your charges.*
- **Pay by check:** Access your QuikPay e-Bill account, print out a copy of your current statement and return the lower portion with your check payment.

Course registrations and room and board assignments are not guaranteed if payment or valid deferral is received after due date. Students requiring a re-registration will be subject to a \$40 re-registration fee. Students who will not be attending are required to withdraw from their courses through the registrar's office. Failure to attend classes is not considered a formal withdrawal and liability may be incurred as a result. De-registration for lack of payment is not considered a formal withdrawal and liability may be incurred. Students who register after the initial bill due date are required to make payment at the completion of the registration process.

Acceptable payment arrangements include enrollment in the FACTS Payment Plan, financial aid or proof of third party funding, such as VESID, WIA, Veterans Deferrals or private scholarships. Students can make payment by check or credit card online through e-Cashier. Those students who have enough financial aid credit on their bill to result in a zero or credit balance, can confirm their attendance online using their Banner account.

Students who have registered for classes and decide not to attend must formally withdraw through the Registrar's Office to avoid being billed/charged for tuition and fees. Those students who register for classes after the billing due date are required to submit payment or valid deferral at the time of registration.

Financial Aid Deferrals

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/financial-aid-deferrals/>

Students who have financial aid that is already verified by the Financial Aid Office will have these financial aid credits that appear on their statement treated as credits. However, should a student be found to be ineligible for any listed aid, he/she is responsible for any unpaid balance. These credits may be estimates and are subject to change based on certification of the program regulations. Students are responsible for any balance should the estimated aid be changed or removed.

If a student has a valid form of aid not listed on the statement, it may be used as a credit if appropriate proof of award is included with your remittance. The following items are acceptable as proof: Direct Student Loans – enclose a copy of the loan award notice; Pell, SEOG, Perkins Loans, or Nursing Loans – enclose a copy of the award letter from Financial Aid; Private Scholarships – enclose a copy of the scholarship award letter. Private scholarships must be made payable directly to SUNY Poly.

If you are unsure of the status of a financial aid award, contact the Financial Aid Office at 315-792-7210. They may verify the amount of allowable deferral. **It is important to note that applying for aid does not automatically guarantee eligibility.**

Other Third Party Deferrals

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/other-deferrals/>

Armed Forces Representatives

Present properly completed federal contract authorizations forms (DD1556; DD1227) at time of payment.

Employer Sponsorship

Third party payments are acceptable only if the employer, unconditionally, agrees to pay the college upon receipt of the billing statement. No stipulations regarding the student academic performance are allowable. **Submit a letter of authorization from your employer and payment of any fees/unauthorized balances to our office prior to the billing due date.**

www.sunypoly.edu/bursar/forms

Employer Sponsorship letters should include the following information:

- Reimbursement will be made directly to SUNY Poly.
- Reimbursement will not be dependent upon the student receiving a grade.
- Payment is due from the employer within 30 days of billing. Billing will occur when the student reached 100% liability-5th week of classes for full term. If payment is not received within 30 days of this billing date, late fees will be added to the student account.
- A signature from a company representative.
- Be submitted on official company letterhead.
- Have a specified reimbursement amount noted.

NYS Employees and UUP Personnel

NYS Employees and UUP Personnel must **submit completed, approved waivers on or before payment due date. The student is responsible for payment of all tuition and fees at time of registration/payment unless the above are furnished. Subsequent authorization will entitle the student to a refund when vouchers are honored by the issuing campus. Students must use SUNY Poly's UUP form which can be found on our Human Resources webpage:**

www.sunypoly.edu/human_resources/forms

FERPA (Family Educational Rights and Privacy Act of 1974)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/ferpa/>

The Family Educational Rights and Privacy Act of 1974 prohibits the release of privileged information to anyone except authorized personnel. If a student wishes another individual such as parents or spouse to have access to privileged information regarding their account, they must complete the release form obtained from the Student Accounts Office or online at www.sunypoly.edu and return it to the Student Accounts Office before any information will be released. It is necessary to complete this release on an annual basis. It can however, be revoked at anytime when written notification is provided to the appropriate office by the student.

Required Disclosures

<http://sunypoly.edu/apps/catalog/grad/2015-2016/tuition-fees-refunds-and-billing/required-disclosures/>

Please take notice, if payment is not received for obligations due to SUNY Poly, this agency is required to use other collection alternatives. Pursuant to Chapter 55 of the Laws of 1992, State agencies may refer past-due accounts to a private collection agency, the New York State Attorney General's Office, or the New York State Department of Taxation and Finance. In addition, State agencies are required to charge interest on outstanding debt at the current corporate underpayment rate set by the Commissioner of Taxation and Finance minus four percentage points, compounded daily, on accounts considered more than 30 days past due. Chapter 55 allows State agencies to charge a fee on dishonored checks or like instruments.

In addition, the New York State Attorney General's Office and SUNY Central Administration have reached an agreement requiring the addition of any interest and collection fees. Students are liable for interest, late fees, a collection fee of up to 22%, and other penalties on past due debt. Collection fees will be added to new past due debts transferred, from this campus, to the Attorney General or private collection agencies, effective January 1995.

These terms and rates may be modified, without prior notice, as required by legislative action or Board of Trustees requirements.

General Information

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/>

- [Physical Plant](#)
 - [Parking](#)
 - [SUNY Poly Identification Card](#)
 - [University Police](#)
 - [College Association at Utica/Rome, Inc](#)
 - [Governance](#)
 - [SUNY Poly Foundation](#)
 - [Release of Student Information and Photographs](#)
 - [Student Rights and Responsibilities](#)
 - [Student Records](#)
 - [Affirmative Action/Equal Opportunity Policy](#)
 - [Servicemembers Opportunity Colleges](#)
 - [SUNY Poly Smoking Policy](#)
-

Physical Plant

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/physical-plant/>

The SUNY Poly campus is situated on more than 400 acres of wooded terrain with several small streams and ravines. Since the opening of the first building, Kunsela Hall, in 1984-85, the campus has grown to include seven major buildings and three residential complexes. In 2011, construction of three buildings was completed: a Student Center, Field House and Oriskany Residence Hall, a capital investment of nearly \$60 million. Construction of the Computer Chip Commercialization Center (Quad-C) is underway with completion expected in fall 2014. Wireless Internet access is available in all residence halls and campus buildings.

Kunsela Hall was the first and remains the largest campus building. Completed in 1985, Kunsela contains admissions and most administrative offices, and a number of faculty offices. It also houses traditional and special-purpose classrooms, a computer center, a 240-seat lecture hall, the college bookstore, and the Gannett Gallery, which hosts a variety of art exhibits.

Donovan Hall, which opened in 1988, is the central academic building. In addition to its laboratories, Donovan also features a variety of special purpose classrooms and small lecture halls, and is home to a number of academic and faculty offices. The building's architecture echoes SUNY Poly's early days when the college operated in several locations, including former manufacturing buildings in west Utica.

Facing Kunsela Hall is the Cayan Library, which opened in 2003. Housing the campus library collections and archives, the building offers private study rooms and a variety of settings for reading and studying; dozens of computer work stations in the first-floor reference area; a 30-seat instruction/ meeting room; a café; and a second-floor study room with a fireplace. It also is home to the information technology services help desk and the SUNY Poly learning center.

Near Cayan Library, Kunsela and Donovan Halls is the Student Center. Intended to promote student engagement and enhance student life programs, this Leadership in Energy and Environmental Design (LEED) Silver building gives students a unique gathering place. An open design creates flexible spaces for multi-purpose events, as well as a large food court. Other building features include a café, theater, game room, student radio station, and Student Association offices. The 43,000 square foot building is equipped with advanced audio/video systems and a wall-sized visual media display.

Located north of Donovan Hall and the Student Center is the 95,500 square foot Wildcat Field House, which features a fitness center, two full-sized basketball courts, four volleyball courts, indoor practice facilities, a running track, an expansive training room, team rooms, and athletic department offices. Completed in 2011, this facility accommodates 3,500 spectators and is home to intercollegiate athletics, intramural, and recreation programs. It is a popular venue for both campus and community events.

Just east of the Field House are a new synthetic turf field, baseball field, and softball field. Other outdoor playing fields include soccer, intramural and practice fields. A five-mile hiking/cross country course stretches across the northern and western portions of the campus, and a mile-long wooded trail is bordered by two man-made ponds near the ravine in the center of campus.

The Campus Center is located west of the academic campus core, across a pedestrian bridge above a wooded ravine. Opened in 1988, the Campus Center dining room and kitchen areas were renovated in 2011 to include seating for up to 600 students. The upper mezzanine with lounge seating and a fireplace is a popular place for students to enjoy a casual lunch. The Campus Center also features a gymnasium with a maple-floor basketball court for SUNY Poly Wildcat teams, team locker rooms, indoor exercise track, racquetball court, and saunas. The residential life and housing office is located on the second floor of the Campus Center.

To the north of the Campus Center is Oriskany Residence Hall, a residential facility primarily used for first-year students. The 85,000 square foot complex consists of a three-story main building with two smaller two-story wings. Oriskany provides living accommodations for 240 students as well as classroom spaces for special events. The campus health and wellness office and counseling center are located on the first floor of Oriskany.

To the west of the Campus Center across a second pedestrian bridge is the Adirondack Residence Hall complex. Opened in 1992, Adirondack consists of 25 two-story townhouse-style buildings, connected to form the borders of two triangular commons. Each building contains four, four-person suites in a mix of one- and two-person bedrooms. The Mohawk Residence Hall complex opened in 1996, and consists of 12 two-story townhouses with a commons area and laundry facilities. Each living room suite at Mohawk is equipped with an air-conditioning unit. Residents of Mohawk can park in three lots located west and north of the complex.

In partnership with the SUNY College of Nanoscale Science & Engineering (CNSE), the \$125 million Computer Chip Commercialization Center (Quad-C) at SUNY Poly is scheduled to be completed by the end of 2014. The 253,000 sq. ft. Quad-C facility, which will include 56,000 sq. ft. of Class 1 capable cleanroom space, will host public-private partnerships through Governor Andrew Cuomo's \$1.5 billion 'Nano Utica' initiative, a consortium spearheaded by CNSE and SUNY Poly that includes leading technology companies such as Advanced Nanotechnology Solutions Incorporated (ANS), SEMATECH, Atotech, and SEMATECH and CNSE partners, including IBM, Lam Research and Tokyo Electron.

Parking

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/parking/>

Convenient parking facilities adjacent to the SUNY Poly's buildings are provided for students and personnel.

SUNY Poly students and personnel are required to register with the University Police all motor vehicles using SUNY Poly-controlled parking facilities. Vehicles parked in SUNY Poly parking areas must have a current parking decal properly displayed. Parking fees shall be charged for motor vehicles parked within designated lots. SUNY Poly, however, assumes no liability for the property or safety of those using the facilities.

SUNY Poly Identification Card

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/identification-card/>

The SUNY Poly Card is the College's official identification card. The card is required to access essential services and facilities on campus, including the residence halls and dining facilities, library, fitness center, and more. The SUNY Poly Card also features a prepaid spending account – Wildcat Dollars – offering the cardholder a safe and convenient way to make cashless purchases on and around campus.

SUNY Poly Cards may be obtained at the office of the College Association (Room A217, Kunsela Hall). Lost or damaged SUNY Poly Cards may be obtained for a replacement fee by contacting the College Association at 315-792-7341, or in person at the College Association's office. Lost SUNY Poly Cards must first be reported to University Police. (See SUNY Poly Card policies in the [Student Handbook](#) for more information about regulations governing the use of the SUNY Poly Card).

University Police

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/university-police/>

The University Police Department is a team of professionals working with the campus community. Its goal is to provide a safe environment in which the educational mission of SUNY Poly can be fully realized.

The University Police Department is primarily service-oriented, and is tailored to meet the specialized needs of a campus community. The work of the department includes crime prevention and control, criminal investigations, traffic and parking supervision, building security, emergency first-aid treatment, the maintenance of public order, and other related activities.

The officers of the department are responsible for the enforcement of all state and local laws, as well as the rules and regulations of SUNY Poly. The officers are police officers, and obtain their powers from the Criminal Procedure Law. The department's ability to function as an independent law enforcement agency enables it to provide a sensitive, measured approach to all situations requiring police officer assistance, while still maintaining the autonomy of SUNY Poly.

The Advisory Committee on Campus Safety will provide upon request all campus crime statistics as reported to the United States Department of Education.

For more information view the [Clery Report](#) (pdf)

SUNY Poly University Police: 315-792-7222

College Association at Utica/Rome, Inc

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/college-association/>

The College Association at Utica/Rome is a not-for-profit corporation that contracts with the State University of New York to provide auxiliary services for the SUNY Poly campus. Auxiliary Services are support activities (as distinguished from primary programs of institution, research and public service) operated on a self-supporting basis, the primary purpose of which is to provide specified services to the campus community. The primary services provided by the College Association are campus identification program, food service, bookstore and vending operations. The Association's Board of Directors is composed of representatives of the Student Association, faculty, staff, and administration of SUNY Poly. The policies of the Association are established by the Board of Directors.

The Association provides administrative and accounting services for many organizations, including student government and the SUNY Poly Foundation. Any surplus income generated by the Association must be used to advance and promote the educational and benevolent purposes of the Association and SUNY Poly.

Governance

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/governance/>

The SUNY Poly governance system incorporates administrative, academic, student affairs, and planning and budget committees structured to develop policy. It provides direct input for faculty and student organizations to the general policy making process. Additional information on the governance system is contained in faculty and student handbooks and are available in the Provost's Office.

SUNY Poly Foundation

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/foundation/>

Alumni and friends established the Institute of Technology Foundation at Utica/Rome, Inc. to help preserve and improve the unique features of SUNY Poly's educational programs.

Chartered in 1974, the Institute of Technology Foundation at Utica/Rome, Inc. is a not-for-profit corporation, organized under New York State law and granted tax-exempt status by the Internal Revenue Service. The Foundation promotes, receives, invests, and disburses private gifts to SUNY Poly. It exists solely to benefit SUNY Poly and its students and faculty through the award of scholarships, the acquisition of much needed equipment, and other purposes as may be directed by the board of trustees.

The Foundation is comprised of representatives of the local community, alumni, the college council, administration, faculty, staff, and the student body. The board of trustees manages the Foundation's property, business affairs and fiscal stability.

Release of Student Information and Photographs

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/release-of-student-information/>

The public affairs office routinely prepares news releases identifying students who have been accepted to SUNY Poly, students named to the President's and Deans' lists, students who participate in regularly scheduled activities, and those who will graduate. In addition, feature stories are developed from time to time regarding special activities and noteworthy events.

Students not wishing to have their names appear in news releases may contact the public affairs office, 315-792-7113.

Photographs of students, faculty and staff taken on campus may be used to illustrate official college publications and advertisements. Students who wish to restrict the release of directory information and/or photographs should follow procedures outlined in the Student Handbook or contact the public affairs office, 315-792-7113.

“Directory information” is designated as the student's name, parent's name, address, telephone number, date and place of birth, major field of study, full- or part-time status, participation in officially recognized activities and sports, weight and height of members of athletic teams, dates of attendance, degrees and awards received, most recent previous school attended, e-mail address, and photograph.

Student Rights and Responsibilities

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/student-rights-responsibilities/>

Students at SUNY Poly are expected to conduct themselves in a manner which will not infringe on the freedom of others in the campus community, or bring discredit to themselves, SUNY Poly, or to other students. Students are expected to know the [Code of Conduct](#) and other processes and procedures as outlined in the [Student Handbook](#). Students who violate specified standards of good conduct may be subject to discipline in accordance with appropriate due process.

Student Records

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/student-records/>

The SUNY Poly policy on access to and release of student records conforms to Public Law, Family Educational and Privacy Act of 1974 (refer to the [Student Handbook](#)).

Affirmative Action/Equal Opportunity Policy

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/affirmative-action/>

Consistent with the policy of the State University of New York, SUNY Poly does not discriminate on the basis of race, sex, color, creed, age, national origin, disability, marital status, status as a disabled veteran, veteran of the Vietnam Era, recruitment of students, recruitment and employment of faculty and staff, or the operation of any of its programs and activities as specified by federal and state laws and regulations.

Additionally, discrimination on the basis of sexual orientation and the provision of any services or benefits by state agencies and in any matter relating to employment is prohibited by the Governor's Executive Order No. 28. The Policies of the State University of New York Board of Trustees also requires that personal preferences of individuals which are unrelated to performance, such as sexual orientation, shall provide no basis for judgment of such individuals.

The Director of Human Resources is designated coordinator in SUNY Poly's continuing compliance with relevant federal and state laws and regulations with respect to non-discrimination. The Director of Human Resources may be consulted during regular business hours in Kunsela Hall, or by calling 315-792-7191. Questions concerning Section 504 of the Rehabilitation Act of 1973, as amended, should be directed to the 504 Coordinator in the Disability Services Office in Kunsela Hall, or by calling 315-792-7170.

Servicemembers Opportunity Colleges

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/servicemembers/>

SUNYIT has been designated as an institutional member of Servicemembers Opportunity Colleges (SOC), a group of over 400 colleges and universities providing voluntary postsecondary education to members of the military throughout the world. As a SOC member, SUNYIT recognizes the unique nature of the military lifestyle and has committed itself to easing the transfer of relevant course credits, providing flexible academic residency requirements, and crediting learning from appropriate military training and experiences. SOC has been developed jointly by educational representatives of each of the Armed Services, the Office of the Secretary of Defense, and a consortium of 13 leading national higher education associations. It is sponsored by the American Association of State Colleges and Universities (AASCU) and the American Association of Community and Junior Colleges (AACJC).

SUNYIT Smoking Policy

<http://sunypoly.edu/apps/catalog/grad/2015-2016/general-information/smoking-policy/>

Smoking is allowed in designated outdoor areas only. SUNYIT recognizes the hazards of smoking and fully acknowledges the rights of non-smokers as well as smokers. For complete details of the policy, please reference our website: www.sunyit.edu.

Accountancy (MS)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/ms-accountancy/>

Offered Online Only

Overview

The Master of Science in Accountancy is registered with New York State to satisfy the 150 hour licensure education requirement. The program is primarily intended for students who have the equivalent of an undergraduate accounting degree and are looking to increase their knowledge in the accounting field to either advance in their professional accounting career or to qualify to sit for the CPA (Certified Public Accountant) exam. Students who may not have a background in accounting but desire an opportunity to broaden their capabilities and specialize in this area are afforded the option to do so with this program. These students would be required to include additional preparatory work in their program and would do that under the guidance of the program coordinator.

The MS program accommodates both full-time and part-time students. Full-time students can complete the program within an 18 month period. Part-time completion will vary based on total number of credits taken each term. A program of study will be developed with the program coordinator which responds to student needs and the department's plan for course scheduling.

Mission Statement

The Department of Business Management is committed to offering high quality management and professional education that is focused on meeting the needs of students and organizations in the Mohawk Valley, New York State, and the global community. We are dedicated to providing undergraduate, graduate, and non-degree programs that are responsive to the dynamic business environment and accessible to qualified students. The Department of Business Management is committed to continuously improving its programs through learning assurance, scholarship, and service.

Accreditation

The Department of Business Management is accredited by AACSB International (Association to Advance Collegiate Schools of Business), an elite distinction achieved by less than 5% of the world's academic business programs. AACSB is the premier accrediting agency of collegiate business and accounting programs worldwide.

Career Paths

Graduates of the MS Accountancy program can pursue careers in the following areas:

- Public accounting (working as a Certified Public Accountant)
- Corporate accounting (working as an accountant for a corporation or other for-profit company)
- Not-for-profit accounting
- Government accounting

Pre-Requisite Undergraduate Course Requirements

A grade of "C" or better is required in all pre-requisite courses.

Intermediate Accounting I & II

Managerial or Cost Accounting

Tax Accounting

Advanced Accounting (upper division)

Auditing (upper division)

Commercial (Business) Law

Computer Science

Business Statistics

Economics

Two Business Elective Courses

- The need for completion of pre-requisite undergraduate coursework is determined in consultation with the Graduate Admissions Office and the program coordinator.
- Students must satisfy all accounting pre-requisite courses (***identified by bold italic above***) prior to taking any graduate-level accounting courses.

Program Requirements

The MS in Accountancy consists of **33 credit hours** distributed as follows:

Accounting Core Courses: 15 credit hours

Business Core Courses: 15 credit hours

Electives: 3 credit hours

Accounting Core Courses (15 credit hours)

- ACC 585 Financial Reporting/Analysis
- ACC 611 Advanced Income Tax Research
- ACC 630 Fund Accounting
- ACC 650 Advanced Auditing Theory
- ACC 685 Advanced Financial Accounting Theory

Business Core Courses (15 credit hours)

- FIN 525 Financial Management Problems
- FIN 685 Seminar in Accounting & Finance
- BUS 505 Multinational Economics of Technology
- MGS 511 Quantitative Business Analysis
- MIS 515 Management Information Systems

Electives (3 credit hours)

Complete any one graduate course offered by the Department of Business Management, not including the above core courses and ACC 520 (Accounting for Managers).

Degree Requirements Overview & Program Notes

- Unless otherwise noted, all graduate courses are 3 credit hours.
 - All students must have a GPA of 3.0 or higher to graduate.
 - Over the course of their studies, students can only apply two “C” grades in courses taken toward the degree.
 - Students may transfer up to six credit hours, if applicable, from another graduate program.
 - Students must satisfy all accounting pre-requisite courses (*identified by bold italic above*) with a grade of C or better prior to taking any graduate-level accounting courses.
 - Students must maintain continuous registration, equal to or greater than one credit while completing graduate degree requirements. MS Accountancy students can do this by registering for CMT 600 - Continuous Registration. This may be taken up to six semesters at which time it is expected that all program requirements will have been met.
-

Computer and Information Science (MS)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/ms-cis/>

Offered On Campus Only

Overview

The Master of Science in Computer and Information Science provides a general computer science education emphasizing both theoretical and applied aspects. Graduates have been very successful both in the workforce and further Ph.D. level study.

The Computer and Information Sciences department is one of the largest within SUNY Poly. The twelve full-time faculty have diverse areas of expertise and support three graduate and four undergraduate programs while pursuing research and scholarly activities in their respective areas of interest. Many faculty and students maintain a close working relationship with researchers at the Rome Research Site of the Air Force Research Laboratory located about ten miles west of the campus.

The program regularly offers a variety of courses in programming language and software engineering, systems and architectures, algorithms and theory, and artificial intelligence and modeling. Courses are complemented by a number of state-of-the-art laboratories that employ a variety of computing environments. The program is also supported by extensive library holdings. Hundreds of journal titles maintained by the Cayan Library directly support the graduate program in computer science.

The Master's program in Computer and Information Science is designed for students seeking a quality education in preparation for employment, career advancement, or further graduate study. It is designed to provide a broad overview of the major areas of the discipline, coupled with a specialization in at least one of the following areas: **software engineering, systems & architectures, algorithms & theory, and artificial intelligence & modeling**. Course offerings stress the principles and problem-solving methodology required by computing professionals working in industry, business and education.

The MS program accommodates both full-time and part-time students. Full-time students can complete the program within an 18 month period. Part-time completion will vary based on total number of credits taken each term. A program of study will be developed with the program coordinator which responds to student needs and the department's plan for course scheduling.

Career Paths

The MS in Computer Sciences allows students to advance their careers and increase their depth of understanding in this dynamic and growing field. Our graduates go on to rewarding careers in the field with job titles such as Computer Scientist, Software Engineer, Senior Programmer, Systems Administrator, Research Engineer, Systems Engineer, and Technical Consultant. Some of the local companies that our graduates join include Assured Information Security, BAE Systems, Booz Allen Hamilton, CACI, ITT Industries, and Northrop Grumman Corporation.

Lab Facilities

The Computer Science Department maintains its own academic computing network tailored to support

our programs and provide an open environment for student experimentation and exploration. Departmental servers support the Computer Science Department and student web sites (www.cs.sunyit.edu), central file storage, remote access, databases, software repositories, streaming video, and student project virtual machines. Our computing environment is managed by professional staff and student administrators. Students interested in the fields of network or systems administration who desire an opportunity to further develop their skills prior to graduation should stop by our workroom.

Eight labs are available to students containing a mix of operating systems and hardware and interconnected on a high speed network. Primary departmental classroom PC labs are updated annually to ensure the latest hardware is available for instruction.

DogNET UNIX Lab (Kunsela C012) - provides access to UNIX workstations. Twenty-Five workstations running the Gentoo Linux operating system can be found in the C012 classroom lab, provide access to many programs for software development, Internet access, multimedia applications, publishing, etc. This lab, used for computer science courses in programming languages, operating systems, networking, web development, and system administration, is open for general use when not being used for classes.

DogNET special projects lab (Donovan 1190) - provides a large assortment of workstations to support student research and projects. Any student may request workspace and networked hardware to complete a course or individual project.

MS Windows Lab (Kunsela C014 & C122) - provides access to the MS Windows operating system and software. The C014 classroom lab contains twenty-five workstations and is open for use when classes are not in session. The C122 open lab contains 6 workstations and is ideal for small groups working collaboratively on projects. These labs support instruction and experimentation in object-oriented programming, client-server and distributed computing (networking, system administration and interoperability with other platforms), collaborative computing (web development, videoconferencing, multimedia). Programming environments supported include SUN Java, Visual Studio NET (C#, J#, C++, Visual Basic), Fortran90, Prolog, LISP, ML-ObjectCaml, APL. Application software includes Microsoft Office, Sharepoint, Publisher, Visio, Matlab, Maple and several Adobe titles.

Kunsela 24 Hour Open Lab (Kunsela B118) - provides access to resources found in other Computer Science labs 24 hours a day, 7 days a week while classes are in session. Current hardware includes ten MS Windows workstations, two Gentoo Linux workstations, and a multimedia station with flatbed scanner and blu-ray writer.

Pre-Requisite Courses and Background

- Computing Fundamentals
- Computer Organization (Machine Structures)
- Object Oriented Programming
- Data Structures
- Discrete Math

- Calculus
- Statistics/Probability

The need for completion of pre-requisite coursework is determined in consultation with the Graduate Admissions Office and the program coordinator.

Program Requirements

The M.S. in Computer and Information Science consists of **33 credit hours**. Three must include:

Area Courses: (12 credit hours)

Depth Courses: (9-12 credit hours)

General Electives: (6 credit hours)

Thesis/Project: (3-6 credit hours)

Area Courses (12 credit hours)

Complete one course in each of the following four areas:

Software Engineering

- CS 510 Programming Languages
- CS 511 Formal Methods
- CS 512 Software Engineering
- CS 518 Special Topics in Software Engineering

Systems & Architectures

- CS 520 Computer Architecture
- CS 521 Operating Systems
- CS 522 Computer Networks
- CS 523 Parallel Computing
- CS 524 Distributed Systems
- CS 528 Selected Topics in Systems

Algorithms & Theory

- CS 530 Algorithms & Complexity
- CS 531 Automata, Computability and Formal Languages
- CS 532 Cryptography and Data Security
- CS 538 Special Topics in Algorithms

Artificial Intelligence & Modeling

- CS 540 Artificial Intelligence
- CS 541 Databases
- CS 542 Machine Learning
- CS 543 Systems Theory
- CS 548 Special Topics in AI and Modeling

Depth Courses (9-12 credit hours)

Complete two additional courses from one of the four areas above and one additional course from a different area. A fourth course from any area is required if a project is elected instead of a thesis.

Note: Computer Science graduate courses that are not assigned to one of the areas above (e.g., bridge courses (CS 500, CS 502, CS 503, CS 505), CSC 507, CS 598, CS 599) cannot be applied to the depth requirement.

General Electives (6 credit hours)

Two graduate courses selected from:

- (a) graduate computer and information science courses (with the CS prefix) other than bridge courses (not CS 500, CS 502, CS 503, or CS 505)
- (b) other graduate courses that are pre-approved by the CS Department via the submission of an Academic Petition (each petition shall include the student's justification and supporting documentation (syllabus, catalog description, etc.) for accepting the relevant course; the CS Department will consider each petition on a case-by-case basis.

Thesis/Project (3-6 credit hours)

CS 598 Project (1-3 credits) OR
CS 599 Thesis (6 credits)

Guidelines and requirements for the project or thesis are provided to students by their faculty adviser.

Degree Requirements Overview & Program Notes

- Unless otherwise noted, all graduate courses are 3 credit hours.
- All students must have a GPA of 3.0 or higher to graduate.
- Over the course of their studies, students can only apply two “C” grades in courses taken toward the degree.
- Students may transfer up to six credit hours, if applicable, from another graduate program. Note: All transfer courses must be approved by the CS Dept; courses are usually submitted for transfer consideration prior to matriculation.
- Students may repeat at most two courses in which a “C” grade or less was received.
- Students must maintain continuous registration, equal to or greater than one credit while working on their final thesis or project. MS Computer Science students can do this by registering for either CS 598 or CS 599, as appropriate, with their advisor for one credit. Students may do this for up to six semesters at which time it is expected that all program requirements will have been met.

Data Analysis (CAS)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/certificate-for-advanced-study-in-data-analysis/>

Overview

The post-bachelor's Certificate for Advanced Study in Data Analysis provides both a practical and theoretical foundation for professionals who need to understand randomness and variability, its causes and consequences. Students will learn how to design efficient and effective experiments and observational studies in order to answer questions they find interesting. The program works students through important probability models and the underlying mathematics to understand random phenomena. Software is used to analyze data and make effective presentations of results to different audiences.

The program is designed for students who have a bachelor's degree in any field. In addition, a background in mathematics including calculus I, II, III, and linear algebra/matrix methods is required.

Career Paths

Enrolled students are provided with the opportunity to expand their analytical and presentation skills in this dynamic and growing field, resulting in increased career advancement opportunities. Actuaries, electrical engineers, computer scientists and quality and system engineers all need strong foundations in probability and data analysis and would benefit professionally from this program.

Program Requirements

The CAS in Data Analysis consists of **12 credit hours**:

- MAT 505 Introduction to Probability
- MST 570 Design & Analysis of Experiments
- STA 510 Regression and Analysis of Variance
- MST 680 Reliability and Quality Assurance **OR** MAT 550 Time Series

Students are required to consult with a faculty member to develop an academic plan.

Degree Requirements Overview & Program Notes

- All graduate courses are 3 credit hours.
- All students must have a 3.0 GPA or higher to graduate.

Information Design and Technology (MS)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/ms-idt/>

Offered Online Only

Overview

The Master of Science in Information Design and Technology (IDT) offers an interdisciplinary examination of the role of digital information and emerging media within contemporary culture and communication. Students develop a specific area of practice or research to suit their unique professional or academic goals. Through practice, design, theory exploration and research, students examine the complex relationship between diverse types of information and the technologies that are used to work with and communicate that information. The IDT program combines historical perspective, technical exposure and design instruction to create a broad multi-dimensional understanding of the social and cultural impact of new and emerging information technology.

The IDT program, offered exclusively online through asynchronous classes, accommodates both full-time and part-time students. Full-time students can complete the program within a 24 month period. Part-time completion will vary based on the total number of credits taken each term.

Information about the IDT program is available at <https://sunypoly.edu/graduate/idt>.

Career Paths

The skills and knowledge taught in the IDT program are interdisciplinary and can be adapted to many fields and careers. The following are examples of the types of work graduates of the IDT program can do:

- Instructional Media/Educational Technology
- Teaching/Training using Information Technology
- Social Media Strategist
- Web Archivist
- Digital Strategist
- Information Designer for a wide variety of fields
- Internet Researcher
- Web Developer and Designer
- Professional Communicator
- Public Relations
- College Admissions
- Digital Exhibitions and Publications
- Information Help Desk
- Blog/Wiki Specialist

Program Requirements

The M.S. in Information Design and Technology consists of **33 credit hours** distributed as follows:

IDT Core Courses: 12 credit hours

IDT Electives: 12 credit hours

Unrestricted Electives: 6 credit hours

Thesis/Project: 3 credit hours

IDT Core Courses (12 credit hours)

- IDT 501 Social Information Theory
- IDT 507 Information Technology
- IDT 534 Information Design
- IDT 530 Research Methods for Information Design and Technology*

** With permission of an IDT adviser, students may choose IDT524, ANT531, TEL598, or CSC 507 in lieu of IDT 530. With an adviser's approval students may be able to transfer a research methods course from another graduate program.*

IDT Electives (12 credit hours)

Complete 4 courses from the following:

- IDT 503 Human Factors in Information Design
- IDT 505 Computing Environments
- IDT 519 Gamification
- IDT 520 Gender and Technology
- IDT 521 Global Communication
- IDT 522 Computer-Supported Cooperative Work
- IDT 523 Digital Narratives
- IDT 524 Websphere Analysis
- IDT 531 Technical Editing
- IDT 535 Typographic Design and Communication
- IDT 536 Graphic Design
- IDT 541 Instructional Design
- IDT 545 Informational Technology and Organizational Change
- IDT 551 Evaluating Technology
- IDT 553 Principles and Projects in New Media
- IDT 554 Web Development and Design
- IDT 555 Ethical and Legal Issues of the Information Age
- IDT 585 Seminar in Emerging Technologies
- IDT 590 Topics in Information Design and Technology*
- IDT 591 Independent Study
- IDT 592 Internship

** Students may take additional sections of IDT 590 as long as the topics covered are not the same.*

Unrestricted Electives (6 credit hours)

In consultation with an adviser, students choose two additional graduate-level electives or an internship and one elective. These can be additional IDT courses or courses from another accredited graduate program that are approved by an adviser.

Thesis/Project (3 credit hours)

- IDT 599 Thesis/Project

Working with faculty member teaching the course or an adviser, students either complete a research-based thesis, or design and implement a digital media project.

Degree Requirements Overview & Program Notes

- Students must receive a “B” (3.0) or better in all core courses.
- Unless otherwise noted, all graduate courses are 3 credit hours.
- Over the course of their studies, students can only apply two “C” grades in courses taken toward the degree.
- All students must have a GPA of 3.0 or higher to graduate.
- Students may transfer up to six credit hours, if applicable, from another graduate program.
- Students must maintain continuous registration, equal to or greater than one credit while working on their final thesis or project. MS IDT students can do this by registering for CMT 600 - Continuous Registration. This may be taken up to six semesters at which time it is expected that all program requirements will have been met.

Nanoscale Engineering

<http://sunypoly.edu/apps/catalog/grad/2015-2016/nanoscale-engineering/>

Offered On Albany Colleges of Nanoscale Science & Engineering Campus Only

Overview

SUNY Poly CNSE's cross-disciplinary Ph.D. and M.S. curricula integrate the fundamental principles of physics, chemistry, computer science, biology, mathematics, and engineering with the cross cutting fields of nanosciences, nanoengineering, nanotechnology, and nanoeconomics. A comprehensive portfolio of courses provides fundamental knowledge in the design, growth, and properties of nanomaterials (including metals, semiconductors, polymers, and chemical and biological materials). This includes the integration, processing, testing and qualification of these materials in integrated nanocircuitry, micro- and nanosystems and sensors, and integrated optics.

SUNY Poly CNSE offers the following graduate programs leading to Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees:

- M.S. in Nanoscale Science
- Ph.D. in Nanoscale Science
- M.S. in Nanoscale Engineering*
- Ph.D. in Nanoscale Engineering*

SUNY Poly CNSE offers the following graduate program leading to Doctor of Philosophy (Ph.D.) and Medical Doctor (M.D.) (SUNY Downstate Medical Center) degree:

- M.D./Ph.D. in Medicine and Nanoscale Science or Engineering

*The M.S. and Ph.D. in Nanoscale Engineering do not lead to New York State licensure for practicing engineers in civil construction, surveying or the trades.

Nanoscale Engineering Program Leading to the Master of Science Degree

The M.S. degree programs provide a solid foundation in the emerging interdisciplinary fields of Nanoscale Science and Nanoscale Engineering in preparation for entry into the workforce or for further graduate study and research leading to a doctoral degree. Selected M.S. science and engineering tracks pertain to the nanoelectronic, optoelectronic, optical, nanosystems, energy, and nanobiological fields.

Students accepted into one of the CNSE M.S. degree programs are required to construct a preliminary program of graduate study with the assistance of their academic advisor at the completion of the first year of study.

Degree Requirements of the M.S. in Nanoscale Engineering (30 credits)*

1. NNSE coursework (18 credits): Six credits as advised relevant to a CNSE Nanoscale Engineering

- track and twelve credits of Master's level research (NNSE 698 or NNSE 699)
2. Completion of courses from the "Foundations of Nanotechnology" course sequence (9 credits)
 3. Seminar/External Courses as advised (3 credits)
 4. Completion of an original research project that represents a significant scientific contribution to one of the appropriate CNSE Nanoscale Engineering tracks that leads to the submission of an acceptable Master's thesis. If the student successfully completes an appropriate portion of the Ph.D. preliminary written examination, a Master's research project report can be substituted for the formal thesis.

Foundations of Nanotechnology Course Sequence

Nanotechnology is highly interdisciplinary, building upon core competencies from many traditional disciplines, including materials science, chemistry, physics, biology and electrical engineering. As a consequence, and because the undergraduate backgrounds of CNSE students are equally diverse, a "one size fits all" approach to course content and design is neither practical nor desirable.

To address these issues, a sequence of modular core courses, "Foundations of Nanotechnology," has been designed to provide students with unified core competencies, as well as to prepare them for their more specialized advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering tracks.

"Foundations" represents a modular four-course sequence that has been specifically designed to provide the base scientific skill set required by the varied undergraduate backgrounds of students entering CNSE. The parallel and complementary modular platform of the "Foundations" sequence responds to the need for simultaneous CNSE course content delivery to students possessing undergraduate degrees in Physics, Chemistry, Materials Science, Mathematics, Biology, Chemical Engineering, Electrical Engineering, and Mechanical Engineering.

The "Foundations" sequence serves an analogous role for practicing professionals in the fields of nanoscale science, engineering, and nanotechnology that have or plan to enroll in CNSE degree programs.

The "Foundations of Nanotechnology" sequence consists of four courses Foundations of Nanotechnology I – IV (NNSE 506, 507, 508 and 509), with two offered in the fall semester and two in the spring semester. Each course consists of coordinated modules specifically designed and sequenced by CNSE faculty to provide the fundamental academic acumen and core competencies necessary for students entering the fields of Nanoscale Science and Nanoscale Engineering.

Nanoscale Engineering Program Leading to the Doctor of Philosophy Degree

The purpose of CNSE's Ph.D. programs is to prepare the student for a career as a skilled, productive research scholar in nanosciences or nanoengineering. The programs are intended for students with career interests in industrial research and development, academic scholarship and research, or government research agencies.

The Ph.D. programs are designed to develop the student's ability to discover fundamental knowledge pertaining to:

- The design, growth, and properties of nanomaterials, including metals, semiconductors, polymers, and chemical and biological materials
- The integration, processing, testing, and qualification of these materials in nanocircuitry, nanosystems, nanosensors, and integrated nano-optical systems

Significant emphasis within each discipline is placed upon the science and technological know-how for atomic scale material modeling, characterization, and metrology to develop the fundamental skills necessary for independent and original research.

Students accepted into one of the CNSE Ph.D. programs are required to construct a preliminary program of graduate study with the assistance of their academic advisor at the completion of the first year of study. This preliminary program will consist of the student's choice of concentration (specialization) and a preliminary concentration course curriculum.

CNSE's Nanoscale Engineering program provides corresponding skill and expertise in the design, fabrication, and integration of nanoscale devices, structures, and systems for the development and deployment of emerging nanotechnologies.

Degree Requirements of the Ph.D. in Nanoscale Engineering *

1. Students admitted with an appropriate Bachelor's degree shall complete 60 credit hours of academic coursework in partial fulfillment of the Ph.D. degree requirements.

1a. Thirty-six (36) credit hours of NNSE coursework at the 500 level or higher with the following provisions:

- 1.a.i. Completion of the 12 credit-hour (four-course) "Foundations of Nanotechnology" sequence.

Nanotechnology is highly interdisciplinary, building upon core competencies from many traditional disciplines, including materials science, chemistry, physics, biology and electrical engineering. As a consequence, and because the undergraduate backgrounds of CNSE students are equally diverse, a "one size fits all" approach to course content and design is neither practical nor desirable.

To address these issues, a sequence of modular core courses, "Foundations of Nanotechnology," has been designed to provide students with unified core competencies, as well as to prepare them for their more specialized advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering tracks.

"Foundations" represents a modular four-course sequence that has been specifically designed to provide the base scientific skill set required by the varied undergraduate backgrounds of students entering CNSE. The parallel and complementary modular platform of the "Foundations" sequence responds to the need for simultaneous CNSE course content delivery to students possessing undergraduate degrees in Physics, Chemistry, Materials Science, Mathematics, Biology, Chemical Engineering, Electrical Engineering, and Mechanical Engineering.

The "Foundations" sequence serves an analogous role for practicing professionals in the fields of

nanoscale science, engineering, and nanotechnology that have or plan to enroll in CNSE degree programs.

The "Foundations of Nanotechnology" sequence consists of four courses Foundations of Nanotechnology I – IV (NNSE 506, 507, 508 and 509), with two offered in the Fall semester and two in the Spring semester. Each course consists of coordinated modules specifically designed and sequenced by CNSE faculty to provide the fundamental academic acumen and core competencies necessary for students entering the fields of Nanoscale Science and Nanoscale Engineering.

1.a.ii. Completion of at least 9 credit hours of 600 or higher level coursework as advised relevant to a CNSE Nanoscale Engineering track.

1b. Nine (9) credit hours of seminar/external courses.

1c. Fifteen (15) credit hours of Ph.D. dissertation research.

2. Students admitted with an appropriate Master's degree shall complete 36 credit hours of academic coursework in partial fulfillment of the Ph.D. degree requirements.

2.a. Fifteen (15) credit hours of NNSE coursework at the 500 level or higher with the following provisions:

2.a.i. Completion of that portion of the "Foundations of Nanotechnology" course sequence for which the student did not receive course equivalency upon matriculation into the Nanoscale Engineering Ph.D. program.

2.a.ii. Completion of at least 6 credit hours of 600 or higher level coursework as advised relevant to a CNSE Nanoscale Engineering track.

2.b. Six (6) credit hours of seminar/external courses.

2.c. Fifteen (15) credit hours of Ph.D. dissertation research.

3. Preliminary Written Examination for Formal Admission to the Nanoscale Engineering Ph.D. program:

Admission to the Nanoscale Engineering Ph.D. program requires successful completion of a preliminary written examination covering fundamental topics in Nanoscale Engineering. The exam will be offered yearly and must be passed within two attempts to maintain academic standing in the Nanoscale Engineering Ph.D. program.

4. Preliminary Oral Examination for completion of the Nanoscale Engineering Ph.D. degree:

Normally, within 2 semesters of passing the preliminary written examination, students in the Nanoscale Engineering Ph.D. program must take and pass a preliminary oral examination relevant to a Nanoscale Engineering track. Successful completion of the preliminary oral examination is determined by a five-member oral examination committee. This committee consists of at least three members of the CNSE

faculty (including the student's advisor who serves as chair) and at least one outside member (SUNY Polytechnic Institute faculty outside CNSE, or CNSE research partner). Upon passing this examination the student advances to candidacy for the Nanoscale Engineering Ph.D.

5. Submission and successful defense of a formal Ph.D. Dissertation:

Within one semester of passing the preliminary oral examination, the candidate must submit to his or her Ph.D. dissertation committee a proposal outlining an original Nanoscale Engineering research project constituting a Ph.D. dissertation. The candidate must describe the motivation and background for the dissertation topic; the critical milestones for completing relevant research tasks; and a statement of work outlining a specific research plan. The five-person Ph.D. dissertation committee consists of at least three members of the CNSE faculty (including the candidate's advisor) and at least one outside member (SUNY Polytechnic Institute faculty outside the CNSE, or a CNSE research partner).

Upon timely completion of the Ph.D. dissertation research project the candidate prepares a dissertation and submits the final draft to the dissertation committee. The committee ascertains the suitability of the draft and recommends amendments which the candidate must complete before the final defense is scheduled. Once approved by the committee, permission is granted for the candidate to present and defend his or her dissertation in a public seminar.

6. Ph.D. Publication Requirement:

For successful completion of the Ph.D. degree requirements, students are also required to be the first author on a minimum of two scientific publications that have already been accepted for publication in recognized peer-reviewed technical journals that are related to their concentration area.

**The Ph.D. in Nanoscale Engineering does not lead to New York State licensure for practicing engineers in civil construction, surveying or the trades.*

Nanoscale Engineering tracks for the M.S. and Ph.D. degree program:

Nanoelectronics Engineering and Technology: Design, processing, fabrication, testing, and integration of nanoelectronic structures and devices for incorporation in emerging gigascale and terascale integrated circuit systems and architectures. Development of integrated process modules for novel nanoelectronics materials.

Optoelectronics and Photonics Nanoengineering: Design, fabrication, testing, and integration of integrated optoelectronic and photonic device structures using compound semiconductors. Testing and hybridization of optoelectronic/photonic devices in system-on-a-chip (SOC) and nano-electro-mechanical system (NEMS) architectures.

Spintronics Nanoengineering: Design, fabrication, testing, and integration of spintronic device structures. Testing and hybridization of spintronic devices, including incorporation in system-on-a-chip (SOC) and nano-electro-mechanical system (NEMS) architectures.

NanoSystem Engineering and Technology: Design, fabrication, packaging, and testing of nano/micro-

electrical and nano/micro-opto-electrical mechanical components and nano/micro-fluidic components for incorporation in SOC architectures and systems.

Nanoengineering in Energy & Environmental Technologies: Development of nanotechnology engineering concepts for new and emerging applications in energy and environmental areas including fuel cells, solar cells, superconductors, sensors, power electronics, and supercapacitors.

Nanolithography Engineering and Technology: Design, development and engineering of nanolithography systems, components, and processes. Development and engineering of materials and metrologies for nanolithography.

Nanobiology Engineering and Technology: Design, development and engineering of nanobiological systems, components, and processes. Development and engineering of biomaterials and nano-bio-systems for SOC, nanomedicine, and health applications.

Combined M.D./Ph.D. Program in Medicine and Nanoscale Sciences or Combined M.D./Ph.D. Program in Medicine and Nanoscale Engineering

Offered by the College of Nanoscale Science and Engineering of the SUNY Polytechnic Institute (CNSE) and SUNY Downstate College of Medicine (Downstate), this first-of-its-kind combined degree program provides pioneering education and training in both medicine and nanoscale science and engineering research, preparing a new generation of students for exciting 21st century careers as world-class research physicians in the emerging science and practice of nanomedicine.

CNSE is the first college in the world dedicated to research, development, education, and deployment in the emerging disciplines of nanoscience, nanoengineering, nanobioscience, and nanoeconomics. Downstate is one of SUNY's four academic health science centers and has unique research strengths in neuroscience, cardiovascular medicine, and live tissue imaging that are ideal platforms for developing medically relevant nanotechnology in the areas of biosensors, drug delivery, and diagnostics. Together CNSE's world renowned research and education in nanotechnology and SUNY Downstate Medical Center's outstanding medical training enable students to gain experience in developing and applying cutting-edge technologies to the health care challenges of today and tomorrow. This combined clinical scientist educational program provides premier hands-on training in the emerging field of nanomedicine. Students complete an integrated course of study alternating between the College of Nanoscale Science and Engineering and the SUNY Downstate Medical Center. This course of study is designed for completion within seven years and will result in the award of an MD degree from SUNY Downstate College of Medicine and a PhD in either Nanoscale Science or Nanoscale Engineering from the SUNY Polytechnic Institute.

Career Paths

Students who earn an M.S. or PhD. in nanoscale science or nanoscale engineering generally enter the workforce in high technology industries focusing on semiconductor manufacturing processes and fabrication, and also work in related growing nanotechnology fields. Recent graduates have been hired by ASML, Atotech, IBM, Global Foundries, Intel, Glauconix, AMRI, Tokyo Electron (TEL), Novellus Systems, Northrup Grumman, Superpower, Nuclea biotechnologies, Entegris among others. Our

graduates have also obtained post-doctoral fellowships Colleges of Nanoscale Science and Engineering, National Institute of Standards and Technology (NIST), Harvard University Medical College, University of Texas, Austin.

Lab Facilities

The laboratory facilities at CNSE are unprecedented and include the latest technologies and tools available for research in these fields. A full list of the facilities tools and labs can be found at <http://www.sunycnse.com/WorldClassResources.aspx> and at CNSE individual faculty websites.

Nanoscale Science

<http://sunypoly.edu/apps/catalog/grad/2015-2016/nanoscale-science/>

Offered On Albany Colleges of Nanoscale Science & Engineering Campus Only

Overview

SUNY Poly Colleges of Nanoscale Science and Engineering's (CNSE) cross-disciplinary Ph.D. and M.S. curricula integrate the fundamental principles of physics, chemistry, computer science, biology, mathematics, and engineering with the cross cutting fields of nanosciences, nanoengineering, nanotechnology, and nanoeconomics. A comprehensive portfolio of courses provides fundamental knowledge in the design, growth, and properties of nanomaterials (including metals, semiconductors, polymers, and chemical and biological materials). This includes the integration, processing, testing and qualification of these materials in integrated nanocircuitry, micro- and nanosystems and sensors, and integrated optics.

SUNY Poly CNSE offers the following graduate programs leading to Master of Science (M.S.) and Doctor of Philosophy (Ph.D.) degrees:

- M.S. in Nanoscale Science
- Ph.D. in Nanoscale Science
- M.S. in Nanoscale Engineering*
- Ph.D. in Nanoscale Engineering*

SUNY Poly CNSE offers the following graduate program leading to Doctor of Philosophy (Ph.D.) and Medical Doctor (M.D.) (SUNY Downstate Medical Center) degree:

- M.D./Ph.D. in Medicine and Nanoscale Science or Engineering

*The M.S. and Ph.D. in Nanoscale Engineering do not lead to New York State licensure for practicing engineers in civil construction, surveying or the trades.

Nanoscale Science Program Leading to the Master of Science Degree

The M.S. degree programs provide a solid foundation in the emerging interdisciplinary fields of Nanoscale Science and Nanoscale Engineering in preparation for entry into the workforce or for further graduate study and research leading to a doctoral degree. Selected M.S. science and engineering tracks pertain to the nanoelectronic, optoelectronic, optical, nanosystems, energy, and nanobiological fields.

Students accepted into one of the CNSE M.S. degree programs are required to construct a preliminary program of graduate study with the assistance of their academic advisor at the completion of the first year of study.

Degree Requirements of the M.S. in Nanoscale Science (30 credits)

1. NNSE coursework (18 credits): Six credits as advised relevant to a CNSE Nanoscale Science Track and twelve credits of Master's level research (NNSE 697 or NNSE 699)
2. Completion of courses from the "Foundations of Nanotechnology" course sequence (9 credits)
3. Seminar/External Courses as advised (3 credits)
4. Completion of an original research project that represents a significant scientific contribution to one of the appropriate CNSE Nanoscale Science tracks that leads to the submission of an acceptable Master's thesis. If the student successfully completes an appropriate portion of the Ph.D. preliminary written examination, a Master's research project report can be substituted for the formal thesis.

Foundations of Nanotechnology Course Sequence

Nanotechnology is highly interdisciplinary, building upon core competencies from many traditional disciplines, including materials science, chemistry, physics, biology and electrical engineering. As a consequence, and because the undergraduate backgrounds of CNSE students are equally diverse, a "one size fits all" approach to course content and design is neither practical nor desirable.

To address these issues, a sequence of modular core courses, "Foundations of Nanotechnology," has been designed to provide students with unified core competencies, as well as to prepare them for their more specialized advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering tracks.

"Foundations" represents a modular four-course sequence that has been specifically designed to provide the base scientific skill set required by the varied undergraduate backgrounds of students entering CNSE. The parallel and complementary modular platform of the "Foundations" sequence responds to the need for simultaneous CNSE course content delivery to students possessing undergraduate degrees in Physics, Chemistry, Materials Science, Mathematics, Biology, Chemical Engineering, Electrical Engineering, and Mechanical Engineering.

The "Foundations" sequence serves an analogous role for practicing professionals in the fields of nanoscale science, engineering, and nanotechnology that have or plan to enroll in CNSE degree programs.

The "Foundations of Nanotechnology" sequence consists of four courses in the Foundations of Nanotechnology I – IV (NNSE 506, 507, 508 and 509), with two offered in the fall semester and two in the spring semester. Each course consists of coordinated modules specifically designed and sequenced by CNSE faculty to provide the fundamental academic acumen and core competencies necessary for students entering the fields of Nanoscale Science and Nanoscale Engineering.

Nanoscale Sciences Program Leading to the Doctor of Philosophy Degree

The purpose of CNSE's Ph.D. programs is to prepare the student for a career as a skilled, productive research scholar in nanosciences or nanoengineering. The programs are intended for students with career interests in industrial research and development, academic scholarship and research, or government research agencies.

The Ph.D. programs are designed to develop the student's ability to discover fundamental

knowledge pertaining to:

- The design, growth, and properties of nanomaterials, including metals, semiconductors, polymers, and chemical and biological materials
- The integration, processing, testing, and qualification of these materials in nanocircuitry, nanosystems, nanosensors, and integrated nano-optical systems

Significant emphasis within each discipline is placed upon the science and technological know-how for atomic scale material modeling, characterization, and metrology to develop the fundamental skills necessary for independent and original research.

Students accepted into one of the CNSE Ph.D. programs are required to construct a preliminary program of graduate study with the assistance of their academic advisor at the completion of the first year of study. This preliminary program will consist of the student's choice of concentration (specialization) and a preliminary concentration course curriculum.

CNSE's Nanoscale Science program provides the critical theoretical and experimental skill base and know-how for knowledge creation in the areas of nanoscale materials, structures, and architectures.

Degree Requirements of the Ph.D. in Nanoscale Sciences

1. Students admitted with an appropriate Bachelor's degree shall complete 60 credit hours of academic coursework in partial fulfillment of the Ph.D. degree requirements:

1.a. Thirty-six (36) credit hours of NNSE coursework at the 500 level or higher with the following provisions:

1.a.i. Completion of the 12 credit-hour (four-course) "Foundations of Nanotechnology" sequence.

Nanotechnology is highly interdisciplinary, building upon core competencies from many traditional disciplines, including materials science, chemistry, physics, biology and electrical engineering. As a consequence, and because the undergraduate backgrounds of CNSE students are equally diverse, a "one size fits all" approach to course content and design is neither practical nor desirable.

To address these issues, a sequence of modular core courses, "Foundations of Nanotechnology," has been designed to provide students with unified core competencies, as well as to prepare them for their more specialized advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering tracks.

"Foundations" represents a modular four-course sequence that has been specifically designed to provide the base scientific skill set required by the varied undergraduate backgrounds of students entering CNSE. The parallel and complementary modular platform of the "Foundations" sequence responds to the need for simultaneous CNSE course content delivery to students possessing undergraduate degrees in Physics, Chemistry, Materials Science, Mathematics, Biology, Chemical Engineering, Electrical Engineering, and Mechanical Engineering.

The "Foundations" sequence serves an analogous role for practicing professionals in the fields of nanoscale science, engineering, and nanotechnology that have or plan to enroll in CNSE degree programs.

The "Foundations of Nanotechnology" sequence consists of four courses Foundations of Nanotechnology I – IV (NNSE 506, 507, 508 and 509), with two offered in the fall semester and two in the spring semester. Each course consists of coordinated modules specifically designed and sequenced by CNSE faculty to provide the fundamental academic acumen and core competencies necessary for students entering the fields of Nanoscale Science and Nanoscale Engineering.

1.a.ii. Completion of at least 9 credit hours of 600 or higher level coursework as advised relevant to a CNSE Nanoscale Science track.

1.b. Nine (9) credit hours of seminar/external courses.

1.c. Fifteen (15) credit hours of Ph.D. dissertation research.

2. Students admitted with an appropriate Master's degree shall complete 36 credit hours of academic coursework in partial fulfillment of the Ph.D. degree requirements.

2.a. Fifteen (15) credit hours of NNSE coursework at the 500 level or higher with the following provisions:

2.a.i. Completion of that portion of the "Foundations of Nanotechnology" course sequence for which the student did not receive course equivalency upon matriculation into the Nanoscale Science Ph.D. program.

2.a.ii. Completion of at least 6 credit hours of 600 or higher level coursework as advised relevant to a CNSE Nanoscale Science track.

2.b. Six (6) credit hours of seminar/external courses.

2.c. Fifteen (15) credit hours of Ph.D. dissertation research.

3. Preliminary Written Examination for formal admission to the Nanoscale Science Ph.D. program:

Admission to the Nanoscale Science Ph.D. program requires successful completion of a preliminary written examination covering fundamental topics in Nanoscale Science. The exam will be offered yearly and must be passed within two attempts to maintain academic standing in the Nanoscale Science Ph.D. program.

4. Preliminary Oral Examination for completion of the Nanoscale Science Ph.D. degree:

Normally, within 2 semesters of passing the preliminary written examination, students in the Nanoscale Science Ph.D. program must take and pass a preliminary oral examination relevant to a Nanoscale Science track. Successful completion of the preliminary oral examination is determined by a five-member oral examination committee. This committee consists of at least three members of the CNSE faculty (including the student's advisor who serves as chair) and at least one outside member (e.g. SUNY

Polytechnic Institute faculty outside CNSE, or CNSE research partner). Upon passing this examination the student advances to candidacy for the Nanoscale Science Ph.D.

5. Submission and successful defense of a formal Ph.D. Dissertation:

Within one semester of passing the preliminary oral examination, the candidate must submit to his or her Ph.D. dissertation committee a proposal outlining an original Nanoscale Science research project constituting a Ph.D. dissertation topic. The candidate must describe the motivation and background for the dissertation; the critical milestones for completing relevant research tasks; and a statement of work outlining a specific research plan. The five-person Ph.D. dissertation committee consists of at least three members of the CNSE faculty (including the candidate's advisor) and at least one outside member (e.g. SUNY Polytechnic Institute faculty outside the CNSE, or a CNSE research partner).

Upon timely completion of the Ph.D. dissertation research project the candidate prepares a dissertation and submits the final draft to the dissertation committee. The committee ascertains the suitability of the draft and recommends amendments which the candidate must complete before the final defense is scheduled. Once approved by the committee, permission is granted for the candidate to present and defend his or her dissertation in a public seminar.

6. Ph.D. Publication Requirement:

For successful completion of the Ph.D. degree requirements, students are also required to be the first author on a minimum of two scientific publications that have already been accepted for publication in recognized peer-reviewed technical journals that are related to their concentration area.

Nanoscale Science tracks for M.S. and Ph.D. degree program:

Molecular Materials and Architectures: Fundamental material properties of molecular dots, wires, and crystals, quantum confinement and ballistic transport-based device structures, and the integration of molecular/electronic materials in nanodevice geometries. Advanced theoretical and computer simulation treatments of nanoscale optical, electronic, elastic, and thermodynamic properties.

Optoelectronic Materials and Architectures: Compound semiconductor material properties and fundamentals of compound semiconductor ultra-thin-film growth for optical and optoelectronic applications. Quantum confinement-based optical and optoelectronic properties. Optical and optoelectronic device architectures using single and compound semiconductors.

Spintronic Materials and Architectures: Compound semiconductor material properties and fundamentals of compound semiconductor thin-film growth for spintronic applications. Magnetic and nanomagnetic device architectures using single and compound semiconductors.

Ultra-Thin Film Single and Multilayered Nanomaterial Structures: Self-assembly, deposition, modification, and integration of single and multilayered thin film materials. Fundamental functionality relationships between nanoscale structures and dimensions and resulting film properties.

Nanoscale Materials Characterization, Analysis, and Metrology: Advanced nanoscale photon, ion,

and electron based microscopic and spectroscopic analytical techniques and process metrologies for atomic and molecular-level material properties of ultra-thin films, nanomaterials and nanoscale devices and systems.

Nanomaterials for Nanotechnology: The science of design, deposition, and integration of atomic and molecular-level nanoengineered materials for nanotechnology-based applications.

Economic Impacts of Nanoscale Science and Nanotechnology: In-depth technical analysis of educational, workforce, and economic impacts of emerging nanoscale systems and architectures. Theoretical modeling and simulation studies of the technical impact of emerging nanoscale science concepts and disruptive nanotechnologies.

Combined M.D./Ph.D. Program in Medicine and Nanoscale Sciences or Combined M.D./Ph.D. Program in Medicine and Nanoscale Engineering

Offered by the Colleges of Nanoscale Science and Engineering of the SUNY Polytechnic Institute (CNSE) and SUNY Downstate College of Medicine (Downstate), this first-of-its-kind combined degree program provides pioneering education and training in both medicine and nanoscale science and engineering research, preparing a new generation of students for exciting 21st century careers as world-class research physicians in the emerging science and practice of nanomedicine.

CNSE is the first college in the world dedicated to research, development, education, and deployment in the emerging disciplines of nanoscience, nanoengineering, nanobioscience, and nanoeconomics. Downstate is one of SUNY's four academic health science centers and has unique research strengths in neuroscience, cardiovascular medicine, and live tissue imaging that are ideal platforms for developing medically relevant nanotechnology in the areas of biosensors, drug delivery, and diagnostics. Together CNSE's world renowned research and education in nanotechnology and SUNY Downstate Medical Center's outstanding medical training enable students to gain experience in developing and applying cutting-edge technologies to the health care challenges of today and tomorrow. This combined clinical scientist educational program provides premier hands-on training in the emerging field of nanomedicine. Students complete an integrated course of study alternating between the College of Nanoscale Science and Engineering and the SUNY Downstate Medical Center. This course of study is designed for completion within seven years and will result in the award of an MD degree from SUNY Downstate College of Medicine and a PhD in either Nanoscale Science or Nanoscale Engineering from the SUNY Polytechnic Institute.

Career Paths

Students who earn an M.S. or PhD. in nanoscale science or nanoscale engineering generally enter the workforce in high technology industries focusing on semiconductor manufacturing processes and fabrication, and also work in related growing nanotechnology fields. Recent graduates have been hired by ASML, Atotech, IBM, Global Foundries, Intel, Glauconix, AMRI, Tokyo Electron (TEL), Novellus Systems, Northrup Grumman, Superpower, Nuclea biotechnologies, Entegris among others. Our graduates have also obtained post-doctoral fellowships Colleges of Nanoscale Science and Engineering, National Institute of Standards and Technology (NIST), Harvard University Medical College, University of Texas, Austin.

Lab Facilities

The laboratory facilities at CNSE are world class and include the latest technologies and tools available for research in these fields. A full list of the facilities tools and labs can be found at <http://www.sunycnse.com/WorldClassResources.aspx> and at CNSE individual faculty websites.

Network and Computer Security (MS)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/graduate-network-and-computer-security/>

Offered On-Campus Only

Overview

The Master of Science program in Network and Computer Security offers students a cutting-edge curriculum in the field of cyber security. The program has been developed in conjunction with local experts in both industry and government, and provides students with a rigorous foundation of coursework that prepares them for management and technical positions in the fields of cyber security research and IT security management.

The program is designed for students who have the equivalent of an undergraduate degree in network and computer security, computer science or systems, electrical engineering or a related field; however, students without a background in one of these areas may enter the program by completing appropriate pre-requisite coursework under the guidance of a faculty adviser. Students with appropriate professional experience in information technology may also be eligible for program admission.

The program accommodates both a full-time and part-time students. Full-time students can complete the program within an 18-month period. Part-time completion will vary based on total number of credits taken each term. A program of study will be developed with the program coordinator that responds to student needs and the department's plan for course scheduling.

Lab Facilities

The Computer Science Department maintains its own academic computing network tailored to support our programs and provide an open environment for student experimentation and exploration. Departmental servers support the Computer Science Department and student web sites (www.cs.sunyit.edu), central file storage, remote access, databases, software repositories, streaming video, and student project virtual machines. Our computing environment is managed by professional staff and student administrators. Students interested in the fields of network or systems administration and desiring an opportunity to hone their skills prior to graduation should stop by our workroom.

The Newman Cybersecurity Lab (Donovan 1240) provides NCS students with access to networking and computer resources used for both in-class lab sessions and for individual projects. Eight "pods" provide students with their own "branch office" that can be configured and secured within the closed lab environment. Each pod contains a switch (Cisco Catalyst 2960), router (Cisco ISR 1921), firewall (Cisco 5505 ASA), wireless access point (Cisco Aironet model AIR-AP1142N), IP phone (Digium D40), and Linux host PC.

Pre-Requisite Courses and Background

- Computing Fundamentals
- Unix Programming
- Computer Organization
- Networking of Information Systems
- Discrete Math/Finite Math
- Calculus
- Probability/Statistics

The need for completion of pre-requisite coursework is determined in consultation with the Graduate Admissions Office and the program coordinator.

Program Requirements

The M.S. in Network and Computer Security consists of **33 credit hours** distributed as follows:

Core Courses: 18 credit hours

Technical Electives: 9 - 12 credit hours

Thesis/Project: 3 – 6 credit hours

Core Courses (18 credit hours)

- NCS 511 Information Assurance Fundamentals
- NCS 521 Data Communications
- NCS 531 Computer Security
- NCS 541 Network Security
- NCS 543 Secure Protocols
- NCS 598 Research Methods

Technical Electives (9-12 credit hours)

- NCS 522 Network Administration
- NCS 532 Network Intrusion Prevention and Detection
- NCS 542 Advanced Network Protocols and Standards
- NCS 552 VoIP and Multimedia Security
- NCS 562 Wireless and Mobile Networks
- NCS 563 Wireless Security
- NCS 590 Special Topics in Network and Computer Security

Thesis/Project (3 - 6 credit hours)

- NCS 597 Research Project (3 credits)
OR
- NCS 599 Thesis Research (6 credits)

Students may choose either the project or thesis option for the culminating experience. The project

option is for students who want to complete a practical programming or simulation project, or produce a Technology Case Study (TCS) that describes in detail the state-of-the-art technology, market, and future prospects for some cutting-edge topic in the field. The thesis option is for students wishing to pursue original research and requires students to demonstrate appropriate independent research and written communication skills.

Degree Requirements Overview & Program Notes

- Unless otherwise noted, all graduate courses are 3 credit hours.
 - All students must have a GPA of 3.0 or higher to graduate.
 - Over the course of their studies, students can apply at most two “C” grades in courses taken toward the degree.
 - Students may repeat at most two courses in which a “C” grade or less was received.
 - Students may transfer up to six credit hours, if applicable, from another graduate program.
 - Students must maintain continuous registration, equal to or greater than one credit while working on their final thesis or project. MS NCS students can do this by registering for either NCS 597 or NCS 599, as appropriate, with their advisor for one credit. Students may do this for up to six semesters at which time it is expected that all program requirements will have been met.
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Nursing - Master of Science and Certificate for Advanced Study

<http://sunypoly.edu/apps/catalog/grad/2015-2016/ms-nursing/>

Improving the nation's health in the twenty-first century requires increasing the number of advanced practice nurses available to the general population. Professional nurses of tomorrow must be prepared today to meet the challenges of a highly complex health care system and the needs of people in our communities and globally. The Masters curriculum prepares highly skilled nurses to achieve the [Future of Nursing Agenda](#) to care for our people and improve health care of the nation.

Accreditation

The Master of Science in Nursing programs (Nursing Administration, Nursing Education and Nurse Practitioner) are registered by the New York State Education Department and accredited by the Commission on Collegiate Nursing Education (CCNE, 1 Dupont Circle NW, Washington, DC, 202-887-6791). The CCNE is recognized by the U.S. Department of Education as an accrediting agency for nursing programs at both the baccalaureate and graduate levels. For more information, see: www.aacn.nche.edu/accreditation.

Vision

To be the premier innovative cornerstone of nursing education in New York State through the use of technology within a caring context

Mission Statement

The mission of the SUNYIT Nursing Faculty is to create a caring, transformational environment that promotes professional excellence, lifelong scholarship, and innovation in nursing. We provide evidence-based nursing education that prepares learners to meet health care needs within our local and global communities through technology, leadership, and collaboration (TLC).

Statement of Purpose and Program Goals

The graduates of this program are prepared at beginning and advanced levels of their practice to utilize theory, leadership, and research evidence as the foundation of their practice. They are prepared to continue their education and to deliver quality nursing services to individuals, families, groups, and communities.

The overall Nursing Department goals are to: we will need to add new ones but we don't have them yet

- Provide a nursing education in the context of an integrative framework that includes technology, behavioral science, biological sciences, arts and humanities
- Prepare learners to apply evidence based methodologies to their practice
- Provide a transformational educational environment that promotes caring, critical reflection, collaboration, professionalism, innovation and lifelong scholarship.
- Foster clinical decisions and ethical practice in health care based upon the codes and standards of practice to meet unique needs of clients and families within local and global culturally diverse

communities.

- Promote leadership and caring within clinical practice, education, administration, community service, and scholarship.
- Cultivate the capacity of technology within the human caring experience.

MS Program Objectives

1. Integrate knowledge from the liberal arts and sciences and nursing for application to advanced nursing practice.
2. Practice in the multidimensional, advanced practice roles of educator, administrator or nurse practitioner with a specialty focus to provide direct or indirect healthcare to individuals, families, groups, communities and populations.
3. Illustrate advanced communication with clients, colleagues and other professionals through proficient verbal, non-verbal, writing skills and emerging technology.
4. Critically evaluate research based findings as evidence to improve and change practice.
5. Apply advanced critical thinking skills when assessing, designing, managing, implementing and evaluating outcomes of nursing interventions.
6. Integrate values of caring, cultural diversity, altruism, social justice, advocacy, and ethical decision in the provision of health services to clients.
7. Exhibit advanced principles of leadership to effectively and efficiently use resources for enhancing the practice environment and improving patient care outcomes.
8. Incorporate principles of teaching and learning in health promotion and protection, risk reduction, disease management, and rehabilitation activities for the improvement of health outcomes.
9. Demonstrate high level skills of inquiry, analysis, and information literacy to address practice issues.
10. Assume accountability of professional development and growth by engaging in activities to promote personal and discipline advancement.
11. Apply advanced concepts and guidelines inherent in the educator, administrator or nurse practitioner role to provide leadership and service for the enhancement of continuous quality improvement in health care.

MS Student Learning Outcomes

Derived from the Department of Nursing and Health Professions goals are the program specific to the Master of Science in Nursing degree to prepare the graduate for advanced professional practice. At the completion of masters program, the graduate will be able to:

- Integrate theoretical and empirical knowledge in nursing and from related arts, sciences, and technology essential for advanced practice nursing.
- Appraise relevant theories for their application within to the advanced practice role.
- Utilize critical reflection in the translation and integration of scholarship into advanced practice.
- Exemplify the code of ethics and standards of nursing practice in the provision of care and professional performance.
- Promote collaboration with consumers, health care professionals, and organizations to provide safe, high quality healthcare.
- Demonstrate commitment to ongoing personal and professional development.

- Utilize innovative technologies within the advanced practice role.

Career Paths

Nurse Practitioner

With a growing need for qualified nurse practitioners, professional-level nursing takes place in private practices, health maintenance organizations, public health agencies, primary care clinics, home health care and nursing homes. Opportunities are also available in offices, palliative care and occupational settings. Graduates of the program are encouraged to pursue doctoral study.

Nursing Education

There continues to be a need for master's prepared nursing faculty. The Master of Science in Nursing Education program prepares graduates for a professional career as a nurse educator in academia or staff development. Graduates advance their careers as faculty and administrative leaders in a wide variety of settings including associate degree and baccalaureate degree nursing programs and institution based staff development. Graduates of the program are encouraged to pursue doctoral study.

Sigma Theta Tau International

Iota Delta Chapter of Sigma Theta Tau International Honor Society of Nursing includes in its membership students, alumni, faculty, and community leaders in nursing. The purposes of this society are to recognize superior achievement and leadership qualities, foster high professional standards, encourage creative work, and strengthen commitment to the ideals and purposes of the profession. Eligibility is determined by scholastic achievement, evidence of professional potential, and/or marked accomplishment in the field of nursing.

Lab Facilities

The nursing laboratory provides multiple student work stations (with examination tables) where students practice the processes associated with medical history taking and physical examinations. Specialized equipment associated with the physical examination is provided. Video equipped exam rooms are utilized for simulation experiences. Nurse practitioner students routinely perform histories and physicals on volunteers from inside and outside the campus community.

Computer Requirements

Computer compatible with the current BLACKBOARD platform. ([Check computer capabilities.](#)) Students must have a USB headset with microphone. A wired internet connect is preferred.

Health Clearance Requirements

All students must be in compliance with SUNY and SUNY Poly health regulations. Nursing Students must meet additional health requirements of the nursing program and health agencies. Satisfactory health clearance must be complete using the SUNY Poly Health History and Physical Examination Forms and be on file in the Health and Wellness Center prior to participation in each of the placements in agency settings for teaching practicum and/or clinical experiences.

Clinical clearance must be updated and validated every semester prior to the first scheduled clinical agency experience. Attendance at clinical activity without prior clinical clearance will result in clinical failure.

Clinical Experiences

Students must have a clear and unencumbered nursing license in order to participate in clinical experiences. Failure to report any license sanction or condition will result in automatic course failure and probable removal from the nursing program.

All students are expected to perform clinical duties with the upmost professional, ethical, and caring behaviors. All students regardless of level, will be expected to adhere to legal and ethical standards as established by regulatory agencies and nursing professional standards. There is zero tolerance for breaches of ethics or professionalism. Unsafe clinical performance is care that seriously jeopardizes a patient's well-being and/or causes potential or actual harm to self or others. No student demonstrating unsafe performance will be allowed to continue in clinical settings. Any acts of omission or commission by a student that are deemed unsafe, unethical or unprofessional are grounds for course failure, and probable program dismissal.

MS and CAS in Family Nurse Practitioner

<http://sunypoly.edu/apps/catalog/grad/2015-2016/ms-nursing/ms-in-nursing-with-a-major-in-family-nurse-practitioner/>

Offered in a Hybrid Format - THIS IS NOT AN ONLINE PROGRAM

Master of Science (MS) in Family Nurse Practitioner

[View Certificate for Advanced Study \(CAS\) in Family Nurse Practitioner](#)

The Family Nurse Practitioner program is designed to prepare expert advanced practice primary care clinicians capable of providing care to families in primary care settings. The program builds on the undergraduate foundation and develops advanced assessment, planning, and evidence-based clinical management skills. Family nurse practitioners provide primary and preventive care in such areas as pediatrics, family health, women's health, and gerontological care. They are advocates and health educators for patients, families, and communities.

The SUNY Poly Family Nurse Practitioner program emphasizes clinical competence through theoretical understanding and practical application to primary care practice. Clinical expertise is acquired through clinical experiences in a variety of public, private, and community-based primary care agencies. The FNP student will complete approximately 750 hours of clinical practice in this 45 credit-hour program of study. In addition, the program provides a strong foundation for future scholarship, research and doctoral study.

The MS program accommodates both full-time and part-time students. Full-time students can complete the program in two years; part-time completion typically takes four years.

Program Requirements

The MS in Nursing with a major in Family Nurse Practitioner consists of **45 credit hours** distributed as follows:

- NUR 500 Theoretical Foundations for Nursing Practice (3 credits)
- NUR 503 Advanced Nursing, Health Policy & the Health System (3 credits)
- NUR 531 Family Theory (2 credits)
- NUR 555 Clinical Pharmacology (3 credits)
- NUR 560 Nursing Research Methods (3 credits)
- NUR 566 Advanced Health Assessment (3 credits)
- NUR 567 Advanced Health Assessment Clinical (2 credits)
- NUR 570 Clinical Pathophysiology (3 credits)
- NUR 572 Family Health Promotion & Disease Prevention Across the Lifespan (3 credits)
- NUR 580 Beginning Level Family Clinical (2 credits)
- NUR 652 Family Primary Health Care I (3 credits)
- NUR 658 Women's Health Care (2 credits)
- NUR 668 Family Primary Health Care II (4 credits)

- NUR 670 Intermediate Level Family Clinical (3 credits)
- NUR 680 Advanced Level Family Clinical (4 credits)
- NUR 692 Culminating Seminar for Nurse Practitioners (2 credits)

Clinical Experiences

Students must have a clear and unencumbered nursing license in order to participate in clinical experiences. Failure to report any license sanction or condition will result in automatic course failure and probable dismissal from the nursing program.

All students are expected to perform clinical duties with the utmost professional, ethical, and caring behaviors. All students, regardless of level, will be expected to adhere to legal and ethical standards as established by regulatory agencies and nursing professional standards. There is a zero tolerance for breaches of ethics or professionalism. Unsafe clinical performance is care that seriously jeopardizes a patient's well-being, and/or causes potential or actual harm to self or others. No student demonstrating unsafe performance will be allowed to continue in clinical settings. Any acts of omission or commission by a student that are deemed unsafe, unethical or unprofessional are grounds for course failure, and probable program dismissal.

Degree Requirements Overview & Program Notes – Family Nurse Practitioner Program

- Regardless of overall GPA, students can apply only two “C” grades in courses taken towards the degree.
- A “C” grade will only be acceptable towards degree requirements in common nursing core courses: NUR 500, NUR 503, NUR 531 and NUR 560.
- All students must have a GPA of 3.0 or higher to graduate.
- Graduate students may repeat a total of three nursing courses that count towards graduation; each of these courses may only be repeated once.
- Students may transfer up to 12 credit hours, if applicable, from another graduate program.
- Students must maintain continuous registration, equal to or greater than one credit while completing degree requirements. MS Nursing students can do this by registering for CMT 600 – Continuous Registration. This only applies to students who have an incomplete in their last semester and it can only be applied once.
- All clinical experiences for the nurse practitioner program must be done only in New York State.
- Applicants must possess and maintain a current unrestricted, unencumbered license as a Registered Professional Nurse (RN) in New York State and report *all jurisdictions and/or states in which a license/registration is or has ever been held*,
- All students must satisfactorily complete a culminating examination to graduate

Certificate for Advanced Study (CAS) in Family Nurse Practitioner

Offered in a Hybrid Format – THIS IS NOT AN ONLINE PROGRAM

The Department of Nursing & Health Professions is authorized by the New York State Education Department to offer a post-master's Certificate for Advanced Study in Family Nurse Practitioner to registered nurses who already possess both baccalaureate and master's degrees in nursing from accredited programs.

Admission requirements for these post-master's certificate programs are the same as for the department's MS nursing program except applicants must have a minimum 3.2 grade point average (on a 4.0 scale) for all graduate level work completed.

Program Requirements

The CAS in Nursing with a major in Family Nurse Practitioner consists of **36 credit hours** distributed as follows:

- NUR 531 Family Theory (2 credits)
- NUR 555 Clinical Pharmacology (3 credits)
- NUR 566 Advanced Health Assessment (3 credits)
- NUR 567 Advanced Health Assessment Clinical (2 credits)
- NUR 570 Clinical Pathophysiology (3 credits)
- NUR 572 Family Health Promotion & Disease Prevention Across the Lifespan (3 credits)
- NUR 580 Beginning Level Family Clinical (2 credits)
- NUR 652 Family Primary Health Care I (3 credits)
- NUR 658 Women's Health Care (2 credits)
- NUR 668 Family Primary Health Care II (4 credits)
- NUR 670 Intermediate Level Family Clinical (3 credits)
- NUR 680 Advanced Level Family Clinical (4 credits)
- NUR 692 Culminating Seminar for Nurse Practitioners (2 credits)

The faculty realize that students in the post-master's certificate programs will come with a variety of backgrounds and experience. Students will need to meet with an adviser early in the course of study to determine specific clinical needs. Every effort will be made to provide students with both necessary and desired clinical experiences. A Gap Analysis of all coursework and experience will be developed to determine what courses and experiences each individual student will need to satisfy the course requirements.

For updated information about the estimated cost to complete this program and other important information please visit the SUNY Poly website at:

www.sunypoly.edu/nursing.certs_anp_fnp

MS and CAS in Nursing Education

<http://sunypoly.edu/apps/catalog/grad/2015-2016/ms-nursing/ms-in-nursing-with-a-major-in-nursing-education/>

Offered Online Only

Master of Science (MS) in Nursing Education

[View Certificate for Advanced Study \(CAS\) in Nursing Education](#)

Master of Science in Nursing Education program consists of 36 credits of coursework, divided into two categories, core and specialty courses. Nine credits of core courses include theory, research and health policy; twenty-one credits include the specialty courses; and two elective graduate courses round out the remaining six credits of the curriculum. The Master of Science in Nursing Education program promotes the application of didactic course content to the role of the nurse educator within academia and other educational venues. The culminating internship provides 150 hours of directed educational experiences as a nurse educator, with an emphasis on teaching. The practicum is intended to provide a format for the learner to integrate content from all courses within the Master of Nursing in Education program, and apply the material to their teaching-learning environment.

Current trends in nursing education reflect a growing need for nursing faculty. According to American Association of Colleges of Nursing (AACN) over 70,000 nursing school applicants were denied admission to the nation's nursing programs. Although several factors contribute to decreased admission of students into nursing programs, insufficient number of nursing faculty is cited as a key issue. Reasons for faculty shortages are due to retirements, as well as newly developed faculty positions. Nationally, the average age of doctoral and master prepared nursing faculty is over 55 years old, with the average retirement age identified as 62. All indicators stress the present and growing need for qualified nurse educators.

The MS program accommodates both full-time and part-time students. Full time students can complete the program in two years; part-time completion typically takes three to four years.

Program Requirements

The MS in Nursing with a major in Nursing Education consists of **36 credit hours** distributed as follows:

- NUR 500 Theoretical Foundations for Nursing Practice (3 credits)
- NUR 503 Advanced Nursing, Health Policy and the Health System (3 credits)
- NUR 526 Legal and Regulatory Issues in Health Care (3 credits)
- NUR 535 Curriculum Development in Nursing Education (3 credits)
- NUR 536 Measurement and Assessment (3 credits)
- NUR 545 Instructional Design in Nursing Education (3 credits)
- NUR 560 Nursing Research Methods (3 credits)
- NUR 624 Grant Proposal (3 credits)
- NUR 635 Evaluation Approaches in Nursing Education (3 credits)

- NUR 645 Culminating Internship in Nursing Education (3 credits)
- Graduate Elective ** (3 credits)
- Graduate Elective ** (3 credits)

** *Recommended graduate electives include: NUR 570 Clinical Pathophysiology, NUR 555 Clinical Pharmacology, and HIM 501 Health Informatics.*

Clinical Experiences

Students must have a clear and unencumbered nursing license in order to participate in clinical experiences. Failure to report any license sanction or condition will result in automatic course failure and probable dismissal from the nursing program.

All students are expected to perform clinical duties with the utmost professional, ethical, and caring behaviors. All students, regardless of level, will be expected to adhere to legal and ethical standards as established by regulatory agencies and nursing professional standards. There is a zero tolerance for breaches of ethics or professionalism. Unsafe clinical performance is care that seriously jeopardizes a patient's well-being, and/or causes potential or actual harm to self or others. No student demonstrating unsafe performance will be allowed to continue in clinical settings. Any acts of omission or commission by a student that are deemed unsafe, unethical or unprofessional are grounds for course failure, and probable program dismissal.

Degree Requirements Overview & Program Notes - Nursing Education Program

- All students must have a GPA of 3.0 or higher to graduate.
- Regardless of overall GPA, students can apply only two "C" grades in courses taken towards the degree.
- A "C" grade will only be acceptable towards degree requirements in common nursing core courses: NUR 500, NUR 503, NUR 531 and NUR 560.
- Graduate students may repeat a total of three nursing courses that count towards graduation; each of these courses may only be repeated once.
- Students may transfer up to nine credit hours, if applicable, from another graduate program.
- Students must maintain continuous registration, equal to or greater than one credit while completing degree requirements. MS Nursing students can do this by registering for CMT 600 – Continuous Registration. This only applies to students who have and incomplete in their last semester and it can only be applied once.

Certificate for Advanced Study (CAS) in Nursing Education

Offered Online Only

The Department of Nursing and Health Professions is authorized by the New York State Education Department to offer a post-master's Advanced Certificate in Nursing Education, The Program focuses on the specialty courses in curriculum development, instructional methodologies, measurement and

assessment and evaluation approaches; and includes the cognate course of grant writing. The program concludes with the culminating internship which provides over 150 hours of directed educational experiences as a nurse educator, with an emphasis on teaching

Program Requirements

The CAS in Nursing with a major in Nursing Education consists of **18 credit hours** distributed as follows:

- NUR 535 Curriculum Development in Nursing Education (3 credits)
- NUR 536 Measurement and Assessment (3 credits)
- NUR 545 Instructional Design in Nursing Education (3 credits)
- NUR 624 Grant Proposal (3 credits)
- NUR 635 Evaluation Approaches in Nursing Education (3 credits)
- NUR 645 Culminating Internship in Nursing Education (3 credits)

The faculty realize that students in the post-master's certificate programs will come with a variety of backgrounds and experience. Students will need to meet with an adviser early on to plan an appropriate course of study.

Technology Management (MBA)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/mba-tm/>

Offered Online and Hybrid

Overview

The Master of Business Administration (MBA) degree is the most widely awarded and recognized graduate degree in the field of business. The MBA in Technology Management is a degree program that offers a broad and integrative perspective across business functions, and a chance to specialize in a field of the individual's choice. It also responds to the current needs of the local business community by combining a rigorous study of management topics with a unique focus on technology and innovation management.

The program stresses the use of modern techniques to analyze and develop business solutions and prepare students for upper-level management jobs. The focus of the coursework is on the use of quantitative and qualitative analyses in conjunction with financial, accounting, and economic principles to solve current and future business challenges.

The MBA curriculum is designed to prepare generalists for corporate management. Our well-qualified graduate faculty and the modern technological infrastructure at SUNY Poly provide an ideal learning environment to integrate technology into the rigorous management curriculum.

The MBA program accommodates both full-time and part-time students. Full-time students can complete the program in two years. Part-time completion will vary based on total number of credits taken each term.

Mission Statement

The Department of Business Management is committed to offering high quality management and professional education that is focused on meeting the needs of students and organizations in the Mohawk Valley, New York State, and the global community. We are dedicated to providing undergraduate, graduate, and non-degree programs that are responsive to the dynamic business environment and accessible to qualified students. The Department of Business Management is committed to continuously improving its programs through learning assurance, scholarship, and service.

Accreditation

The Department of Business Management is accredited by AACSB International (Association to Advance Collegiate Schools of Business), an elite distinction achieved by less than 5% of the world's academic business programs. AACSB is the premier accrediting agency of collegiate business and accounting programs worldwide.

Career Paths

The MBA degree holders can seek careers in a wide variety of areas such as corporate administrators, business entrepreneurs, industry consultants, and government administrative employees. The broad learning scope and advanced professional training in the MBA curriculum make it possible for graduates

from this degree program to hold positions in a variety of roles in nearly every industry.

Lab Facilities

With its modern computing facilities and current business software packages, the Business Laboratory provides our students and faculty members an excellent environment for conducting business data analysis, management case simulation, operation programming, and other advanced computing activities.

Program Requirements

The MBA in Technology Management consists of 48 credit hours distributed as follows:

Technology Management Core Courses: 18 credit hours

Business Management Core Courses: 21 credit hours

Specialized Concentration Courses: 9 credit hours

Technology Management Core Courses (18 credit hours)

- TIM 500 Project Management
- TIM 530 Managing New Product Design & Development
- BLW 570 Business Law, Ethics, & Intellectual Property Rights
- ENT 575 Innovation and Entrepreneurship
- TIM 585 Leading Organizational Change and Innovation
- TIM 685 Strategic Planning

Business Management Core Courses (21 credit hours)

- ACC 520 Accounting for Managers
- HRM 518 Human Resource Management
- MIS 515 Management Information Systems
- MKT 505 Marketing Management
- BUS 505 Multinational Economics of Technology
- FIN 525 Financial Management Problems
- MGS 511 Quantitative Business Analysis

Specialized Concentration Courses (9 credit hours)

Choose one area of concentration and complete all three courses in that area.

Accounting & Finance Concentration

- FIN 532 Investment Strategy
- ACC 585 Financial Statement Analysis & Reporting
- FIN 685 Seminar in Accounting & Finance

Health Informatics Concentration

- HIM 501 Health Care Informatics
- HIM 509 Legal Issues in Health Informatics
- HIM 600 Quality Improvement in Health Informatics

Human Resource Management Concentration

- HRM 615 Labor Relations
- HRM 620 Compensation
- HRM 650 Human Resource Information Systems

Marketing Management Concentration

- MKT 510 Data Analysis
- MKT 652 Sales Management
- MKT 654 Services Marketing Management

Business Management Concentration

Choose any three graduate level business courses, excluding the technology management and business management core courses.

Fast Track Option

The Fast Track MBA is a 33 credit hour program designed for students who have an undergraduate business degree with a cumulative grade point average (GPA) of 3.0 or higher from an accredited business program in the U.S.

Students admitted into the Fast Track MBA will be granted course waivers for the following five business management core courses: ACC 520, BUS 505, FIN 525, HRM 518 and MKT 505.

This 15 credit hour waiver reduces the total number of credit hours required for the business management core to six credits.

The Fast Track option allows qualified full-time MBA students to complete the MBA in one year. It is also available to part-time students.

Degree Requirements Overview & Program Notes

- Unless otherwise noted, all graduate courses are 3 credit hours.
- All students must have a GPA of 3.0 or higher to graduate.
- Over the course of their studies, students can only apply two “C” grades in courses taken toward the degree.
- Students may transfer up to twelve credit hours, if applicable, from another graduate program.
- Fast Track students may transfer up to six credit hours, if applicable, from another graduate program.
- Students must maintain continuous registration, equal to or greater than one credit while completing graduate degree requirements. MBA students can do this by registering for CMT 600 - Continuous Registration. This may be taken up to six semesters at which time it is expected that all program requirements will have been met.

Telecommunications (MS)

<http://sunypoly.edu/apps/catalog/grad/2015-2016/ms-tel/>

Offered On Campus Only

Overview

The Master of Science in Telecommunications is designed to accommodate those individuals with an appropriate baccalaureate degree who seek graduate level education in Telecommunications and Information Technology (IT). The curriculum investigates critical areas of advanced data communications and telecommunications network technologies, including both technical and management perspectives. Technical coursework includes advanced study of LAN, MAN and WAN networks, internetworking, wireless cellular networks, wireless LANs, technologies enabling convergence of voice and data, and high capacity core networks. Common themes through these studies include information assurance and network design and simulation.

The MS in Telecommunications program is designed to meet the needs of students seeking quality education and preparation for career advancement in this dynamic one-trillion-dollar-per-year global industry.

The MS program accommodates both full-time and part-time students. Full-time students can complete the program within an 18 month period. Part-time completion will vary based on total number of credits taken each term. A program of study will be developed with the program coordinator which responds to student needs and the department's plan for course scheduling.

Career Paths

This dynamic field offers a wide variety of career opportunities in the Information Technology (IT) industry. The subfield of Information Assurance is rapidly becoming one of the most sought-after specialties in the information sciences. Our graduates go on to rewarding careers in the field with titles such as Network Engineer, Network Administrator, Optical Network Engineer, Software Engineer, NOC Technician, Systems Engineer, Infrastructure Engineer, and Technical Consultant. Some of the companies that recent graduates have joined include AT&T, Aruba Networks, BT Global Services, BuffaloNiagara, Cisco, Cloud Solutions, Omnicell, Comcast, Datacom Systems, Harris Corporation, iBasis, IBM, Microsoft, mindShift Technologies, Northland Communications, Northrop Grumman, Scivantage, T-Mobile, Nokia Siemens, United Technologies, Vonage, and ZTE.

Lab Facilities

The Computer Science Department maintains its own academic computing network tailored to support our programs and provide an open environment for student experimentation and exploration. Departmental servers support the Computer Science Department and student web sites (www.cs.sunyit.edu), central file storage, remote access, databases, software repositories, streaming video, and student project virtual machines. Our computing environment is managed by professional staff and student administrators. Students interested in the fields of network or systems administration and desiring an opportunity to hone their skills prior to graduation should stop by our workroom.

The Newman Cybersecurity Lab (Donovan 1240) provides TEL students with access to networking and computer resources used for both in-class lab sessions and for individual projects. Eight “pods” provide students with their own “branch office” that can be configured and secured within the closed lab environment. Each pod contains a switch (Cisco Catalyst 2960), router (Cisco ISR 1921), firewall (Cisco 5505 ASA), wireless access point (Cisco Aironet model AIR-AP1142N), IP phone (Digium D40), and Linux host PC.

Pre-Requisite Courses and Background

- Computing Fundamentals
- Introduction to Linux
- Networking of Information Systems
- Discrete Structures
- Calculus
- Probability/Statistics

The need for completion of pre-requisite coursework is determined in consultation with the Graduate Admissions Office and the program coordinator.

Program Requirements

The M.S. in Telecommunications consists of **33 credit hours** distributed as follows:

Research Core: 3 credit hours

Technical Core: 15 credit hours

Technical Electives: 9 - 12 credit hours

Thesis/Project: 3 – 6 credit hours

Research Core (3 credit hours)

- TEL 598 Telecom Research Methods

Technical Core (15 credit hours)

- TEL 500 Voice Communications
- TEL 502 Data Communications
- TEL 550 Advanced Network Standards and Protocols
- TEL 560 Advanced Wireless Communications
- NCS 511 Information Assurance Fundamentals

Technical Electives (9 - 12 credit hours)

Complete 3 or 4 courses from the following list, or other approved graduate courses at SUNY Poly. Students choosing the project option must take four technical elective courses.

- CS 532 Cryptography and Data Security
- TEL 505 Network Design and Simulation
- TEL 520 Telecommunications Systems Analysis & Project Management
- TEL 527 Telecommunication Optical Networks
- TEL 590 Selected Topics in Advanced Telecommunications
- NCS 531 Computer Security
- NCS 541 Network Security
- NCS 563 Wireless Security

Thesis/Project (3 - 6 credit hours)

- TEL 597 Research Project (3 credits)
OR
- TEL 599 Thesis (6 credits)

Students may choose either the project or thesis option for the culminating requirement. The project option is for students who want to complete a practical programming or simulation project, or produce a Technology Case Study (TCS) that describes in detail the state-of-the-art of the technology, market, and future prospects for some cutting-edge topic in the field. The thesis option is for students wishing to pursue original research and requires students to demonstrate appropriate independent research and written communication skills in TEL 598.

Degree Requirements Overview & Program Notes

- All students in the program are required to complete TEL 598 within their first two semesters of study.
 - Unless otherwise noted, all graduate courses are 3 credit hours.
 - All students must have a GPA of 3.0 or higher to graduate.
 - Over the course of their studies, students can apply at most two “C” grades in courses taken toward the degree.
 - Students may repeat at most two courses in which a “C” grade or less was received.
 - Students may transfer up to six credit hours, if applicable, from another graduate program.
 - Students must maintain continuous registration, equal to or greater than one credit while working on their final thesis or project. MS Telecommunications students can do this by registering for either TEL 597 or TEL 599, as appropriate, with their advisor for one credit. Students may do this for up to six semesters at which time it is expected that all program requirements will have been met.
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Courses

<http://sunypoly.edu/apps/catalog/grad/2015-2016/courses/>

Accounting

ACC 520 Accounting for Managers (3)

The objective of this course is to familiarize students with the basic principles of short-term financial planning. Topics coverage shall include (1) trends flow statement development and analysis, on both cash and working capital bases, (2) common size analysis, (3) index analysis, (4) cash budgeting, (5) working capital management, (6) pro forma statement development and analysis, and (7) general forecasting methodologies (including subjective, historical, and causal techniques).

ACC 571 Advanced Management Accounting (3)

Students will learn techniques for budgeting, cost-volume-profit analysis, segment evaluation and analyzing operating constraints. They will research and develop solutions to various advanced management accounting problems through case studies and problems from the CMA Exam. Finally, the students will present their analysis and recommendations. Prerequisite: ACC 370 or ACC 520 or equivalent.

ACC 585 Financial Statement Analysis and Reporting (3)

Investigates business objectives through financial analysis, cash budgeting, and ratio analysis. Additional topics may include capital budgeting, utility analysis, basic portfolio concepts, the capital asset pricing model, and the study of efficient markets. Long-term financing strategies of the corporation, including the theory of valuation for corporate securities, capital structure theory, dividend policy, and analysis of overall cost of capital to the corporation. Prerequisite: ACC 201 or ACC 520 or equivalent.

ACC 591 Independent Study (3)

Extensive study and research on a particular topic of student interest under the supervision of a faculty member. The student is required to submit a written proposal which includes a description of the project, its duration, educational goals, method of evaluation and number of credits to be earned.

ACC 595 Internship (3)

Internship placements provide students with a field experience related to their academic preparation enabling them to apply classroom instruction to the work site. Students are placed with an organization related to their major and specific area of interest to work along with, and be proctored by, experienced professionals. These are opportunities that cannot be duplicated in the classroom environment and provide an excellent transition into the field.

ACC 611 Advanced Income Tax Research (3)

Focus on the study of federal tax legislation and IRS regulation of corporations, partnerships, estates and trusts. Special attention is given to capital gains and losses, normal tax and surtax, income and deductions for domestic, international, and multinational corporations. Tax research will be conducted through the analysis of IRS rulings on court cases. Prerequisite: ACC 310 or equivalent.

ACC 630 Fund Accounting (3)

Accounting principles and procedures as applied to not-for-profit entities are covered. In addition, the accounting standards and reporting requirements that relate to not-for-profit entities will be reviewed and analyzed. Prerequisite: ACC 475 or equivalent.

ACC 650 Advanced Auditing Theory (3)

Advanced review of auditing standards and techniques, computerized auditing systems, SEC regulations, legal liability, and professional ethical standards. Prerequisite: ACC 450 or equivalent.

ACC 685 Advanced Financial Accounting Theory (3)

An examination and analysis of Generally Accepted Accounting Principles (GAAP). The course reviews Financial Accounting Standards (FAS) in detail and includes a critical review of the research that is at the theoretical foundations of GAAP. In addition, the process by which the Financial Accounting Standards Board promulgates new FAS will also be analyzed. Prerequisite: ACC 475 or equivalent.

Business

BLW 570 Business Law, Ethics, and Intellectual Property Rights (3)

Designed to provide the student with the legal environment of business transactions including court structure and procedure, contracts, sales, commercial paper, secured financing, and property transactions. Covers the ethical aspects of business with particular emphasis to intellectual property (IP) rights as they relate to technology innovation and high technology environments. The IP issues which will be addressed include copyrights, patents, trademarks, software, domain names, licenses, royalties, and business processes.

BUS 505 Multinational Economics of Technology (3)

Managerial economics is the application of economic theory and methodology to decision-making problems encountered by public and private institutions in a multinational setting and within the framework of technology innovation. Emphasis is on the identification and selection of alternative means of obtaining given objectives as efficiently as possible. It is a special branch of economics bridging the gap between abstract theory and managerial practice. Areas of study will include managerial economics and economic theory, statistical and econometric applications, demand, supply, markets, costs, profits and government and business.

BUS 595 MBA Internship (3)

Internship placements provide students with a field experience related to their academic preparation enabling them to apply classroom instruction to the work site. Students are placed with an organization related to their major and specific area of interest to work along with, and be proctored by, experienced professionals. These are opportunities that cannot be duplicated in the classroom environment and provide an excellent transition into the field.

Computer/Information Science

CS 500 Discrete Structures (3)

Concepts of discrete mathematics relevant to computer science. Topics include logics and proofs, natural deduction, set theory, relational and algebraic structures on sets, Boolean matrices, graph theory,

elementary enumerative combinatorics, and elementary formal grammars and automata theory, practice on computer of mathematical software systems. Prerequisite: None.

CS 502 Machine Structures (3)

Computer systems as a hierarchy of levels, beginning with the standard von Neumann model and then moving forward to more recent architectural concepts. Topics include digital logic, microprogramming, conventional machine and assembly language levels. Emphasis is given to those aspects of computer hardware that affect programming. Prerequisite: Permission of instructor.

CS 503 Data Structures (3)

Fundamental concepts of data structures and the algorithms that proceed from them. Topics include recursion, the underlying philosophy of object-oriented programming, fundamental data structures including stacks, queues, linked lists, hash tables, trees, and graphs. The basics of algorithmic analysis, and an introduction to the principles of language translation. Course programming assignments use Java and/or C++. Prerequisites: Permission of instructor.

CS 505 Object-oriented Programming (3)

Programs as collections of classes that define interacting objects. Topics include class definition, information hiding and encapsulation, inheritance, polymorphism, and late binding, exceptions, abstract classes, interfaces, generics, collections. Software reuse and collaboration. Introduction to UML and design patterns. Event-driven programming and graphical user interfaces, discrete-event simulation, multi-threading, sockets, web programming as sample applications. Prerequisite: Permission of instructor.

CSC 507 Data Analysis

Selection and implementation of research strategies, including selection and application of proper statistical techniques using a personal computer as a research and decision-making tool. Students will attain proficiency in the use of a commercial statistical analysis package in the solution of quantitative research problems. Designed to support graduate programs in other schools.

CS 510 Programming Languages (3)

Principles for programming language organization, and techniques for language processor implementation. Topics include syntax structures, grammars, lexing and parsing techniques, semantic analysis, symbol tables, language translation and generation patterns, type systems, runtime environments, garbage collection, comparative review of major programming language paradigms, domain-specific languages, mathematics of formal language semantics. Prerequisite: CSC 500, CS 500, or permission of instructor.

CS 511 Formal Methods in Software Construction and Verification (3)

Fundamentals of formal software specification and verification, and principles of deductive verification of object-oriented software. Topics include predicate, modal, Hoare, dynamic logics for program specification, construction and verification, intractability of testing, specification property theorem proving, fundamentals of model checking, symbolic execution, software artifacts for specification and verification. Prerequisite: Knowledge of discrete structures is assumed.

CS 512 Software Engineering (3)

Principles, processes and tools for the rigorous construction of software. Topics include system

engineering contexts, model-based paradigms, UML and SysML, agile approaches, requirement specifications, architectural design, detailed design, testing maintenance, patterns for analysis and design, configuration management, automated code generation, and compliance. Knowledge of discrete structures and data structures is assumed.

CS 518 Topics in Software Engineering (3)

Topics will vary from offering to offering. In-depth development of topics reflecting current research interest of faculty. Prerequisite: as listed by instructor.

CS 520 Computer Architecture (3)

Core principles underlying current and future machines are discussed in quantitative terms and illustrated with current leading architectures. Review of instruction set architectures, pipelining and cache sequences. Issues of power, circuit costs, reliability and availability are introduced. Exploiting instruction-level parallelism in processors including superscalar execution, branch prediction, dynamic scheduling and relevant compiler enhancements are considered. Organization and performance of symmetric and distributed memory architectures: SIMD/MIMD systems, interconnection networks, synchronization and cache coherence. Knowledge of Machine Structures, Discrete Structures assumed.

CS 521 Operating Systems (3)

Exploration and discussion of major developments in operating systems technologies from analysis and modeling aspects covering both centralized and distributed architectures. Topics include: concurrency and interprocess communication, memory management issues, file systems and I/O, multimedia operating systems, multiprocessors, distributed systems, and research foci in operating systems area. Prerequisite: CS330, or its equivalent.

CS 522 Computer Networks (3)

Analysis, modeling and evaluation of computer networks with Internet as the infrastructure base. Topics include: layered models and protocol suites, unicast/multicast routing, network management, traffic measurement and analysis, mobile networking, router architecture, network-aware applications, content dissemination systems, network security and performance issues. Knowledge of discrete structures is assumed.

CS 523 Parallel Computing (3)

Techniques for programming parallel computers; trends in parallel and distributed computing; shared memory and message passing architectures; parallel algorithms design; synchronization; parallel algorithm performance analysis; interconnection network topologies; parallel computing languages. Prerequisite: Knowledge of machine structures and data structures is assumed.

CS 524 Distributed Systems (3)

Introduction to the problems, concepts, and techniques involved in computer systems which must interface with external devices such as process control systems, computer systems embedded within aircraft or automobiles, and graphic systems: techniques for embedded and real-time programming; trends in embedded architectures; operating systems software for these systems.

CS 528 Topics in Systems & Architecture (3)

Topics will vary from offering to offering. In-depth development of topics reflecting current research

interest of faculty. Prerequisite: as listed by instructor.

CS 530 Algorithms & Complexity

There are three questions asked of any algorithm: Is it correct? How fast is it? Can it be done better? A survey of the main techniques and methodologies for designing efficient algorithms as well as the class of problems which are currently considered intractable. Ways to cope with intractability are considered including approximation, randomized algorithms, and local search heuristics. Quantum computing and algorithms are introduced as well. Knowledge of discrete structures, data structures is assumed.

CS 531 Automata, Computability and Formal Languages (3)

Models of computation are used to study and reason about fundamental capabilities and limitations of computers. Which questions are decidable and which ones are not? What makes some problems hard and others easy? Students will explore finite specifications for languages and their uses as language generators and recognizers. Some practical applications of these technologies will be discussed. Knowledge of discrete structures is assumed.

CS 532 Cryptography and Data Security (3)

Algorithms and protocols for confidentiality, integrity, authentication and non-repudiation of stored and transmitted data. Topics include classical cryptographic methods, streams and block ciphers, Shannon's entropy and perfect secrecy, cryptanalysis, substitution permutation and Feistel networks, the Data Encryption and Advance Encryption Standards, hash functions and data integrity, secret sharing schemes, public key cryptosystems and infrastructure, digital signatures and authentication, elliptic curve cryptography, automata-theoretic and shift-register models of security systems, analog security systems. Knowledge of discrete structures and data structures required.

CS 538 Topics in Algorithms (3)

Topics will vary from semester to semester. In-depth development of topics reflecting current research interest of faculty. Sample of topics in the Algorithms & Theory area include: Algorithmic Game Theory, Computational Aspects of Evolution, Information Theory, Coding Theory, Randomized Algorithms, Combinatorial Optimization, Steganography and Digital Watermarking, Quantum Computing and Algorithms.

CS 540 Artificial Intelligence (3)

Models of knowledge and learning representation and techniques of intelligent problem solving. Topics include crisp and fuzzy rule-based and logic models, constraint satisfaction problems, probabilistic graphical models, state-based search, evolutionary population-based optimization, non-evolutionary population-based techniques, sampling-based methods, neural networks, supervised learning, unsupervised learning, reinforcement learning, planning, integrative general intelligence architectures. Knowledge of discrete structures and data structures is assumed.

CS 541 Database Systems (3)

Techniques and methodologies for the design and implementation of data-based information systems. Topics include database design, modeling and management, database query design and implementation languages, physical structures and algorithms for storage and access, data mining models, complex event processing, control of data access, security and integrity, compliance with laws and regulations for databases. Knowledge of discrete structures and data structures is assumed.

CS 542 Machine Learning (3)

Survey of basic concepts and techniques in machine learning. Topics include: supervised vs. unsupervised learning, classification and regression, neural networks, decision trees, kernel methods, lazy learners, ensemble learning, clustering methods, Bayesian classifiers, evolutionary learning, reinforcement learning and learning casual models. Knowledge of discrete and data structures assumed.

CS 543 Introduction to Systems Theory (3)

This course develops a conceptual basis and techniques for the study of systems and system properties useful in all areas of computer science. Some of the properties covered are: behavior, state, dynamics, organization, structure, hierarchy, feedback control, complexity, information, communication, and performance. The course also develops a number of examples and emphasizes the ability to use the abstract systems concepts to model and study information processing systems. Knowledge of discrete structures is assumed.

CS 548 Topics in Artificial Intelligence and Modeling (3)

Topics will vary from offering to offering. In-depth development of topics reflecting current research interests of faculty. Prerequisite: as listed by instructor.

CS 591 Independent Study (variable credit)

CS 598 Project (1-3)

CS 599 Thesis (1-6 credits)

CS 600 Colloquia in Computer Science (3)

Speakers from fields in computing and its applications present their current research activities and findings. Students are required to attend a designed number of colloquia each semester and to write reaction papers to those presentations in areas of their interest. May be taken repeatedly, but it does not count toward the 33 credit hour requirement for the M.S. degree.

Continuous Registration

CMT 600 Continuous Registration (1)

Maintaining continuous registration is a requirement for all graduate degrees. Students who have completed most course requirements but are finishing projects, capstone experiences, thesis or are satisfying Incomplete or In-Progress grades must register to maintain continuous matriculation. Course may be taken up to 6 semesters at which time it is expected that all program requirements will have been met. Credit is not used toward program completion requirements. Only S/U grades are awarded for this course.

Entrepreneurship

ENT 575 Innovation and Entrepreneurship (3)

This course provides a perspective strongly grounded in innovative thought along with a comprehensive introduction to the entrepreneur, entrepreneurship, and innovative activity. Because entrepreneurship emphasizes and values innovation, we focus on technological and creative entrepreneurial ventures that

highlight the act of innovation and its communication. An emphasis is placed on the practical formation, understanding, communication and implementation of innovative ventures-laying the groundwork for the focus of all successive courses in the entrepreneurial series. Contemporary articles, case studies, progressive texts, and applied, real-life learning is emphasized when possible.

ENT 580 Regional Entrepreneurial Environments (3)

Emphasis on environments most relevant to doing entrepreneurial business in small business and the technological environment of the Mohawk Valley and beyond. We look at opportunities and networking in viable new high tech areas (e.g., emerging nanotechnology sector) as well as technical opportunities in traditional entrepreneurial business. Topics include business model identification, personal networking, competitive and cooperative business and industry analysis, professional network, and internal and external resource management. Prerequisites: ENT 575 with concurrency.

ENT 685 Advanced Entrepreneurial Planning (3)

This course provides the culminating experience for combining innovative thought with business, finance, and theoretical arguments with an aim toward practical corporate launch, project inception, or commercialization. This course builds upon and integrates knowledge and experience gained in lower level entrepreneurship courses. Contemporary articles, case studies, progressive texts, and applied entrepreneurship are used. Real-life, practical, and community-based learning is emphasized. Prerequisites: ENT 575, ENT 580, MKT 578.

Finance

FIN 525 Financial Management Problems (3)

Provides the student with in-depth experience with the subject of Business and Corporation Finance for their future development as practicing executives. Students solve cases and problems faced by financial managers in the real world, that focus on major financial decisions and such current issues as corporate governance, securities issuance, globalization, privatization, financial analysis and planning, capital budgeting, capital structure, cost of capital, valuation, dividend policy, short/long term financing, financial markets, firm performance, and corporate restructuring.

FIN 532 Investment Strategy (3)

Introduces current technological trends market microstructure, and strategies for investment management in the financial market. Topics include (1) stock/securities market structure, (2) risk-return tradeoffs on instruments, (3) auction, negotiation, online trading mechanisms, (4) mutual fund investments, (5) asset pricing and valuation theory, (6) security/industry/company analysis, (7) stock market/equity/technical/financial statement analysis, (8) capital market theory, and (9) combining stocks with other alternative investments, and (10) portfolio management. Prerequisite: FIN 525.

FIN 545 Fixed Income and Derivatives (3)

The course offers an integrating experience to understand and apply various theoretical models on interest rates and contingent claims on financial securities in both the finite and continuous time periods. The course analyzes valuation techniques for different fixed-income securities, annuities, asset/liability, mortgages, contingent cash flows and derivative securities (options, forwards, futures, swaps and other interest rate related exotic derivatives, etc). In addition, the course offers various techniques for portfolio immunization and matching duration, hedging and investment strategies especially with significant

foreign exposures, and risk management, Overall, this course is all about applied finance and investment and targeted for advanced graduate students with strong mathematical background. This course prepares students to start careers in financial analysis and financial planning, investment banking, insurance industry, mutual funds, hedge funds, private equity funds, asset/liability and risk management, as well as for the Chartered Financial Analysts (CFA) examinations in fixed-income securities, portfolio management and quantitative analysis.

FIN 685 Seminar in Accounting & Finance (3)

An integrating experience to apply the varied skills and knowledge accumulated through the required course work to make the student competitive in capital markets. Special emphasis will be upon mastery of body of accounting and financial knowledge including significant current development on the economic and financial scene. Students acquire greater understanding of global capital markets, demonstrate the ability to use the tools and techniques of accounting and investment analysis in the valuation of assets, and provide a synthesis of all previous related course work. Prerequisites: ACC 520 and FIN 525.

Health Information Management

HIM 501 Health Care Informatics (3)

The theoretical basis of health care informatics and health information systems is presented and the use of technology to deliver health care is explored. Study of the impact of informatics on the socio-cultural environment of health care and the infrastructure to support health care informatics is a primary focus.

HIM 509 Legal Issues in Health Informatics (3)

A study of the overall legal aspects of the various dimensions of health informatics and information management. Specific applications and study will include areas of health informatics and information management, the medical staff, facility liability, consent for treatment, confidentiality of health information, computerization of health information, professional negligence/medical malpractice and other related topics.

HIM 600 Quality Improvement in Health Informatics (3)

Overview of quality improvement methods in healthcare organizations with emphasis on health information systems and informatics. Also includes topics on general workflow and human factor re-engineering, risk management, quality assessment, patient care management, and change management. Prerequisites: STA 100 and HIM 501.

Human Resource Management

HRM 518 Human Resource Management (3)

Manage human resources more effectively improving analysis and planning. Focus on the development of state-of-the-art systems which support basic business objectives, as well as foster good working relations between employees and managers.

HRM 615 Labor Relations (3)

A complete understanding of the history and development of labor management relations is critical for managers in both union and non-union organizations. Places special emphasis on the behavioral and economic underpinnings which set the stage for labor management relations in today's work settings. The

structure, process and institutional framework within which these relations occur are also studied.
Prerequisite: HRM 518.

HRM 620 Compensation (3)

Often referred to as one of the most important elements of the work place environment, the subject of compensation is examined in this course across a broad spectrum. Current theories, models and concepts are presented and analyzed in an effort to provide the basis for development of an equitable and effective pay system. Key topics included are motivation theory, performance appraisal, legal bases for pay and internal and external pay equity. Prerequisite: HRM 518. Cross listed with MGT 320.

HRM 650 Human Resource Information Systems (3)

The need to integrate human resource management with the overall stream of strategic decisions and techniques demands the support of a current and responsive human resource information system. Although the course recognizes that human resource information systems can run the gamut from paper and pencil manual systems to the most sophisticated mainframe systems, the emphasis is on microcomputer applications to which the student will be able to relate based on the comprehensive course curriculum. Concepts developed in the course focus on bridging the needs of the most senior executives in an organization with those of the operating personnel manager. Prerequisite: HRM 518.

Information Design & Technology

IDT 501 Social Information Theory (3)

Examines the role of theory in effective communication and information design. Explores theoretical approaches and practices from several disciplines (communication, cognitive science, instructional design). Applies front-end analysis and information design strategies and practices. Students work on communication and design problems from instructional environments, business, or government, and present their findings orally, visually, and in writing.

IDT 507 Information Technologies (3)

Assesses the development and social impact of information and communication technologies. Focuses on emerging technologies of the 21st century and the convergence of traditional with new media. Examines the technical features and characteristics of information and communication technologies, and assesses the evidence for significant social impact associated with their diffusion.

IDT 510 Social Media (3)

An introduction to various types of social media along with ideological and technological foundations. The emphasis on practical understanding through hand-on exercises and collaboration will help demonstrate the larger concepts of social presence and the use and effectiveness of social media in personal and professional life. Blogs and microblogs (twitter), wikis, social networking sites, including bookmarking, video and image sharing, podcasts and vlogs will be tested and evaluated.

IDT 515 Massive Online Collaboration (3)

Massive Online Collaboration often involves relatively small contributions by many people in order to accomplish large projects or tasks. One example is a Massive Open Online Course (MOOC), in which participants and course resources are distributed and students collaborate openly for the purpose of learning. In this seminar, students will participate in and analyze several different types of massive online

collaborations, depending on the student's interests. Connectivism, networked learning, creativity, design challenges and inclusiveness will be addressed as students learn about online activities that include large numbers of participants.

IDT 516 Critical Perspectives on New Media (3)

An examination of the cultural significance of new media and new media technologies. The course will explore the emergence of new media from two intersecting perspectives. First, we will examine new media within the context of twentieth century analyses of modern (particularly mass) culture. By doing so, we can explore the ways in which emerging mediums of culture expression continue, amplify, and/or break with the social and cultural logics of modern culture. Second, we will look at more recent efforts to theorize and critically assess new media. This will enable us to ask what is new about new media, and what possibilities are inherent in the new characteristics of these emerging cultural technologies. Students will engage in theoretical discussions and analyses of new media through the application of these theoretical perspectives.

IDT 518 Advanced New Media Theory and Digital Culture (3)

Studies the meaning of 'New Media' and its influence on culture. Through readings, discussions, analysis of cultural artifacts as well as a longer hands-on project, we will reveal the underlying ideas of our digital historical moment. As we analyze various modes of presentation, we will investigate the impact electronic media have had on society and explore its implications for activities such as online learning and education. Using a series of writings by pioneers in new media theory, we will place our current 21st century culture in a larger framework of established theoretical perspectives.

IDT 519 Gamification (3)

Gamification is the use of frameworks and common design tropes from the video game industry to solve problems and engage audiences. The class will have a number of readings on the subject which will be discussed during online sessions. The course will utilize modding and free Software Development Kits (SDKs) to build projects that demonstrate gamification. Programming experience is not required to take the course. Project topics will range from simple informative serious games (such as "Darfur Is Dying") to skill acquisition (such as triage training).

IDT 520 Gender and Technology (3)

Examines how gender and technology shape each other. Some topics include the history of technology, global inequalities related to technology and development, domestic worlds and public worlds, cultural constructions of gender, and gendered social relations on the Internet. The course will also include special emphasis on gender and information technology.

IDT 521 Global Communications (3)

An exploration of globalization and changing communication processes as they relate to information design and technology. Topics include economics, trade, human trafficking, technology, poverty, development, immigration, environment, and activism. The seminar will allow for opportunities to learn about global communication and practice cross-cultural and international communication skills. Students will also be analyzing key issues using current literature from a variety of fields.

IDT 522 Computer-Supported Cooperative Work (3)

"Computer-supported cooperative work" (CSCW) refers to communication or collaboration technologies

and how such technologies mediate social activities including work. There is a strong focus on the social, ethical, psychological, and other organizational effects, and how these reflect back into technology design. This online seminar will focus on the CSCW field and current trends in CSCW, and explore workplace interactions including those using electronic communication, conferencing, and collaborative project management tools. The course will cover cross-cultural ideas that affect collaboration and understanding in a globalized world, including those that relate to inequality across nations and peoples. Final projects will include a collaborative dimension involving the choice and use of collaborative work tools and analyzing their effectiveness and social implications.

IDT 523 Digital Narratives (3)

The theory and practice of creating digital narratives across a range of media is the main topic of this course. The focus will be on different applications of digital narratives that have emerged, and how these applications can be adapted to professional work in a variety of fields. Students will learn about developing a personal narrative and how it can be implemented with digital media. Effective digital design will be addressed. New tools and frameworks for storytelling with digital media will be presented.

IDT 524 Websphere Analysis (3)

Websphere Analysis is a set of emerging methods for assessing social, political and cultural relations between Web producers and users. The relationships—mediated by Web sites, texts and links—are examined mostly through qualitative techniques. The course will focus on the completion of a project including the identification of a websphere, archiving the websphere, analyzing it and writing about it. Other methods for studying and evaluating webpages and websites will be explored.

IDT 530 Research Methods for Information Design and Technology (3)

Explores a range of qualitative research methods that can be used for studying information design and technology topics, including in-depth interviewing, content analysis, focus groups, historical research, visual analysis, participant observation, case study research, and others. Reviews models and methods of research from fields including information studies, organizational behavior, anthropology, and sociology. Research methods and tools adapted for studying the Internet will be emphasized. Students will be exposed to a variety of options for use of qualitative and Quantitative methods for these papers and projects.

IDT 531 Evaluating Information Technology (3)

Focuses on editing in the context of rhetorical theory, analyzing the strategies and purposes of editing for various documents and audiences. Emphasis falls on the editor as supervisor and manager who must understand the design and production process of complete documents. A major component of the course addresses the skills and issues of editing for on-line communication and publication. Cross listed with COM 310.

IDT 534 Information Design (3)

Explores the theoretical and practical use of graphics as a form of visual communication. Topics include visual perception and forms, design theory, chart and graph theory, relationships between formatted text and graphics, and color and design concepts. Students will apply theory to the design of visuals in communication.

IDT 535 Typographic Design and Communication (3)

Investigates typographic variables and methods of organization. Verbal, visual and vocal message-making is explored through the marriage of meaning and form. This facilitates the development of an aesthetic vocabulary combined with an increased sensitivity to language. Issues of hierarchy, readability, and syntax will be examined through a series of projects. The assignments range from realistic, client-based problems to highly abstract, heuristic exercises.

IDT 536 Graphic Design (3)

An advanced exploration of the theoretical and practical application of consumer, trade and public service graphic design. Students will study the contemporary history and evolution of advertising's use of graphics as a means of visual communication. Students will create at least seven promotional pieces with emphasis on presentation and professional work. An introduction to the theory of computer-based imaging and the exploration of a variety of hands-on techniques pertaining to design creation, manipulation, and construction. Students should have a general understanding of Adobe Photoshop, Adobe Illustrator, and Adobe In Design.

IDT 541 Instructional Design (3)

Students will learn about the fundamentals of instructional design, its variations and impact on learning outcomes. Several contemporary ID models will be examined. Students will ultimately adopt a personal approach to instructional design.

IDT 545 Information Technology and Organizational Change (3)

Examines the theoretical framework of change theory and research in various fields and issues facing individuals or institutions engaged in change. Students will discuss the elements of the change process, the roles of participants in the process and implications for change agents or agencies. Students will apply knowledge of diffusion and diffusion research to a planned, ongoing or past diffusion effort, preparing recommendations or post-mortem analysis of the process. Desirability and unintended consequences of innovations will also be discussed. Non-matriculated students need permission of dean to enroll.

IDT 551 Evaluating Technology (3)

Addresses issues that information technology professionals face in selecting technology (both hardware and software) to meet desired goals. Topics include technology classification, evaluation criteria and software and hardware considerations, including the Internet and intranets. Will examine how information is shaped and modified by the technologies that are selected.

IDT 553 Principles and Projects in New Media (3)

An advanced consideration of communication theory as it relates to visual language and the ways designers use and readers process such information. Analyzes the strengths and limits of various media and applies design principles applicable to each medium and to the integration of visuals with language and sound. Students analyze and evaluate selected readings and examples and use publishing techniques to design and produce new media products.

IDT 554 Advanced Web Development and Design (3)

Considers advanced aspects of web system design and development. Issues covered include server-site application development, client-side application development, and web graphics. The user-machine interaction will be considered with a focus on user interface design principles, guidelines and standards. The advantages and disadvantages of various graphical user interfaces and object-oriented user interfaces

will be discussed.

IDT 555 Ethical and Legal Issues of the Information Age (3)

Analyzes ethical and legal issues related to information technologies. Examines the ways that technology challenges traditional ethical and legal concepts and raises old issues in new ways. Topics reflect recent patterns and developments, with particular emphasis on how technological developments shape, and are shaped by, the economic and political structure and organization of communication systems. Examines the role ethical and legal factors play in the day-to-day work of designers, producers and consumers using a series of contemporary issues as case studies.

IDT 585 Seminar in Emerging Information Technologies (3)

Takes an in-depth look at emerging technologies including but not limited to multimedia, distance learning, networking and the Internet. Reviews technical, social, economic and political factors associated with new and emerging information technologies. Examines trends in the development and diffusion of emerging information technologies. Explores, through practical application, use of emerging information technologies in educational settings.

IDT 590 Selected Topics in Information Design and Technology (3)

Provides students with the opportunity to investigate selected topics in information and design technology. Topics will typically illustrate the application of theory and research. Students may receive credit in a future semester for different topic areas.

IDT 591 Independent Study (1-3)

IDT 592 Internship (3)

Application of theory to real-life situations through placement in an appropriate work-related setting. Requires completion of assigned projects under the joint supervision of a faculty member and a professional supervisor. Prerequisite: Faculty will determine on a case-by-case basis if student is adequately prepared for an internship. The student will be required to make a proposal for an internship and IDT faculty will review each request.

IDT 599 Thesis/Project (3)

Management

MGT 607 Organizational and Management Theory (3)

Analyze major schools of management thought: traditional, behavioral, and contingency. Explore managerial roles, power styles, and conflict with respect to contemporary organizational systems through lecture, discussion, case analysis, and experiential exercises.

Management Information Systems

MIS 515 Management Information Systems (3)

Strategic uses of information that affect customers, markets, and products are becoming common today. Information is used to manage organizations, carry out strategy, control operations, and assist in decision-making. As a result, information is a resource with value equal to that of traditional assets such as

inventory, capital, and human skills. In this course students will learn to manage and use information systems and technology. The MIS course provides concepts, methods, and techniques to identify an organization's information needs and to employ systems to meet these needs. The course introduces business students to topics such as information systems, database management, information technology, expert systems, and decision support systems. [Formally BUS 515]

Management Science

MGS 511 Quantitative Business Analysis (3)

This survey course addresses the study of the scientific method as applied to management decisions. The forefront of this course addresses the development of basic statistics up to hypothesis testing. Topics coverage also includes (1) bivariate regression analysis, (2) multiple regression analysis, (3) PERT and CPM, (4) linear programming (graphic method only), (5) decision making under uncertainty (including maxi-max, mini-max, and maxi-min techniques) and (6) the basic elements of forecasting (including the classical time series model).

Marketing

MKT 505 Marketing Management (3)

Emphasizes a managerial approach in marketing decision making in the modern technology environment. Topics in this course include the marketing mix, marketing problem solving through case analysis, marketing strategy concepts and tools, and development of a strategic marketing plan. Students learn these topics and many other relative subjects through teamwork and course projects.

MKT 510 Marketing Survey Design and Data Analysis (3)

Provide prospective managers with an understanding of marketing survey procedures and data analysis techniques. Various quantitative and strategic approaches in marketing are introduced and applied in case studies and problem solving. Topics of this course include: formulation of marketing survey design, comparison of survey designs, preparation of marketing data, quantitative techniques of marketing decision analysis, managerial aspects of coordinating survey projects, and the implementation of derived strategy. Prerequisite: MKT 505.

MKT 578 Marketing for Entrepreneurs (3)

The Entrepreneurial Marketing course focuses on the key marketing strategies relevant for new venture initiation in small and growing organizations. The special challenges and opportunities involved with developing marketing strategies, and the identification of entrepreneurial opportunities from emerging trends in marketing practice. Consistent with the entrepreneurship concentration mission, emphasis is placed upon quantitative and qualitative argumentation and communication that support entrepreneurial marketing's needs for innovative solutions. These frequently require inexpensive and innovative yet valid approaches to identifying customer needs and conducting marketing research along with the design of creative approaches to marketing communications. Prerequisites: MKT 505, ENT 575.

MKT 652 Sales Management (3)

Presents the techniques for delivery of effective selling in business-to-business situations and explores the components necessary to achieve effective management of the sales function. Included within this presentation is exploration of the sales function, the duties and necessary skill set for effective B2B

selling, training, and selection decisions in sales management, the role of negotiation and forecasting in sales management, and ethical and legal issues confronted in the B2B sales environment. Prerequisite: MKT 505.

MKT 654 Services Marketing Management (3)

Introduces students to the challenges and innovative strategies that are ubiquitous to the marketing of services. Topics covered in this course include commonalities and differences between goods and services, the critical role of customer contact employees in service delivery, customer relationship management, the design and execution of the service delivery process, measurement and management of service outcomes, and the emerging roles of globalization and technology in service provision. Prerequisite: MKT 505.

Mathematics

MAT 500 Topics in Applied Mathematics (3)

This course will introduce students to several topics in the area of mathematical methods. Topics includes: complex numbers, determinants and matrices, ordinary differential equations, Fourier series, partial differentiation, multiple integrals and vector analysis. Prerequisite: Calculus II (MAT 122) or equivalent.

MAT 502 Linear Algebra

This course is a graduate level Linear Algebra course, with an emphasis on applications including linear models and linear estimation. The student will build on the knowledge obtained in undergraduate math courses such as Linear Algebra and Differential Equations, learn about special matrices, singular value decomposition, pseudo inverse, quadratic forms, Hilbert spaces and least squares, and acquire an introduction to linear models and linear estimation. A computational environment is integrated through the course. Prerequisites: MAT 340 or MAT 260 or permission of instructor.

MAT 505 Introduction to Probability

Sample space and counting, axioms and rules of probability, conditional probability and independence, modeling with discrete and continuous random variables, jointly distributed random variables, characteristics of random variables, transformation of random variables, moment generating functions. law of large numbers and central limit theorem, statistical applications, random number generation and simulations of systems. Prerequisite: MAT 253

MAT 521 Financial Mathematics I – Theory of Interest

Theoretical foundation and a practical understanding of interest theory in finite and continuous time will be developed. This theory includes the fundamentals of how annuity functions are applied to the concepts of present and accumulated value for various cash flow streams, and how this is used for further planning in valuation, pricing, duration, and investment. Applications to amortization of lump sums, fixed income securities, depreciation, mortgages, and related concepts will be discussed. In addition, short sales and derivatives for financial risk management will be covered. Prerequisites: MAT 505 Introduction to Probability or equivalent.

MAT 530 Number Theory and Its Applications (3)

Introductory course in Number Theory that will introduce students to the basic concepts as well as some

modern applications. Topics include: prime numbers, Greatest Common Divisors, The Euclidean Algorithm, congruences, Fermat's Little Theorem, primality testing, etc. Applications of Number theory: cryptography, pseudorandom numbers, etc. Prerequisites: MAT 380 or MAT 381 or MAT 413 or permission of instructor. Cross listed with MAT 430.

MAT 550 Times Series Analysis (3)

This course is an introduction to the theory and applications of time series analysis and modeling. The students will acquire a working knowledge of time series and forecasting methods as applied in economic, engineering, and natural and social sciences. Topics covered include stationary processes, ARMA and ARIMA processes, multivariate time series, state-space models, the Kalman Recursion and spectral analysis. A computational environment for simulation and data analysis is integrated throughout the course. Prerequisite: MAT 370 or Equivalent.

MAT 590 Selected Topics in Mathematics (3)

Provides students with the opportunity to learn specific topics not offered via regular coursework. Topics will be selected by faculty and will require a mix of theoretical and applied knowledge as appropriate. Prerequisite: Permission of an instructor.

Mechanical Engineering

ME 571 Principles of Mobile Robotics (3)

Principles and approaches of mobile robotics are taught. The emphasis is placed on robot mobility which allows a mobile robot to move through an environment to perform its tasks, covering the aspects of locomotion, sensing, localization and motion planning. Also covered are computer modeling and programming of mobile robots. Prerequisites: Physics I and Calculus III, or approved by instructor.

ME 572 Principles of Robot Manipulators (3)

Principles of robot manipulators are taught, including the kinematics, dynamics, trajectory generation and control. Also covered are computer modeling and analysis of robot manipulators, and programming of robot manipulators. Prerequisites: Physics I and Calculus III, or approved by instructor.

Nanoscale Science and Nanoscale Engineering

NNSE 504 Chemical Principles of Nanotechnology (1)

This course introduces the chemical principles behind nanoscale phenomena critical to nanomaterials, nanoengineering, nanoscience and nanobiology. Fundamental chemical principles are taught using concrete examples relevant to nanotechnology and nanotechnological applications. Topics covered include the chemical structure of nanomaterials, energetics and kinetics, reactivity, catalysis, and characterization. Prerequisites: Open to graduate students in the CNSE or Departments of Physics, Mathematics, Engineering, Computer Science or Biology, and with permission of instructor. No prior chemistry course required.

NNSE 506 Foundations of Nanotechnology I (1)

Building upon core competencies from fundamental science and engineering disciplines, the Foundations of Nanotechnology sequence is designed to provide students with the core competencies needed in preparation for advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering Tracks. Students may select any number of the following 5 associated module topics.

- **Crystallinity and Diffraction for Nanomaterial Systems** - Fundamental descriptions of crystalline structure and experimental determination for nanomaterial systems. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Phase Equilibria for Nanoscale Systems** - First, second, and third laws of thermodynamics as applied to nanoscale systems; activity and the equilibrium constant; solutions; phase relations (including the phase rule); heterogeneous equilibria; free-energy-composition diagrams and their relation to phase transitions; phase diagrams. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Nanoscale Kinetics and Transport** - Discussion of time-dependent mass transport in nanomaterials systems through a formal treatment of diffusion theory. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Nanoscale Mechanics of Materials** - Introduction to atomic and continuum scale mechanics appropriate to nanoscale systems and assemblies, including the role of defects. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Practical Solid State Quantum Theory** - Practical descriptions of how physical properties and behaviors of materials become dominated by quantum effects as length scales approach atomic dimensions. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Principles of Nanobiology** - Introduction to basic concepts in nanobiology and the interface between nano and biological systems. Open to graduate students in the CNSE; others by permission of instructor.

NNSE 507 Foundations of Nanotechnology II (1)

Building upon core competencies from fundamental science and engineering disciplines, the Foundations of Nanotechnology sequence is designed to provide students with the core competencies needed in preparation for advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering Tracks. Students may select any number of the following 5 associated module topics.

- **Mathematical Methods in Nanoscale Research** - Introduction to the critical mathematical tools needed for research and education in nanotechnology. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Science of Nanoscale Laboratory Techniques** - Overview of the scientific basis of key technologies in experimental nanotechnology research, including laboratory safety. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Solid State Quantum Theory IA** - Introduction to the quantum theory of nanoscale material systems and devices. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Molecular Materials** - Structure, chemistry, thermodynamics and physical properties of long chain molecules and molecular structures, including polymers, electronic polymers, proteins, carbon nanotubes and fullerenes, for applications in nanoscale systems, architectures, and devices. Prerequisite: Open to NNSE students; others by permission of instructor.

- **Solid State Quantum Theory IB** - Quantum origins of physical properties in nanoscale systems. Prerequisite: Open to NNSE students; others by permission of instructor.

NNSE 508 Foundations of Nanotechnology III (1)

Building upon core competencies from fundamental science and engineering disciplines, the Foundations of Nanotechnology sequence is designed to provide students with the core competencies needed in preparation for advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering Tracks. Students may select any number of the following 5 associated module topics.

- **Particle-Solid Interactions in Nanomaterials** - Interaction of high energy photons, electrons, and ions with matter in the context of atomic scale characterization of nanoscale materials, systems, and devices. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Nanoscale Analytic Techniques** - Physical basis of the major analytical methods used for nanoscale materials analysis. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Practical Modeling for Nanoscale Systems** - Principles of modeling structures and processes at the nanometer scale, including meshing techniques, finite element analysis, and molecular dynamics. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Nanoscale Electronic and Magnetic Properties** - Description and atomic scale origins of the electronic and magnetic properties of nanoscale materials, structures, and devices. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Optical/Photonic Properties of Nanostructures** - The interaction between electromagnetic waves and nanoscale materials, structures, and devices (molecular systems, thin film systems, etc.) is treated with particular attention to the increasing role of quantum effects as length scales approach atomic dimensions. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Interfacial Properties of Nanosystems** - Discussion of interfacial processes and dynamics in nanobiological systems including surface interactions, transport across interfaces and signaling. Open to CNSE students with introductory biology coursework or completion of Principles of Nanobiology; others by permission of instructor.

NNSE 509 Foundations of Nanotechnology IV (1)

Building upon core competencies from fundamental science and engineering disciplines, the Foundations of Nanotechnology sequence is designed to provide students with the core competencies needed in preparation for advanced coursework and individual research in the various CNSE Nanoscale Science and Nanoscale Engineering Tracks. Students may select any number of the following 5 associated module topics.

- **Deposition Techniques for Ultra-Thin Films** - Overview of deposition and processing methodologies used in ultra-thin film growth and related nanomaterial syntheses. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Nanoscale Device Principles** - The physical principles underlying the design and operation of modern electronic and optoelectronic nanoscale devices and associated device architectures. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Noncrystalline and Soft Nanomaterials** - Introduction to the amorphous state of nanomaterials,

including the structure of liquids and glassy nanoscale solids. Introduction to "soft" nanoscale materials including biological films, membranes and membrane polymers, liquid crystals and colloids. Prerequisite: Open to NNSE students; others by permission of instructor.

- **Introduction to NEMS/MEMS** - Design fundamentals of nanometer scale electro-mechanical systems. Prerequisite: Open to NNSE students; others by permission of instructor.
- **Nanoscale Surfaces and Interfaces** - Introduction to surface structure, properties, thermodynamics and analysis and their role in nanotechnology. Prerequisite: Open to NNSE students; others by permission of instructor.

NNSE 512 Quantum Theory of Solids II (3)

Applications of the quantum theory of nanoscale material systems. Fundamentals of Hartree-Fock theory and applications to band structure of ultra-small systems. Quantum harmonic crystal theory. Localized and long-ranged impurity states. Electron-phonon and electron-electron interactions. Practical applications of band structure in nanoscale semiconductor systems. Quantum conductivity in nanowires and nanostructures. Landauer theory: conductance of quantum channels.

NNSE 513 Economic Principles of Nanotechnology Management (3)

The principles of economics greatly impact the development of new technologies. Students are introduced to concepts such as markets, production, and consumer demand in order to understand how firms, customers, and government make decisions that will influence the creation, diffusion, and adoption of nanotechnologies. Students will also learn tools of strategic decision making critical to the nanotechnology development. Prerequisite: Consent of Instructor.

NNSE 514 Theoretical Foundations of Nanoeconomics (3)

This course introduces students to the theories, models, and methods used by economists to understand the creation impact of emerging nanotechnologies. Microeconomic models of firm production, consumer utility, and profit maximization will provide insight into the creation and adoption of technologies. Macroeconomic models will focus on topics of growth and international trade in high technology industries. Students will also be introduced to econometric research techniques. Prerequisites: Students must have completed NNSE 513 and permission of instructor.

NNSE 518 Nanoelectronic Devices, Circuits, and Systems (3)

The objective of this course is to provide the students with the knowledge of designing emerging nanoelectronic devices and using these devices to build future computing systems. After an introduction to CMOS devices and circuits, the course will cover CMOS design and simulation topics. Then, emerging nanoscale components that are beyond CMOS devices will be introduced, including: carbon nanotube based devices, quantum dots and molecular devices. More attention will be paid to the applications of these devices in implementation of future computers. The memory and logic architectures that take advantage of the properties of the emerging devices will be discussed. The recently developed CMOS-nano hybrid computing system will also be reviewed. Prerequisites: NNSE 509 Nanoscale Device Principles, NNSE 616 Nanoscale Semiconductor Devices or permission of the instructor.

NNSE 563 Academia, Business, and Government: Opportunities and Challenges in Science & Technology Partnership (3)

Science and technology advancements are powerful transformers of society. Government influences the outcomes of science, and in turn, science influences the actions of government, business and academic.

Weekly seminar classes will help prepare graduate students to understand and learn the dynamics of developing and managing science and technology policies from individual and combined business, government, and academia perspectives which will help students examine and discuss practical applications, including public-private collaborative efforts in funding research, development, and technology deployment.

NNSE 565 Managing the Adoption of Technological Innovation (3)

A review of alternative models for commercializing technology such as limited exclusive teaming, strategic alliances, and arm's length product development within the context of nanoscience-based technologies and the distributed economy. Main issues driving the creation and operation of strategic alliances will be identified as the foundation for understanding the commercialization process for nanoscience-based technologies.

NNSE 570 Nanochip Manufacturing Technology (3)

Introduces the basic principles of integrated circuit "nanochip" operation and presents, in detail, the fundamentals of nanochip fabrication including a description of typical obstacles encountered. Critical aspects are discussed with respect to current nanochip designs to achieve maximum speed and future changes to improve this response with low power loss. The course will also describe structural and functional differences between Logic, Dram, Flash etc. types of devices. Working principles of standard fabrication techniques in the semiconductor industry will be overviewed as well as detailed yield-control strategies necessary to keep an IC 'Fab' plant profitable. Prerequisites: Open to undergraduate seniors and graduate students in the CNSE or Departments of Physics, Chemistry, Computer Science, or Biology with permission of instructor.

NNSE 603 Nanomaterials Processing (3)

This course is intended for second or third year graduate students with a research focus or interest in the processing of nanoscale materials. This course will cover practical aspects of the scientific principles guiding the growth of both organic and inorganic nanomaterials by both vapor phase and solution phase processing. These materials include carbon nanostructures (nanotubes, nanospheres, graphene sheets, etc.), biological systems (polypeptides, proteins, DNA), and metallic nanostructures (Si nanowires, metal whiskers, etc.). Emphasis will be placed on developing an understanding of the basic growth mechanisms and characteristics of each class of material and growth technique. Prerequisite: Approval of instructor.

NNSE 605 Integrated Circuit Manufacturing I (3)

Covers basic tools and principles of chip construction. Describes structural and electrical differences between logic, dram, flash, etc. types of devices. Covers in detail how a chip is constructed and some of the problem areas encountered. Fundamental modules of ion implantation, pecvd, Lpcvd, Rie behavior, control of profiles, diffusion, Lithography, yield control tactics, deposition, oxidation kinetics, as well as future changes in the technology over the next 10 years will be covered. Future changes will be understood in terms of factors that drive speed of Microprocessors.

NNSE 608 Principles of Reliability for Semiconductor and Nanoscale Applications (3)

Ensuring reliability is commonly one of the most important and time consuming (expensive) efforts accompanying process and product development, yet the degradation processes in small (e.g. nanoscale) devices often challenge our understanding of materials science and the physical principles of failure. This course will introduce the student to the fundamentals of reliability theory and the science of materials

degradation as related to semiconductor, MEMS and NEMS devices leading to an appreciation and an understanding of how materials fail. Basic statistics and thermodynamics as applied to reliability will be discussed. Upon completion of this, detailed descriptions of the known failure mechanisms will be described as well as accelerated reliability testing and data manipulation to extract failure rates and to design qualification testing programs to ensure reliability. Prerequisite: Permission of instructor.

NNSE 609 Electronics Packaging Fundamentals (3)

Introductory course to the field of electronic packaging. This course provides an overview of the various types of integrated circuit packaging, the manufacturing processes used to make them, assembly of the packages, and printed circuit boards (PCBs). In addition, 3D integration will be presented in the context of present research and development in the field. This course will give the student a fundamental knowledge of what drives packaging R&D and manufacturing. In addition, the student will receive an overview of what is needed to accommodate the ever increasing need for advanced packaging requirements necessary to meet the demands of increasing integrated circuit function / density. Prerequisites: Foundations sequence and permission of instructor.

NNSE 612 Optical Processes in Nanoscale Solids (3)

This course provides a theoretical overview of the optical properties of solids and the experimental methods used to characterize them including ellipsometry, photorefectance and second harmonic generation. The course will primarily focus on semiconductor and metal single crystal solids. Building upon the optical properties of these bulk materials, this course describes research into the changes in bulk materials optical properties due to nanoscale phenomena such as quantum confinement. The theory behind photorefectance and second harmonic generation will also be presented, in addition to the use of photorefectance to measure stress induced changes in the critical point of silicon. Prerequisites: Foundation modules including, Solid State Quantum 1A and 1B, Nanoscale Electronic and Magnetic Properties, and Optical /Photonic properties of Nanostructures and NNSE 512 Quantum Theory of Solids II, or permission of the instructor.

NNSE 615 Semiconductor Optoelectronic Devices and Nanophotonics (3)

Introduction to semiconductor optoelectronic devices for communications and other applications, covering design, operating principles and practical device features. Review of relevant semiconductor physics. Optical processes of semiconductors, waveguides, and microcavities. Introduction to photonic crystals and photonic bandgap materials.

NNSE 616 Nanoelectronic Semiconductor Devices (3)

This course focuses on the solid-state quantum properties and nanoscale technology of various semiconductor-based electronic and optical devices. This course will make special emphasis on the properties of various types of junctions (p-n junctions, heterojunctions, metal-semiconductor junctions) leading to various electronic devices such as field effect transistors (FETs), metal-oxide-semiconductor FETS (MOSFETs), high electron mobility transistors (HEMTs), etc. In addition, a large portion of the class is devoted to the study of fundamentals of semiconductor-based photodetectors, various types of detection schemes (Schottky, MSM), and Solar Cell technology. The importance of miniaturization and heterostructures in modern high-speed quantum-effect devices will be emphasized throughout. Prerequisite: NNSE 509.

NNSE 617 Principles of Low-Dimensional Nanoelectronics (3)

The objective of this course is to provide students with advanced principles and knowledge of emerging 1-D and 2-D nanoelectronic devices. The first part introduces fundamental principles of nanoscale engineering and key properties of 1D/2D nanostructures. The second part focuses on specific device concepts, device physics, and potential applications in nano-based information processing (computing) and information storage (memory). Particular attention will be paid to low-dimensional nanostructures in implementing future-generation nanoelectronic systems engineered at nanoscale physical dimensions. Prerequisites: NNSE 509 Nanoscale Device Principles, NNSE 616 or permission of the instructor.

NNSE 618 (formerly 517) Science and Nanoengineering of Semiconductor Materials and Nanostructures (3)

Physical properties of nanostructured semiconductors critical to nanoscale optoelectronic devices. Bandgap engineering of nanostructures, two-, one- and zero-dimensional systems, transport in nanoscale superlattices and quantum wells. Carrier diffusion and scattering, ballistic transport, optical absorption, excitonic effects, radiative and non-radiative recombination, optical scattering in nanostructured semiconductors. Prerequisite: NNSE 511.

NNSE 621 Quantum Transport (3)

This course will cover fundamentals of carrier transport in reduced dimensional semiconductors. The course is intended for graduate students interested in understanding a bottom-up approach to current flow, beyond the classical approach based on drift-diffusion and Boltzmann transport equations. We will review the electronic properties of materials that are being actively investigated and examine the unique transport properties that arise in these materials. Current flow based on Landauer equations to more advanced Non Equilibrium Green's Function formalisms will be covered, and their relation to T-Matrices will be discussed. The lectures will be supplemented with Matlab examples. Prerequisites: NNSE 507: Quantum 1A,B; NNSE 512, or permission of instructor.

NNSE 622 Thermodynamics and Statistical Mechanics of Small Systems (3)

This course addresses the fundamental concepts and methods of statistical thermodynamics relevant to the investigation of nanomaterials and their application to the development of new nanoscale electronic, biomedical devices and sustainable energy nanotechnologies. Topics covered include fundamental concepts and methods in thermodynamics and statistical mechanics, statistical thermodynamics of surfaces and interfaces, phase transitions, wetting phenomena, molecular dynamics and Monte Carlo simulations, transport processes and chemical kinetics. Prerequisites: Foundation of Nanotechnology modules. It is recommended a student has passed the qualifying exams in Nanoscale Science or Nanoscale Engineering. Permission of instructor.

NNSE 624 Finance and Valuation of Nanotechnology Based Firms (3)

This course will cover elements of entrepreneurial finance, focusing on nanotechnology based start-up ventures. The first part of the course will cover models that can be used for valuing nanotechnology based firms. The second part will address key questions which entrepreneurs in nanotechnology based industries face: how much money can and should be raised, when should it be raised and from whom, and how funding should be structured. The subject aims to prepare students for these decisions as entrepreneurs in nanotechnology related industries. Prerequisites: Open to graduate students in the CNSE or Departments of Economics, School of Business, with permission of instructor.

NNSE 625 Quantum Processes in Solids and Nanostructures (3)

This course addresses the fundamental concepts and methods of quantum mechanics as relevant to the investigation of atomic and electronic properties of nanomaterials and nanodevices. Topics covered include the mathematical foundations and physical principles of quantum mechanics, exactly solvable quantum models, perturbation theory, variational principles, quantum theory of scattering, and system of many-particles. Prerequisites: Foundation of nanotechnology modules and NNSE 512 or equivalent and permission of instructor.

NNSE 626 Quantum Processes in Solids and Nanostructures II (3)

This is the second half of a one-year course that addresses the fundamental concepts relevant to the investigation of nanomaterials and nanodevices by applying the methods of quantum mechanics and nanoscale statistical mechanics to examine the atomic and electronic properties of surfaces and nanostructured materials and devices. Topics covered include atomic and electronic structure of clean and adsorbed surfaces, scanning tunneling microscopy, surface kinetics and dynamics, scattering view of nanoscale quantum transport, single-electron tunneling, and molecular-scale electronics.

NNSE 636 Bio-MEMS and Bio-NEMS (3)

Cross-disciplinary application of MEMS and NEMS to the biological sciences. Topics include the interaction of living cells/tissues with nanofabricated structures, microfluidics for the movement and control of solutions, and the development of I/O architectures for efficient readout of bio-reactions.

NNSE 640 NanoTechnology and Photovoltaics (3)

Topics focus on the application of nanoengineered materials and structures to photovoltaic technologies and include impact on performance and operation. Prerequisites: Foundations sequence, permission of instructor.

NNSE 641 Principles of Sensors: Chemical, Biological and Physical (3)

Fundamentals of sensor design, transduction techniques, and tailored coatings for chemical, biological and physical sensing applications, sensitivity and selectivity concerns, array design and pattern recognition algorithms.

NNSE 644 Nanoelectrochemical Systems (3)

This course will explore the theory and application of electrochemical processes as they apply to integrated nanoelectrochemical systems for use in sustainable ecosystems, including fuel cells, electrolyzers, supercapacitors, batteries, and photochemical solar cells. As an introduction, a thorough review of classical electrochemical principles, concepts and characterization methods will be given, including the nature and structure of the double layer, as well as the kinetics of electrode reactions. This will be followed by a discussion of and extension of these principles to the nanoscale. The discussion will focus on this area of active research; will involve an examination of recent literature in the field, including recent progress in electrocatalysis with nanoparticles supported on a variety of materials. Specific attention will be given to nanostructured thin film electrodes and electrolytes which are applicable to integrated nanoelectrochemical systems. The course will include the introduction to and hands on use of an electrochemical scanning microscope. Prerequisites: Foundations (506) courses and permission of instructor.

NNSE 646 Electrochemical Methods (3)

This course is a companion course to CNSE 644 and will explore both the theory and application of

electrochemical methods to nanoelectrochemical systems. As an introduction, a thorough review of classical electrochemical principles will be given, including the nature and structure of the double layer, as well as the theory of charge transfer and the kinetics of electrode reactions. This will be followed by a discussion of basic methods of modeling nanoelectrochemical systems. This will be followed by an in-depth discussion of current applications of potential sweep methods of analysis, polarographic and pulse voltammetry, controlled current techniques, hydrodynamic methods involving forced convection, as well as techniques based upon concepts of impedance and scanning probe techniques. The discussion will include a focus on areas of active research and will involve an examination of recent literature in the field. The course will include individual class projects with hands on use of the rotating ring disk electrode and the scanning electrochemical microscope. Prerequisites: NNSE 644 and permission of instructor.

NNSE 651 Fundamentals of Nanolithography I (3)

Chemistry of photoresists used in high volume manufacture of integrated circuits including resists based on i-line (365 nm), DUV (248 nm), ArF (193 nm), and Extreme Ultraviolet (13.5 nm) wavelengths. Additionally, the chemistry of SU8 resists used in MEMs application will also be covered. Optical properties useful for understanding high volume manufacture of integrated circuits will be covered including: off-axis illumination, overlay, optical proximity corrections, mask error enhancement factor, phase-shift masks, diffraction limits, and outgassing and optics contamination. Additionally, the physics and chemistry of the role of secondary electrons in EUV will also be covered. The course will be taught once every two years, alternating with NNSE 652. Prerequisites: Successful completion of both NNSE 507 Molecular Materials and NNSE 508 Optical/Photonic Properties of Nanostructures; and the permission of the instructor. NNSE-508 may be taken concurrently with NNSE-651 Nanolithography.

NNSE 652 Fundamentals of Nanolithography II (3)

Design data creation and manipulation. Mask making. Metrology and inspection for lithography. Prerequisites: Foundations sequence, permission of instructor.

NNSE 654 Charged Particle Optics (3)

Fundamentals of charged particle optics including conventional and immersion lens approaches to focusing. Aberration theory and source technology. Prerequisites: Foundations sequence, permission of instructor.

NNSE 657 Bioconjugation Techniques and Purification Strategies for Nanobiology (3)

This course will give a detailed overview of reactive groups in biochemical systems and introduce an assortment of conjugation chemistries for biomolecular crosslinking and surface modification for both macro- and nano-biological applications. Likewise, general approaches for separation and analysis of biomolecules and conjugation agents will be discussed. The course will initially focus on the chemical properties of biomolecular functional groups and their reactions in polar environments (with a focus on aqueous systems). Single/multifunctional, cleavable, photo-activated cross-linkers and reagents will be discussed, including self-assembled monolayer chemistry and similar modification strategies for various nanostructured metallic and semiconductor interfaces. Analytical methods and purification strategies such as dialysis, filtration, and liquid chromatography etc. will be covered. Prerequisites: NNSE 506 "Intro to Nanobiology", NNSE 508 "Nanobiointerfaces" and NNSE504 "Chemical Principles". Undergraduate coursework in Biochemistry (protein structure/function) and Organic & Inorganic Chemistry and permission of Instructor.

NNSE 658 Biomedical Nanotechnology (3)

This course will introduce in-depth knowledge of biomedical nanotechnology and nanomedicine. Emphasis will be on the applications of nanotechnology in stem cell research, tissue engineering, drug delivery, gene therapy, cancer therapy, diagnostics, imaging, and nanotoxicity. Students with satisfactory completion of the course will have a demonstrated knowledge of how to apply nanotechnology to address biological and biomedical problems. Prerequisites: NNSE 506 Principles of Nanobiology/NNSE 508 Interfacial Properties of Nanobio Systems and permission of instructor.

NNSE 659 Introduction to Clinical Nanomedicine (3)

This course is designed to introduce graduate students to fundamentals of human anatomy and physiology as related to current and emerging applications in nanomedicine. Students will gain a basic understanding of the structure and function of major body systems including the musculoskeletal, cardiovascular, respiratory, gastrointestinal, urinary, and neurological systems. This course provides a comprehensive overview of challenges and opportunities for biotechnological innovation in health care. Students will actively engage in discussions about nanomedicine applications that are on the market or currently under development including nano-enabled pharmaceuticals, medical devices, in vivo and ex vivo diagnostics, biomaterials, and imaging techniques. Prerequisites: Enrollment in this course will be restricted to students who have passed the qualifying exam in their constellation and have successfully completed at least one graduate level nanobioscience lecture course or nanobio foundations courses, etc. Students who do not meet these criteria may petition the instructors for special permission to enroll.

NNSE 661 Semiconductor Metrology (3)

A detailed overview of current characterization methods critical to transistor fabrication, on-chip interconnection, lithography, defect detection and characterization, and process yield analysis. This course would cover the myriad techniques in use in or near semiconductor fabrication facilities that are critical to achieving acceptable process yields. Prerequisite: Permission of Instructor.

NNSE 664 Innovation and Entrepreneurship in Nanotechnology (3)

Innovation is the creation of value through the development of new products or processes. Innovations can improve efficiency, productivity, and quality. An entrepreneur is a leader who recognizes market opportunities and creates and implements innovations to meet the demand. This course introduces students to the theory, process, and practice of innovation and entrepreneurship. Topics covered include the innovation process, individual and corporate entrepreneurship, financing and legal issues in high-tech entrepreneurship, and developing an entrepreneurial plan. Students will perform a market analysis, prepare a business plan, and prepare a grant proposal for a nanotechnology they are familiar with. Prerequisites: One year of graduate research experience or consent of instructor.

NNSE 665A Electron Beam Analysis of Nanostructures (3)

First Part of a two-semester course on the application of electron beam techniques to the extraction of morphological, chemical and crystallographic information about nanomaterials. This course will provide a detailed understanding of the scanning electron microscope including electron probe formation, electron solid interactions, and the measurement and analysis of a variety of emitted signals including secondary and backscattered electrons, x-rays and cathodoluminescent.

NNSE 667 Surface Analysis of Nanostructures (3)

This course will look at a variety of currently used surface analytical techniques for the examination of

nanomaterials and nanomaterial systems including Rutherford backscattering, nuclear reaction analysis, secondary ion microanalysis, proton excited x-ray analysis, atomic force microscopy, ultrasonic force microscopy, low energy electron diffraction, and x-ray photoelectron spectroscopy and compare them with regard to sensitivity, spatial and depth resolution, sample requirements and the kinds of information they can provide in the examination of nanostructures and materials. Prerequisite: Permission of Instructor.

NNSE 670 Transmission Electron Microscopy (4)

Basics of nanoscale analysis using specialized transmission electron microscope instrumentation such as scanning TEM, HRTEM, cryo-TEM and TEM-STM. Course emphasizes practical training in the operation of advanced TEM instrumentation, stressing hands-on laboratory sessions and a semester-long project involving a specimen of the student's choosing (a task related to the student's research program in nanotechnology is strongly encouraged). Suitable project topics include: specialized sample preparation for nanostructures (FIB & tripod polishing); amorphous & nanocrystalline materials; imaging and spectroscopy of quantum wells and quantum dots; interface nanostructure and segregation. Prerequisites: Permission of instructor.

NNSE 673 X-ray Scattering and Crystallography for Nanoscale Materials and Structures (3)

Application of advanced x-ray scattering and diffraction techniques for the investigation of nanomaterials, nanodevice structures, and nanoscale modulated systems. Prerequisites: Foundations sequence, permission of instructor.

NNSE 680 Seminar in Nanosciences and Nanoengineering (1-6)

Advanced individual theoretical and experimental work, conferences, and reports. May be taken in either semester or both.

NNSE 681 Seminar in Nanobiology (1)

This course introduces students to current topics in nanobiology through both reading and discussion of current scientific literature. Critical reading of scientific papers in the field of nanobiology will serve as the basis for weekly discussions. Students will participate in choosing current, high-quality research articles for discussion and will be expected to present at least one article during the course of the semester. In addition to exploring the field of nanobiology, this course is intended to familiarize students with scientific literature. Students will learn to use online databases and search engines to find articles and will learn how to critically review both the written articles and the experimental research procedures. Students will be evaluated based upon participation in discussion sessions, as well as through one in-class oral presentation. Prerequisites: Open to students with permission of instructor; also open to superior undergraduate seniors with the approval of their advisers and the written consent of their department chairs.

NNSE 682 Entrepreneurship, Law and Emerging Technologies (1)

This course offers students the opportunity to work with faculty and students from Albany Law School and will expose them to the science, art and law of entrepreneurship and emerging technologies. Students will not only receive grounding in the law of business development and intellectual property, but will also be steeped in the science behind nanoscale technologies so that they can practice effectively in this rapidly emerging field. This course follows a nontraditional schedule. Students will be expected to

participate in a one day introductory workshop. The remainder of the course will be delivered in by weekly sessions. Please contact faculty member for more schedule details. Prerequisite: Permission of instructor.

NNSE 683 Seminar in Nanoscale Engineering (1)

This course introduces students to current topics in nanoengineering through both reading and discussion of current scientific literature. Critical reading of scientific papers in the field of nanoengineering will serve as the basis for weekly discussions. Students will participate in choosing current, high-quality research articles for discussion and will be expected to present at least one article during the course of the semester. In addition to exploring the field of nanoengineering, this course is intended to familiarize students with scientific literature. Students will learn to use online databases and search engines to find articles and will learn how to critically review both the written articles and the experimental research procedures. Students will be evaluated based upon participation in discussion sessions, as well as through one in-class oral presentation. Prerequisites: Open to students with permission of instructor; also open to superior undergraduate seniors with the approval of their advisers and the written consent of their department chairs.

NNSE 689 Nano and Public Health Internship (3-6)

The internship program at either institution will offer concentrations in the areas of: epidemiology, environmental health, biomedical sciences, health policy, nanoscience, nanoengineering, nanobioscience, or nanoeconomics. These internships will be in support of research for the NanoLife initiatives which focuses on environmental and human health and safety of engineered nanomaterials. Internship rotations may be full-time or part-time. Each credit represents a minimum of 80 hours of work with a host agency or organization. A paper and an oral presentation are required. Prerequisite: Admission to the MPH program or CNSE graduate program.

NNSE 695 Introduction to Research Problems in Nanosciences and Nanoengineering (3)

Individually directed research studies into areas of current research interest in nanosciences and nanoengineering. Prerequisite: Consent of faculty instructor.

NNSE 696 Introduction to Research Problems II (3)

Individually directed research studies in areas of current research interest in nanoscale science and nanoscale engineering to be taken in second semester of graduate study at CNSE. Will conclude with delivery of research results at the end of the semester. Prerequisite: Completion of NNSE 695 and consent of research advisor.

NNSE 697 Master's Research in Nanoscale Science (1-9)

Individually directed research studies in Nanoscale Science for Master's degree students. Prerequisite: Permission of instructor.

NNSE 698 Master's Research in Nanoscale Engineering (1-9)

NNSE 699 Masters Thesis in Nanosciences and Nanoengineering (2-6)

NNSE 731 Current Topics in Molecular Materials and Architectures (3)

Individually directed research studies into areas of current research interest in molecular materials and architectures. Pre-requisite: Permission of instructor.

NNSE 737 Current Topics in Optoelectronic Materials, Architectures, and Devices (3)

Individually directed research studies into areas of current research interest in optoelectronic materials, architectures, and devices. Pre-requisite: Permission of instructor.

NNSE 742 Current Topics in Nanosystems Sciences and Technologies (3)

Individually directed research studies into areas of current research interest in nanosystems sciences and technologies. Pre-requisite: Permission of instructor.

NNSE 750 Thin Film Single and Multilayered Material Structures (3)

Individually directed research studies into areas of current research interest in thin film single and multilayered material structures. Pre-requisite: Permission of instructor.

NNSE 756 Nanomaterials for Nanotechnology (3)

Individually directed research studies into areas of current research interest in nanomaterials for nanotechnology. Pre-requisite: Permission of instructor.

NNSE 762 Nanomaterials for Nanoscale Materials Modeling, Characterization and Metrology (3)

Individually directed research studies into areas of current research interest in nanomaterials for nanoscale materials modeling, characterization, and metrology. Pre-requisite: Permission of instructor.

NNSE 780 Current Topics in Nanosciences and Nanoengineering (1-3)

Selected topics of current interest in nanosciences and nanoengineering such as molecular self-assembly phenomena, emerging hybrid material and system integration protocols, and advanced topics in molecular materials and architectures; optoelectronic materials, architectures, and devices; nanosystems sciences and technologies; thin film single and multilayered material structures; nanomaterials for nanotechnology; and nanoscale materials characterization, modeling, analysis, and metrology.

NNSE 784 Special Topics in Nanosciences and Nanoengineering (1-6)

Selected coverage of specialized topics in non-traditional areas where nanosciences and nanoengineering play an important role, such as design, growth, and properties of nanomaterials, including metals, semiconductors, polymers, and chemical and biological materials; integration, processing, testing and qualification of these materials in integrated nanocircuitry, micro- and nano-systems and sensors, and integrated optics; nanoelectronics; bioelectronics; telecommunications; wireless communications; optical devices and components; leading edge metrology; and sensor-on-a-chip devices for energy, environment, and defense applications. Often staffed by guest lecturers and speakers.

NNSE 810 Research in Nanosciences and Nanoengineering (1-15)

Research in nanosciences and nanoengineering for students working beyond the Master's degree level. Consent of the Dean of the school or the doctoral student's advisory committee required. Residence credit earned in this course becomes applicable upon satisfactory completion of all other requirements established for the Ph.D. degree in nanosciences and nanoengineering.

NNSE 812 Research in Thin Film Single and Multilayered Material Structures (3-15)

Research in Thin Film Single and Multilayered Material Structures for students working beyond the Master's degree level. Consent of the Dean of the school or the doctoral student's advisory committee required. Residence credit earned in this course becomes applicable upon satisfactory completion of all other requirements established for the Ph.D. degree in nanosciences and nanoengineering.

NNSE 814 Research in Optoelectronic Material, Architectures, and Devices (3-15)

Research in Optoelectronic Material, Architectures, and Devices for students working beyond the Master's degree level. Consent of the Dean of the school or the doctoral student's advisory committee required. Residence credit earned in this course becomes applicable upon satisfactory completion of all other requirements established for the Ph.D. degree in nanosciences and nanoengineering.

NNSE 816 Research in NanoSystems Sciences and Technologies (3-15)

Research in NanoSystems Sciences and Technologies for students working beyond the Master's degree level. Consent of the Dean of the school or the doctoral student's advisory committee required. Residence credit earned in this course becomes applicable upon satisfactory completion of all other requirements established for the Ph.D. degree in nanosciences and nanoengineering.

NNSE 818 Research in Nanomaterials for NanoTechnology (3-15)

Research in Nanomaterials for NanoTechnology for students working beyond the Master's degree level. Consent of the Dean of the school or the doctoral student's advisory committee required. Residence credit earned in this course becomes applicable upon satisfactory completion of all other requirements established for the Ph.D. degree in nanosciences and nanoengineering.

NNSE 820 Research in Nanomaterials Modeling, Characterization, Analysis and Metrology (3-15)

Research in Nanomaterials Modeling, Characterization, Analysis, and Metrology for students working beyond the Master's degree level. Consent of the Dean of the school or the doctoral student's advisory committee required. Residence credit earned in this course becomes applicable upon satisfactory completion of all other requirements established for the Ph.D. degree in nanosciences and nanoengineering.

NNSE 822 Research in Molecular Materials and Architectures (3-15)

Research in Molecular Materials and Architectures for students working beyond the Master's degree level. Consent of the Dean of the school or the doctoral student's advisory committee required. Residence credit earned in this course becomes applicable upon satisfactory completion of all other requirements established for the Ph.D. degree in nanosciences and nanoengineering.

NNSE 899 Doctoral Dissertation in Nanosciences and Nanoengineering (1-12)

Prerequisites: Admission to doctoral candidacy, completion of all other credit requirements and benchmark requirements in doctoral program.

Network and Computer Security

NCS 511 Information Assurance Fundamentals (3)

Introduction to the field of information assurance with a focus on management issues. Topics include an

overview of data, computer, and network security fundamentals, including threats and countermeasures. Topics given detailed coverage include risk management, disaster recovery, business continuity planning, legal and regulatory issues, and operations security.

NCS 515 Linux Networking (3)

Covers the command line, shell scripting, system administration, and networking services for the Linux operating system. System administration topics include the Linux command line usage, managing users, shell scripting, system services, system hardening, and software installation. Linux networking topics include networking services DNS, SSH, DHCP, routing, and security.

NCS 521 Data Communications (3)

Data communications is a rigorous treatment of advanced topics in the technology of communicating digital information over public and private communications facilities. The topics include general principles, LANs, WANs, and related topics. These topics are covered in: lectures, individual exercises, team exercises, and interactive competitive team projects.

NCS 522 Network Administration (3)

This course is designed to provide students with the foundations, advanced level knowledge and skills in system administration in the UNIX and MS Windows server environments. Students will gain an understanding of core system administration topics and techniques and acquire the ability to identify major tasks in administering server systems, manage primary services on the system, employ basic security and performance tuning techniques, and troubleshoot common system problems.

NCS 531 Computer Security (3)

Investigation and detailed study of computer security principles, mechanisms and implementations to ensure data protection and security of computers systems; Course will focus on computer security issues in both UNIX and Windows operating systems, database security, understand the systems issues in building secure computing platforms, computer security threats and attacks, including vulnerabilities in the password authentication system, file system, virtual memory system, and learn how to respond to potential violations. Specific topics to be examined include access control, security policies, entity authentication, defense methods against malicious logic and writing secure programs. Prerequisite: NCS 511.

NCS 532 Network Intrusion Prevention and Detection (3)

This course is a fast paced examination of the specialized security field of firewalls and intrusion detection systems (IDS). The course provides more detailed background and need for firewalls and IDS. Specific topics to be covered include firewall designs/architectures, configuring PIX, VPN, Host-based and Network-based IDS. Prerequisite: NCS 541.

NCS 541 Network Security (3)

This course provides an introduction to the field of network security. Specific topics to be examined include threats and vulnerabilities to network architectures and protocols, Botnets, E-mail security, IP security, Web security, network attack propagation modeling (traffic analysis, traceback mechanisms), and Network security management techniques such as firewalls and IDS. Prerequisites: TEL 502, NCS 511.

NCS 542 Advanced Network Protocols and Standards (3)

A rigorous course covering the principles, standards, and practices of data communications protocols with emphasis on the TCP/IP protocol suite. The topics will include: reference model, Network Access layer protocols, Internet layer protocols, Transport layer protocols, and Application layer protocols. These topics are covered in: lectures, individual assignments, on-line assignments and an interactive competitive team project. Prerequisite: NCS 521 or permission of instructor.

NCS 543 Secure Protocols (3)

Advanced study of cryptographic security protocols to provide TCP/IP security at various layers of the network protocol stack. Topics include protocols for network authentication, Key Exchange, Key Management, link layer security, routing security (IPSec), transport and application layer security, including (SSL/TLS, SSH, PGP), and security protocols in wireless networks. Prerequisites: NCS 541, CSC 553.

NCS 552 VoIP and Multimedia Security (3)

This is an advanced level course on multimedia traffic security. It reviews the general knowledge and techniques for streaming data traffic, such as VoIP and multimedia. The security challenge unique to such traffic will be discussed, such as disruption of service, theft of service, and violation of confidentiality. The relevant data encryption and communication parties authentication techniques will be covered. Prerequisite: NCS 541.

NCS 562 Wireless and Mobile Networks (3)

The course is an advanced introduction to principles, standards, and practices of wireless and mobile communications. Specific topics include fundamentals of radio propagation and channel models; signal processing in wireless systems; error control and coding; Cellular technologies, spread spectrum techniques; satellite communications; wireless LANs and Bluetooth. Basic knowledge of networking assumed.

NCS 563 Wireless Security (3)

Provides advanced coverage of wireless networks and the special security problems they pose. Topics include measures taken to secure wireless personal area networks (PANs), wireless local area networks (LANs), cellular wireless networks, and ad-hoc wireless networks. Threats, vulnerabilities and countermeasures specific to each type of network will be enumerated and studied in detail. The treatment of ad-hoc wireless network security will cover secure routing protocols and intrusion detection systems. Prerequisites: TEL 560, NCS 541.

NCS 590 Special Topics in Network and Computer Security (3)

An in-depth study of selected topics based on: new developments in the field, more in-depth treatment of topics than covered in regular courses, or topics not normally covered in a graduate program in Network and Computer Security.

NCS 597 Research Project (Variable 1-3)

Upon the approval of the advisor, students will research, design, solve and implement a graduate project. The students must complete a total of 3 credits of Research Project to fulfill the degree requirements.

NCS 599 Thesis Research (Variable 1-6)

Upon approval of the advisor, the student will research and write an original work on a significant topic in the field of Network and Computer Security. The students must complete a total of 6 credits of Thesis Research to fulfill the degree requirements.

Nursing

NUR 500 Theoretical Foundations for Nursing Practice (3)

Historical influences that have impacted upon the development of nursing are explored. Theory-based nursing is emphasized as learners discuss and critically reflect upon the relevance and significance of nursing as an art and science. Philosophical views of selected nurse theorists and their theories are critically examined for application to nursing practice, administration, and research. Nursing theory within the paradigm of people, health, nursing and environment are applied to the practice of nursing and promotion of health, research, moral reasoning, caring and standards of professional nursing. Personal philosophies of nursing are explored and drawn from these theories as learners critically reflect upon their personal values, ongoing learning and transforming practice in the advanced practice role of professional nursing.

NUR 503 Advanced Nursing, Health Policy, and the Health Care Systems (3)

Students learn to evaluate and integrate power, management, and leadership theories in the implementation of advanced nursing practice for culturally diverse communities, families, and individuals within the health care delivery system. Essential tools to facilitate the development of strategies to impact on health care policies and quality management are discussed. The historical and current role of the caring and learned profession of nursing is explored. Trends in the macro system are critically evaluated for their political and social impact on health care delivery systems and the environment. Political implications and the action of the advanced practice nurse as clinician, educator, administrator, leader, manager, change agent, collaborator and consultant are analyzed and researched. The central focus is the development of advanced professional practice.

NUR 505 Foundations of Teaching and Learning in Nursing Education (3)

The learners are introduced to the foundations of teaching and learning theories and strategies in nursing education. Learners will explore cognitive, psychomotor and affective learning domains. Learners will investigate various learning environments pertinent to nursing education. Learners will develop a beginning appreciation for the role of the professional nurse educator in academia. Learners will engage in critical reflection on how nurse educators facilitate learning and learner development. Teaching and learning theories lay the foundation for understanding the socialization process of learners. Learners will identify various influences unique to teaching and learning. Pre/co-requisites: NUR 500, or permission of instructor.

NUR 512 Integrative Therapies (3)

Concepts of holistic nursing and integrative medicine as they apply to self-care and to client populations are critically examined. Principles of integrative medicine will be presented in comparison to traditional or complementary medical care. Treatment modalities will be introduced within the context of psychoneuroimmunology and quality of evidence available to the practitioner. Complementary and alternative therapies (CAM) will be investigated within the framework of evidence-based practice and care along the full continuum of prevention.

NUR 513 Clinical Instruction and Evaluation (3)

This course examines the roles and functions of the clinical nurse educator. This course provides a practical approach to clinical nursing instruction, including the teaching/learning process with a focus on adult learning theory. Evidence-based teaching and evaluation methodologies and their application to the clinical experiences will be discussed, with emphasis on the process of educating a diverse nursing student body. Trends and issues that impact nursing and contemporary nursing education in clinical practice will be explored.

NUR 514 Health Assessment (2)

Complete health assessment is explored through seminar discussion and laboratory practice. Content focuses on the acquisition of assessment skills of the healthy and ill individual. Prerequisite: Undergraduate health assessment course; registered nurse. (Note: this course will act as a refresher course for those registered nurses whose undergraduate health assessment course was greater than five years ago.)

NUR 515 Advanced Health Assessment for Nurse Educators (3)

Health assessment will focus on the caring and in-depth assessment expertise needed by advanced practice registered nurses: history taking; communication; physical and mental examination; psychological, cultural, and social assessment. Advanced assessment skills needed to develop clinical problem solving, critical reflection, and decision making will be discussed. Knowledge from the behavioral and health sciences, nursing theory, and research will be drawn upon to assist the student in formulating therapeutic interventions that will promote, maintain, or restore health for people and communities. Data about the assessment, diagnosis, management, and evaluation of common and simple problems facing client populations will be explored. Students will demonstrate advanced assessment skills needed to develop critical reflection and decision making and will demonstrate their clinical and decision making expertise in faculty supervised clinical competencies and simulated clinical experiences.

NUR 522 Financial Management for Nurses (3)

Utilizing basic principles of health care economics for fiscal management and budgeting, the learner examines budgets and budgeting, reimbursement and regulations, strategic planning and monitoring, forecasting and decision-making, management information systems, and business plans. Utilization of these principles is then applied to the development of a patient service or organizational service financial plan and/or budget.

NUR 524 Program Planning and Development (2)

Program planning provides a concise, practical, critically reflective approach to planning, managing, and evaluating health programs within an acute or community based health care delivery system. A variety of theoretical and health system models are applied to program planning. The program planning process is presented with illustrations of how this process provides fiscally sound, sustainable change in a variety of practice and collaborative environments.

NUR 526 Legal and Regulatory Issues in Health Care (3)

Legal/regulatory issues that impact the advanced professional practice of nursing are examined. The origins of law and the judicial system are explored to appreciate the various legal aspects of the health care delivery system. These include, but are not limited to, state codes, nurse practice acts, licensure, disciplinary bodies, civil liability, malpractice, and other relevant areas, such as ethical codes and

standards of practice on nursing and health care. Critical reflection on legal/regulatory change and the integration of professional nursing standards are utilized to develop and enhance ongoing learning and professional development.

NUR 531 Family Theory (2)

Family theories are explored using research from a multidisciplinary, caring, and culturally diverse approach. A variety of assessment techniques and instruments are introduced and applied to identify family health status, risks, and problems. A theoretical foundation in assessment and planning for family intervention is provided.

NUR 532 Educational Leadership (3)

The advance practice roles of the nursing education leader are explored. Collaboration, research, leadership, change, and professionalism are emphasized as they relate to nursing education and preparing nurse leaders for the 21st century. The influences of changing social conditions, cultural and moral issues, and educational trends are explored and applied to current and future programs in nursing. The significance of faculty development and public service are also of special foci.

NUR 534 Nurse Educator Role (3)

The nurse educator of the 21st century requires expertise in planning, delivering, and evaluating the outcomes of learning experiences. Learners will explore the roles and responsibilities of nurse educators within academia and institutional settings. The historical role of the nurse educator will be investigated. Key legal and ethical standards that affect the teaching/learning environment and relationships will be examined. Learning theories, styles, and techniques appropriate to adult learning will be considered as they apply to diverse learning environments and contextual material. Finally, evidence-based interventions and various approaches for evaluating teaching effectiveness will be explored.

NUR 535 Curriculum Development in Nursing Education (3)

Learners are introduced to principles of curriculum and course development. Foundational concepts and essential components of curriculum planning are identified for inclusion in course design; incorporating diversity of educational settings and course delivery methods. Discussion of issues relevant to nursing education and curriculum, including the perspectives of multiple stakeholders, are also explored. Course design is examined as building blocks to curriculum development. Emphasis is placed on peer collaboration and teamwork as integral to the process of course and curriculum design in nursing education. Prerequisites: NUR 505 or matriculation in CAS Nursing Education.

NUR 536 Measurement and Assessment (3)

Theoretical principles of curriculum and teaching learning theory are correlated to measurement and assessment principles. Included are ethical, legal, and social issues involved in educational testing. Course content addresses the nature, administration and interpretation of tests encountered in the education of nurses. Prerequisites: NUR 505, NUR 535, or matriculation in CAS Nursing Education Program.

NUR 541 Nursing Leadership Institute: Key Competencies in Long Term Care (3)

Management processes within nursing in long term care will be examined. The students' knowledge, skill, and disposition are developed by examining the role of the long term care nurse administrator in relation to strategies utilized for professional practice, effective leadership, critical thinking, regulatory

oversight, and human resource management. Prerequisite: Permission of instructor.

NUR 542 Advanced Leadership in Long Term Care

Leaders will examine nurse leadership competencies and apply principle of leadership. Topics include quality improvement, financial management, regulatory compliance, team development and systems management. Emphasis will be placed on concepts utilized to direct and evaluate nurses and health care teams' performance and the quality of patient care within their facility.

NUR 545 Instructional Methodologies and Design (3)

Supported by theoretical foundations, assessment of learning needs, instructional design, and method selection are explored in this course through design of a lesson and use of design models. Critical reflection is used to assess understanding of theoretical underpinnings of instruction and student attainment of course learning. The learner will apply instructional design and methodology principles to lesson design for a variety of teaching-learning venues while collaborating with peers. Course and lesson development, along with evidence-based instructional methods, will be integrated throughout the course. Prerequisites: NUR 500, NUR 505, or matriculation in CAS Nursing Education Program. Pre/Co-requisite: NUR 535.

NUR 555 Clinical Pharmacology (3)

Pharmacology and therapeutics for primary, acute and long-term care patients are emphasized with the focus on the clinical application of the major classifications of drugs. Disorders, symptoms and diseases affecting people throughout the lifespan are examined from a comprehensive pharmacological management perspective. The legal parameters for prescription writing and protocols are included. Theory and research findings related to current treatment modalities and the complexities of compliance are applied. Pre/Corequisite: NUR 570.

NUR 560 Nursing Research Methods (3)

The research process for quantitative and qualitative research studies is critically examined. The methods of scientific inquiry, problem identification, use of underlying theories and conceptual models, research design, measurement, and data collection analysis, and ethical considerations are applied to the development of a research proposal. Critical analysis of existing research studies and learner reports are used to further refine the development of research skills. The significance of research findings to practice environments in health care systems, administration, education and ongoing research activities are identified as they relate to evidence based practice in nursing. Critical reflection upon one's developing role as a professional in advanced practice is explored as it relates to participation and collaboration in research activities within health care systems and communities.

NUR 566 Advanced Health Assessment (3)

Health assessment will focus on the caring and in-depth assessment expertise needed by nurse practitioners: history taking; communication; physical and mental examination; psychological, cultural, and social assessment. Advanced assessment skills needed to develop clinical problem solving, critical reflection, and decision making are introduced. Knowledge from the behavioral and health sciences, nursing theory, and research will be drawn upon to assist the student in formulating therapeutic interventions that will promote, maintain, or restore health for people and communities. Prerequisites: NUR 514 or completion of undergraduate health assessment course within the past 5 years. Pre/Co-requisites: NUR 500, NUR 570, and NUR 531 for family and gerontology nurse practitioner majors. Co-

requisites: NUR 567

NUR 567 Advanced Health Assessment Clinical (2)

Data about the assessment, diagnosis, management, and evaluation of common and simple problems facing client populations will be explored through clinical experiences and computer simulations. Students will master advanced assessment skills needed to develop critical reflection and decision making and will demonstrate their clinical and decision making expertise in on-campus laboratory experiences and in faculty supervised clinical experiences in communities of culturally diverse people. (4 hr. laboratory experience per week) Prerequisite(s): NUR 514 or undergraduate health assessment course within the past five years. Pre/co-requisite(s): NUR 500, NUR 570, and NUR 531 for family and gerontology nurse practitioner majors. Co-requisite(s): NUR 566

NUR 570 Clinical Pathophysiology (3)

Identify the physiological basis of common and specific health and disease states encountered in primary care nursing practice and distinguish those processes that are ongoing in the human body that can be altered by interventions from those that cannot. Prerequisite: Undergraduate anatomy and physiology or permission of instructor.

NUR 571 Primary Care & Health Promotion I (3)

Health promotion, disease prevention and pathophysiology are applied to individual and community based interventions grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health and the treatment of illness. The identification of the factors that influence risk reduction, self-care and healthy lifestyle choices across the health illness continuum of individual clients and the community are explored. Opportunities to critically reflect on the roles of the nurse practitioner as case manager, educator and collaborator are explored and applied to promote the health and well-being of individuals and families from a variety of socioeconomic and cultural backgrounds to ensure the delivery of appropriate, individualized health care. Topics addressed include conditions of the eyes, ears, nose, throat; head and neck; dermatology; respiratory; gastrointestinal; immunological and multi-system encountered in the primary care setting. Prerequisites: NUR 500, NUR 531, NUR 566, NUR 567, NUR 570. Pre/co-requisites: NUR 555, NUR 560. Co-requisite: at least one credit of NUR 580.

NUR 572 Family Health Promotion and Disease Prevention Across the Lifespan (3)

Health promotion and disease prevention concepts are applied to individuals across the lifespan, families and community based interventions grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health. The promotion of health, prevention of illness and identification of the factors that influence risk reduction, self-care and healthy lifestyle choices across the health illness continuum of individual clients and the community are emphasized. The roles of the nurse practitioner are explored to enhance the health and well being of clients and their families from a variety of social and cultural backgrounds to ensure the delivery of appropriate, individualized health care. Prerequisites: NUR 500, NUR 566, NUR 567, and NUR 570. Co-requisites: NUR 555, NUR 560, NUR 531, student must be concurrently be enrolled in NUR 580.

NUR 574 Adult Health Promotion and Disease Prevention (2)

Health promotion and disease prevention concepts are applied to individual and community based interventions grounded in theories of growth and development, epidemiology, and social policies that

influence the achievement of health. The promotion of health, prevention of illness and identification of the factors that influence risk reduction, self care and healthy life style choices across the health illness continuum of adult clients and the community are emphasized. The roles of the nurse practitioner are explored to enhance the health and well-being of adult clients and their families from a variety of social and cultural backgrounds to ensure the delivery of appropriate, individualized health care. Prerequisites: NUR 500, NUR 566, NUR 567, NUR 570. Co-requisites: NUR 582. Pre/Co-requisites: NUR 555 and NUR 560.

NUR 576 Foundations for Gerontological Health Promotion and Disease Prevention (3)

Health promotion and disease prevention concepts are applied to the older adult using both individual and community based interventions that are grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health. The promotion of health, prevention of illness, and identification of the factors that influence risk reduction, self care, and healthy life style choices across the health illness continuum of older adult clients and the community are emphasized. Opportunities to critically reflect on the roles of the nurse practitioner as case manager, educator and collaborator are explored to enhance the health and well being of clients and their families. Ethical and legal issues as well as social and cultural factors are explored to ensure the delivery of appropriate, individualized health care. Prerequisites: NUR 500, NUR 566, NUR 567, BIO 570. Pre/Co-requisites: NUR 555, NUR 560, NUR 531, NUR 584.

NUR 578 Adult/Gerontological Health Promotion and Disease Prevention (3)

Health promotion and disease prevention concepts are applied to adults across the lifespan, families, and community based interventions grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health. The promotion of health, prevention of illness and identification of the factors that influence risk reduction, self-care and healthy lifestyle choices across the health illness continuum of adult clients across the lifespan and the community are emphasized. The roles of the nurse practitioner are explored to enhance the health and well-being of these clients and their families from a variety of social and cultural backgrounds to ensure the delivery of appropriate, individualized health care. Prerequisites: NUR 500, NUR 566, NUR 567, NUR 570. Pre/Co-requisites: NUR 555, NUR 560, NUR 531. Co-requisite: NUR 586.

NUR 580 Beginning Level Family Clinical (2-3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to individuals and families with a variety of diverse cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to clients provide the students with challenges to expand their knowledge, skills, and role as a nurse practitioner. The focus of this clinical is to become proficient in obtaining histories and performing physical exams in the clinical setting with minimal supervision. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide supervision and guidance in the clinical setting as students develop critical thinking abilities with beginning diagnostic decision-making skills. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 500, NUR 566, NUR 567, NUR 570. Co-requisites: NUR 531, NUR 555, NUR 560.

Co-requisite(s): NUR 571 or NUR 572.

NUR 582 Beginning Level Adult Clinical (2)

Clinical experience provides an opportunity to deliver primary care within a community based setting to adults with a variety of diverse cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to clients provide the students with challenges to expand their knowledge, skills and role as a nurse practitioner. The focus of this clinical is to become proficient in obtaining histories and performing physical exams in the clinical setting with minimal supervision. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide supervision and guidance in the clinical setting as students develop clinical thinking abilities with beginning diagnostic decision-making skills. The student will complete 5.5 contact hours per week per credit. Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file, NUR 500, NUR 566, NUR 567, NUR 570. Co-requisites: NUR 531, NUR 555, NUR 560, must be concurrently enrolled in NUR 574.

NUR 584 Beginning Level Gerontological Clinical (2)

Clinical experience provides an opportunity to deliver primary care within a community based setting to the older adult population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by older adult clients in diverse health care settings. Opportunities to deliver primary care to clients provide the students with challenges to expand their knowledge and skills. The focus of this clinical is to become proficient in obtaining histories and performing physical exams in the clinical setting with minimal supervision. The information obtained needs to be accurately documented utilizing SOAP format. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical setting under contract with the School of Nursing and Health Systems. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 566, NUR 567, current NYS RN license, current CPR certification, current complete health clearance on file in the SON&HS office. Corequisites: NUR 555, NUR 560, NUR 576.

NUR 586 Beginning Level Adult/Gerontology Clinical (3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to adults of all ages with a variety of diverse cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to clients provide the students with challenges to expand their knowledge, skills, and role as a nurse practitioner. The focus of this clinical is to become proficient in obtaining histories and performing physical exams in the clinical setting with minimal supervision. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide supervision and guidance in the clinical setting as students develop clinical thinking abilities with the beginning diagnostic decision-making skills. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 500, NUR 566, NUR 567, NUR 570. Pre/Co-requisites: NUR 531, NUR 555, NUR 560. Co-requisite: NUR 578.

NUR 591 Independent Study (Variable credit)

NUR 608 Health Care Systems Seminar (3)

Administrative systems issues within the health care environment are examined. Knowledge, skill and disposition are developed by analyzing economic, regulatory, and information systems within the health care environment. Opportunities are created to critically reflect and analyze the impact of application of

health care systems on resource utilization, performance improvement, collaboration, information-handling and achievement of strategic outcomes. Prerequisites: NUR 500, NUR 503, NUR 560, MGT 607, HIM 501. Pre/Co-requisites: NUR 522, NUR 526, HRM 518, CSC 507.

NUR 610 Nursing Administration Seminar (3)

Administrative issues within nursing and the health care environment are examined. Knowledge, skill, and disposition are developed by examining the role of the nurse administrator in relation to strategies utilized for advanced professional practice. Opportunities are created to critically reflect on effective approaches necessary for effective leadership, change management, collaboration, quality improvement, conflict resolution, and resource utilization in culturally diverse environments. Prerequisites: NUR 500, NUR 503, NUR 560, MGT 607. Pre/Co-requisites: NUR 522, NUR 524, NUR 526, HRM 518, CSC 507.

NUR 611 Nursing Administration Practicum (3)

In partnership with a nurse administrator, management and leadership principles are applied in this culminating experience. The role of the nurse administrator is assessed and analyzed in relation to professional practice, effective leadership, change management, collaboration, evaluation of the quality, and effectiveness of nursing practice, policy development, and resource utilization. The practicum provides the opportunity for critical reflection on the advanced practice role in nursing administration. Synthesis of management and leadership theoretical principles, practice guidelines and pertinent research are emphasized. Occasions exist to demonstrate knowledge, skill, and disposition in administrative practice through the development and implementation of the practicum objectives. Within the framework of the objectives, each learner designs, implements, and evaluates an administrative project. (180 practicum hours are required.) Prerequisites: Current New York Registered Professional Nurse license, current CPR certification, complete health clearance on file. Pre/Co-requisite: NUR 524, NUR 608, NUR 610, NUR 624.

NUR 624 Grant Proposal Seminar (3)

Selection of potential research and project proposals are critically explored for funding. Identification of funding sources and the development of a grant proposal for submission to a potential funding agency is emphasized. Faculty facilitation and seminar provide an interactive learning environment for learners to present their proposals in progress and to obtain critical reviews of their work from all participants. Focus is on the ongoing development of critical analyses skills, participation in scholarly exchanges of ideas, and research utilization within nursing administration, education, and practice. Prerequisites: NUR 500, NUR 560.

NUR 626 Thesis or Project (Variable 1-3)

Student has the option of implementing an approved research or project proposal for up to 3 credits. Prerequisites: NUR 500, CSC 507, NUR 560.

NUR 627 Culminating Seminar for Nurse Administrators (2)

The synthesis of health care related theory, research and practice are the emphasis of this culminating experience. Opportunity for collaboration with peers, faculty and mentors is provided as learners develop and participate in research and scholarly activities. Inquiry into scholarly works is explored to further enhance nursing knowledge, applied research in health care delivery, and professional practice. Personal values and beliefs are re-examined as the learner describes one's transformed view of self and advanced practice as a nurturing professional in nursing. Critical reflection of one's personal growth and

commitment to ongoing professional development is examined within the context of caring and development of professional excellence. Pre/Co-requisites: NUR 611; Learner must be within 3 credits of graduation at completion of culminating seminar.

NUR 634 Adult Learning and Development (3)

Students in this course study major theories of adult development as they inform our understanding of student development. Principles of student development are examined as a framework for evidence based nursing education. Students' explore how adult development occurs, how development or change is assessed, the role of the environment in promoting adult development, and the application of developmental theory to promote adult learning and development.

NUR 635 Evaluation Approaches in Nursing Education (3)

A foundation for formative and summative evaluation approaches is presented in this course. The focus is on types of evaluation. Course and program evaluations are addressed using various models and strategies. Benchmarking, accreditation standards, and evaluation concepts are explored and actualized within the context of nursing education. Critical reflection and aspects of collaboration are incorporated in nursing education evaluation in multiple settings. Evaluation trends and issues facing professional nurse educators are also examined. Prerequisites: NUR 505, NUR 535, NUR 545. Pre/Co-requisite: NUR 536.

NUR 645 Internship in Nursing Education (3)

The internship provides directed educational experiences as an academic nurse educator. Students design, implement, and evaluate their teaching practicum under the guidance of a nurse educator mentor. The practicum is intended to provide a format for the learner to integrate content from all courses within the Master of Nursing in Education program, and apply the material to their teaching-learning environment. Learners are expected to demonstrate evidence-based instruction, learning activity design and learner assessment. Focus is on critical reflection, collaboration, professional role development, and faculty responsibilities as the student engages in the advanced practice role of nurse educator. Prerequisites: NUR 505, NUR 515, NUR 535, NUR 536, NUR 545, or matriculation in CAS Nursing Education Program. Pre/Co-requisite: NUR 635.

NUR 651 Primary Care and Health Promotion of Children and Adolescent Clients (3)

Theory, research, and the pathophysiology required to assess, evaluate and manage pediatric and adolescent clients are applied to a variety of health and wellness issues encountered in the primary care setting. The advanced roles of the nurse practitioner are applied to promote the health and well-being of pediatric/adolescent clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 571, NUR 580.

NUR 652 Family Primary Health Care I (3)

Theory, research, and the pathophysiology required to assess, evaluate and manage clients across the lifespan are applied to a variety of problems. Topics addressed include conditions of the eyes, ears, nose, throat; head and neck; dermatology; respiratory, gastrointestinal, and immunological and multi system diseases encountered in the primary care setting. The advanced roles of the nurse practitioner are applied to enhance the health and well being of clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 572, NUR 580. Pre/Co-requisites: NUR 503, student must be concurrently enrolled in at least one (1) credit of NUR 670.

NUR 653 Adult Primary Health Care I (2)

Theory, research, and the pathophysiology required to assess, evaluate and manage adult clients are applied to a variety of problems. Topics addressed include conditions of the eyes, ears, nose throat; head and neck; dermatology; respiratory, gastrointestinal, immunological and multi-system diseases encountered in the primary care setting. The advanced roles of the nurse practitioner are applied to enhance the health and well-being of adult clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisite(s): NUR 574, NUR 582. Co-requisite(s): at least one (1) credit of NUR 672. Pre/Co-Requisite(s): NUR 503.

NUR 654 Gerontological Primary Health Care I (3)

Theory, research, and the pathophysiology required to evaluate and manage older adult clients are applied to a variety of problems. Conditions, diseases and communicable diseases of the eyes, ears, nose, throat; head and neck; the skin, hair, nails; respiratory, hematological and immunologic systems encountered in the primary care setting are studied. The advanced roles of nurse practitioner as case manager, educator and consultant are explored to enhance the health and well being of older adult clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 576, NUR 584. Co-requisite: NUR 503/504A, and at least one (1) credit of NUR 674.

NUR 656 Adult/Gerontological Primary Health Care I (3)

Theory, research, and the pathophysiology required to assess, evaluate and manage adult clients across the lifespan are applied to a variety of problems. Topics addressed include conditions of the eyes, ears, nose, throat; head and neck; dermatology; respiratory, gastrointestinal, immunological, and multi system diseases encountered in the primary care setting. The advanced roles of the nurse practitioner are applied to enhance the health and well-being of adult clients across the lifespan from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 578, NUR 586. Pre/Co-requisite: NUR 503. Co-requisite: at least one credit of NUR 676.

NUR 657 Gender Health (3)

Theory, research, and pathophysiology are applied to the holistic evaluation and management of gender specific acute and chronic health problems throughout their lifespan. Emphasis is on health promotion and disease prevention activities in primary care settings. Basic areas explored are sexually transmitted infections, urinary tract infections, transgender populations, testicular examinations, sexual disorders, gender specific examinations, disease screenings, management and care of normal pregnancy including prenatal and postpartum visits. Critical reflection will assist the student in exploring the professional roles of case manager, educator, and consultant to enhance the health and well-being of individuals and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 571, NUR 580.

NUR 658 Women's Health Care (2)

Theory, research, and pathophysiology are applied to the holistic evaluation and management of women who experience a variety of acute and chronic health problems throughout their lifespan. Emphasis is on health promotion and disease prevention activities in primary care settings. Basic areas explored are gynecological examinations, disease screenings, management of normal pregnancy, and care of the pregnant woman during prenatal and postpartum visits. Critical reflection will assist the student in exploring the professional roles of case manager, educator, and consultant to enhance the health and well-being of women and their families from a variety of socioeconomic and cultural backgrounds. Prerequisite(s): NUR 574, NUR 582 or NUR 572, NUR 580; Pre/Co-requisite(s): NUR 503, and either

NUR 653 and three (3) credits of NUR 672, or NUR 652 and three (3) credits of NUR 670.

NUR 659 Gynecological Health Care of the Older Adult (2)

Theory, research, and pathophysiology are applied to the evaluation and management of the women who experience a variety of acute and chronic health problems beyond their childbearing years. Emphasis is on health promotion and disease prevention activities in primary care settings. Basic areas explored are gynecological examinations, disease screenings; and the management of acute and chronic health issues of the older adult woman. Critical reflection will assist the student in exploring the advanced roles of case manager, educator, and consultant to enhance the health and well-being of women and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 576, NUR 584. Co-requisite: NUR 503/504A, NUR 654 and three credits of NUR 674.

NUR 661 CAS: Gerontological Health Promotion and Disease (1)

This course will focus on the advanced practice role of the Gerontological Nurse Practitioner in health promotion, disease prevention, maintenance of function, and prevention of disability in community dwelling older adults. Elders are viewed within a physical, psychological, social, cultural and spiritual context, and within a family and community environment.

NUR 662 CAS: Gerontological Primary Health Care I (1)

Builds on the concepts of health promotion and disease prevention in community dwelling older adults, begins the management of conditions, syndromes and communicable diseases encountered by Gerontological Nurse Practitioners in the primary care setting. Focus is on enhancement of functional ability and optimum health and well being of older adults and their families from a variety of socioeconomic and cultural backgrounds. Prerequisite: NUR 661, permission of dean.

NUR 663 CAS: Gerontological Primary Health Care II (1)

Building on the concepts of health promotion and disease prevention in community dwelling older adults, apply theory, research and pathophysiology to advance the management of conditions, syndromes and communicable diseases encountered in the primary care setting. The role of the gerontological nurse practitioner focuses on enhancement of functional ability, optimum health and well being of older adults and their families from a variety of socioeconomic and cultural backgrounds. Prerequisite: NUR 662, permission of dean.

NUR 664 Primary Care and Health Promotion II (3)

Health promotion, disease prevention and pathophysiology are applied to individual and community based interventions grounded in theories of growth and development, epidemiology, and social policies that influence the achievement of health and the treatment of illness. The identification of the factors that influence risk reduction, self-care and healthy life style choices across the health illness continuum of individual clients and the community are explored. Opportunities to critically reflect on the roles of the nurse practitioner as case manager, educator, and collaborator are explored and applied to promote the health and well-being of individuals and families from a variety of socioeconomic and cultural backgrounds to ensure the delivery of appropriate, individualized health care. Topics addressed include those involving increasingly complex cardiovascular, peripheral vascular, pulmonary, renal, endocrine, hematology, neuromuscular, psychiatric problems, and office emergencies encountered in the primary care setting are addressed. Prerequisites: NUR 659, NUR 503, NUR 571, NUR 580 and at least one credit of NUR 670. Co-requisite: At least one credit of clinical.

NUR 665 Adult/Gerontological Primary Health Care II (3)

Theory, research, and pathophysiology are expanded to assess, evaluate and manage adult clients of all ages with a variety of increasingly complex cardiovascular, peripheral vascular, pulmonary, renal, endocrine, hematology, neuromuscular, psychiatric problems, and office emergencies encountered in the primary care setting are addressed. The professional roles of the nurse practitioner are synthesized to enhance the health and well-being of adult clients across the lifespan and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 655 and at least one (1) credit of NUR 676. Co-requisites: At least one (1) or two (2) credits of NUR 676 or four (4) credits of NUR 686.

NUR 667 Gerontological Primary Health Care II (4)

The theory, research, and pathophysiology required to evaluate and manage older adult clients with a variety of cardiovascular, peripheral vascular, pulmonary, acute and chronic renal and gastrointestinal, neuromuscular and psychiatric problems, and office emergencies encountered in the primary care setting are addressed. The professional roles of the nurse practitioner as a case manager, educator, and consultant are explored to enhance the health and well being of the older adult clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 654 and at least one (1) credit of NUR 674. Co-requisites: At least two (2) credits of NUR 674.

NUR 668 Family Primary Health Care II (4)

Theory, research and pathophysiology are expanded to assess, evaluate and manage clients across the lifespan with a variety of increasingly complex cardiovascular, peripheral vascular, pulmonary, renal, endocrine, hematology, neuromuscular and psychiatric problems, and office emergencies encountered in the primary care setting are addressed. The professional roles of the nurse practitioner are synthesized to enhance the health and well being of clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 652 and at least one (1) credit of NUR 670. Co-requisites: At least one (1) credit of NUR 670 or four (4) credits of NUR 680.

NUR 669 Adult Primary Health Care II (3)

Theory, research, and pathophysiology are expanded to assess, evaluate and manage adult clients with a variety of increasingly complex cardiovascular, peripheral vascular, pulmonary, renal, endocrine, hematology, neuromuscular, psychiatric problems, and office emergencies encountered in the primary care setting are addressed. The professional roles of the nurse practitioner are synthesized to enhance the health and well-being of adult clients and their families from a variety of socioeconomic and cultural backgrounds. Prerequisites: NUR 653 and at least one (1) credit of NUR 672. Co-requisite(s): At least two (2) credits of NUR 672 or three (3) credits of NUR 682.

NUR 670 Intermediate Level Family Clinical (Variable 1-3)

Increasingly complex clinical experience provides an opportunity to deliver primary care within a community based setting to individuals and families with a variety of diverse cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand knowledge and skills as well as develop clinical judgment and priority setting. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical setting. This experience will build on skills and knowledge previously obtained at the beginning level. Three credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 572 & NUR 580. Pre/Co-requisites: NUR 503. Co-

requisites: NUR 652 or NUR 668.

NUR 672 Intermediate Level Adult Clinical (Variable 1-3)

Increasingly complex clinical experience provides an opportunity to deliver primary care within a community based setting to adults with a variety of diverse cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand knowledge and skills as well as develop clinical judgment and priority setting. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical setting. This experience will build on skills and knowledge previously obtained at the beginning level. Three credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 574, NUR 582. Pre/Co-requisite: NUR 503. Co-requisites: NUR 653 & NUR 669.

NUR 674 Intermediate Level Gerontological Clinical (Variable 1-3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to the older adult population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. This clinical will build on skills and knowledge previously obtained at the beginning level. Three credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 584, current NYS RN license, current CPR certification, complete health clearance on file in the SON&HS office.

Co-requisites: NUR 503/504A, NUR 654.

NUR 676 Intermediate Level Adult/Gerontology Clinical (Variable 1-3)

Increasingly complex clinical experience provides an opportunity to deliver primary care within a community based setting to adults across the lifespan with a variety of diverse health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand knowledge and skills, as well as develop clinical judgment and priority setting. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical setting. This experience will build on skills and knowledge previously obtained at the beginning level. Three credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 578, NUR 586. Pre/Co-requisite: NUR 503. Co-requisites: NUR 655 or NUR 665.

NUR 680 Advanced Level Family Clinical (Variable 1-4)

Advanced clinical experience provides an opportunity to integrate primary care within a community based setting to individuals and families with a variety of diverse cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these increasingly complex clients provide the students with challenges to expand knowledge and skills as well as develop clinical judgment and priority setting.

Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide minimal guidance that fosters independence in the clinical setting. The graduate student must have precepted with a master's prepared nurse practitioner prior to completion of the final clinical. This experience will build on skills and knowledge previously obtained at the beginning and intermediate levels. Four credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisite: Three (3) credits of NUR 670. Co-requisites: NUR 658, NUR 668 or NUR 692.

NUR 682 Advanced Level Adult Clinical (Variable 1-3)

Advanced clinical experience provides an opportunity to integrate primary care within a community based setting to adults with a variety of diverse cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by clients in diverse health care settings. Opportunities to deliver primary care to these increasingly complex clients provide the students with challenges to expand knowledge and skills, as well as develop clinical judgment and priority setting. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide minimal guidance that fosters independence in the clinical setting. The graduate student must have precepted with a master's prepared nurse practitioner prior to completion of the final clinical. This experience will build on skills and knowledge previously obtained at the beginning and intermediate levels. Four credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisite: Three (3) credits of NUR 672. Co-requisites: NUR 658, NUR 669 or NUR 692.

NUR 684 Advanced Level Gerontological Clinical (Variable 1 – 3)

Clinical experience provides an opportunity to deliver primary care within a community based setting to the older adult population with a variety of cross-cultural health care needs. Focus is on the unique wellness lifestyle and health care problems demonstrated by older adult clients in diverse health care settings. Opportunities to deliver primary care to these clients provide the students with challenges to expand their knowledge and skills as well as to explore judgment making and priority setting abilities. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide guidance in the clinical settings under contract with the School of Nursing and Health Systems. The graduate student must have precepted with a master's prepared nurse practitioner prior to completion of the final clinical. This clinical will build on skills and knowledge previously obtained at the beginning and intermediate levels. Four credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisites: NUR 584 and three (3) credits of NUR 674, current NYS RN license, current CPR certification, complete health clearance on file in the SON&HS office. Co-requisites: NUR 659, NUR 667.

NUR 685 Interprofessional Palliative Care (1-3)

Care for patients with terminal or incurable conditions across the disciplines is the focus of this course. Therapeutic presence and communication strategies are explored and applied in advanced practice. Emphasis is on an interprofessional approach in palliative care across the lifespan with considerations to contextual, legal, ethical, spiritual, cultural, and personal influences. Current and best practices in advanced practice nursing and medicine will be analyzed for application to plans of care across a variety of healthcare settings. Opportunities will be provided for conversations across the disciplines.

NUR 686 Advanced Level Adult/Gerontology Clinical (Variable 1 to 3)

Advanced clinical experience provides an opportunity to integrate primary care within a community based setting to adults across the lifespan with a variety of diverse cultural health care needs. Focus is on

the unique wellness lifestyle and health care problems demonstrated by adult clients of all ages in diverse health care settings. Opportunities to deliver primary to these increasingly complex clients provide the students with challenges to expand knowledge and skills, as well as to develop clinical judgment and priority setting. Clinical faculty, in collaboration with preceptors (physicians and/or nurse practitioners), provide minimal guidance that fosters independence in the clinical setting. The graduate student must have precepted with a master's prepared nurse practitioner prior to completion of the final clinical. This experience will build on skills and knowledge previously obtained at the beginning and intermediate levels. Four credits are required for course completion. The student will complete 5.5 contact hours per week per credit. Prerequisite: Three credits of NUR 676. Co-requisites: NUR 658, or NUR 665, or NUR 692.

NUR 691 Culminating Seminar in Nursing Education (3)

Learners are provided the opportunity to critically reflect upon personal and professional values as an academic nurse educator. Learners will develop a personal goal and learning plan to facilitate proficiency toward achieving professional excellence as a nurse educator. Standards and scope of practice specific to the role of the nurse educator are emphasized. The learner will explore issues relevant to working as an academic nurse educator. Emphasis is placed on faculty development, scholarship, certification and continuation of formal education. Focus is on critical reflection, collaboration, professional role development, and faculty responsibilities as the student engages in the advanced practice role of nurse educator. Successful completion of the comprehensive final exam is a mandatory component of the program, and is accomplished in this course. Prerequisites: NUR 505, NUR 515, NUR 535, NUR 545. Pre/Co-requisites: NUR 536, NUR 636, NUR 645.

NUR 692 Culminating Seminar for Nurse Practitioners (Variable 2 or 3)

Seminar provides opportunity for the students to critically reflect upon personal and professional values. Benner's Model of Novice to Expert is used as a framework for students to self-examine their ongoing development in clinical proficiency as they advance toward achieving professional excellence. Standards and scope of practice specific to the role of the nurse practitioner are emphasized. Relevant issues related to legal and regulatory constraints within a competitive and challenging health care system are also examined at the local, state, and federal levels. Prerequisite: NUR 670. Pre/Co-requisites: NUR 651, NUR 659, NUR 661, at least two credits of NUR 680.

Statistics

STA 510 Regression and Analysis of Variance (3)

A continuation and further development of statistical inference within the context of linear models. Basic statistical concepts are reviewed briefly together with ordinary least squares. Multiple regression analysis is developed with a design matrix approach with an emphasis on specification and assessment of model assumptions. Analysis of Variance and Analysis of Covariance models are developed and studied. A computational environment for simulation and data analysis is integrated throughout the course. Prerequisites: MAT 370 or equivalent.

Technology Information Management

TIM 500 Project Management (3)

Reviews traditional project management techniques and project based organizational structures. Special

attention is given to the integration of project management with technology and strategic objectives. Organizational issues, project tracking, the project manager, and project management techniques are examined both from the conceptual and the applied aspects. The potential for transferring knowledge gained from projects to multiple areas in the organization is also covered. Students will experience computer application software to support and implement project management activities.

TIM 530 Managing New Product Design and Development (3)

Regardless of the industry or business involved, careful attention must be given to the way new products are designed and developed. Various aspects of product design and development are studied; including the functions of research and development, marketing, finance, design, manufacturing, and technical specifications. Special attention is given to the tools and methodologies necessary in the creation and development of a new product. An important focus of this course is on the challenges and perspectives presented by products that result from high technology environments or are themselves “high technology products.” Prerequisites: TIM 500 or permission of instructor.

TIM 585 Leading Organizational Change and Innovation (3)

Leading change at the individual, group, and organizational levels is critical to the survival, growth and success of various types of organizations. This course aims to prepare leaders for the challenges of guiding organizations through strategic change and innovation projects. Pressures in the dynamic external and internal environments of firms create opportunities for, or make necessary, innovation and transformation. Given the complex nature of change, the course offers a holistic and multi-disciplinary view of sustainable change and innovation by integrating knowledge from three discrete domains: creativity and design, leadership, and organizational change. This course expands the standard innovation discourse by introducing technological design concepts and principles as tools for effectively envisioning future change states. Furthermore, the course explores the human, technological, network, environmental, industry, public sector, and societal variables that mediate creative and innovation outcomes for organizations. Prerequisites: TIM 500 or permission of instructor.

TIM 685 Strategic Planning (3)

This is the capstone strategy course that covers the economics and strategy of technology and innovation management. An integrating experience using case studies to apply the various skills and knowledge accumulated throughout the required coursework in business and technology management. Special emphasis will be upon how organizations fit within the social, political, and economic environments. Managerial strategies to optimize achievement of objectives in high technology environments will also be covered. [Formerly BUS 685]

Telecommunications

TEL 500 Voice Communications (3)

Provides knowledge of the components, operations, and services of analog and digital local loop circuit switched networks, digital and VOIP PBXs, and signaling systems. Advances in wire line and wireless voice telecommunications networks including VOIP, power line communications, passive optical networks, and broadband wireless are investigated.

TEL 502 Data Communications (3)

Data communications is a rigorous treatment of advanced topics in the technology of communicating

digital information over public and private communications facilities. The topics include general principles, LANs, WANs, and related topics. These topics are covered in: lectures, individual exercises, team exercises, and interactive competitive team projects.

TEL 505 Network Design and Simulation (3)

A course investigating network design and simulation modeling enabling telecommunications system developers to evaluate the performance of existing and proposed networks under different hardware, configurations, or operating constraints. Simulation modeling minimizes risks of unforeseen network bottlenecks, under utilization of overuse of system resources.

TEL 527 Telecommunication Optical Networks (3)

Addresses techniques for designing single and multiple wavelength long-haul and metro telecommunication optical networks. Topics include general principles of optical components, design parameters and design techniques. These topics are covered in: lectures, individual exercises, team exercises, and computer simulations. Please note that this course is not at a level that is appropriate for Electrical Technology and Electrical Engineering students and is not likely appropriate for physics majors as well because of the depth and breadth of the coverage.

TEL 550 Advanced Network Standards and Protocols (3)

A rigorous course covering the principles, standards, and practices of data communications protocols with emphasis on the TCP/IP protocol suite. The topics will include: reference model, Network Access layer protocols, Internet layer protocols, Transport layer protocols, and Application layer protocols. These topics are covered in: lectures, individual assignments, on-line assignments and an interactive competitive team project. Prerequisite: TEL 502 or permission of instructor.

TEL 560 Advanced Wireless Communications (3)

A rigorous course covering the principles, standards, and practices of wireless telecommunications. The topics will include: fundamentals of radio, wireless data communications and wireless telephony. These topics are covered in: lectures, individual assignments, on-line assignments, and a team project. Prerequisites: TEL 500 and TEL 502.

TEL 581 Survey of Information Assurance (3)

A fast paced introduction into the field of Information Assurance. Various kinds of threats faced by an information system and the security techniques used to combat them are covered. Hacker methods, viruses, worms, bombs and system vulnerabilities are described with respect to the actions that must be taken by a network manager to thwart them. Existing and planned protection methods and defenses are mapped to the information system threats and attacks. This course provides the background for those individuals who seek skills in the areas of Network and Data Security.

TEL 590 Selected Topics in Advanced Telecommunications (3)

A course investigating current topics related to the research, development, deployment, and planning of new networks, signaling systems, transmission media and switching systems. Topics include wireless personal communications systems; satellite networks with an emphasis on the impact of fixed and mobile satellite systems on the economy and society; Broadband ISDN; ATM; SONET; AIN; and voice and data compression techniques.

TEL 591 Independent Study (Variable 1-3)

Extensive study and research on a particular topic of student interest under the supervision of a faculty member. The student is required to submit a written proposal which includes a description of the project, its duration, educational goals, method of evaluation and number of credits to be earned.

TEL 594 Graduate Internship (3)

Students work for an organization approved by their advisor for a minimum of 250 hours in a supervised position. Students are required to write two reports on their internship experience. Work must be completed in one term, or during the summer.

TEL 597 Research Project(1-3)

Upon approval of the advisor, student will research, design, solve and implement a graduate project.

TEL 598 Seminar in Research Methods (3)

This course will review the major considerations and tasks involved in designing and conducting a telecommunications thesis or project. The goal is for students who successfully complete the course to be able to produce and defend the methodology of his/her research, be ready to carry out the various tasks involved in doing the research, and to find the resources to guide them through their research. The theme throughout the course will be on comparing and/or combining qualitative and quantitative approaches to research.

TEL 599 Thesis(1-3)

Upon approval of the advisor, the student will research and write an original work on a significant topic in the field of telecommunications.

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The nation's largest and most comprehensive state university system, The State University of New York (SUNY), was founded at Potsdam, New York in 1816. Years later, the Morrill Act of 1862 led to the creation of four Ivy League land-grant SUNY colleges, which now currently exist at Cornell University. SUNY was officially established in February 1948 when New York became the 48th state, of the then 48 states, to create a state university system. SUNY initially represented a consolidation of 29 unaffiliated institutions, including 11 teachers colleges. All of these colleges, with their unique histories and backgrounds, united for a common goal: To serve New York State. Since 1948 SUNY has grown to include 64 individual colleges and universities that were either formerly independent institutions or directly founded by the State University of New York.

Today, the State University of New York's 64 geographically dispersed campuses bring educational opportunity within commuting distance of virtually all New Yorkers and comprise the nation's largest comprehensive system of public higher education. The State University of New York's 64 campuses are divided into four categories, based on educational mission, types of academic opportunities available and degrees offered. SUNY offers students a wide diversity of educational options including short-term vocational/technical courses, certificate, associate, and baccalaureate degree programs, graduate degrees and post-doctoral studies. SUNY provides access to almost every field of academic or professional study within the system more than 7,000 degree and certificate programs.

SUNY students represent the society that surrounds them. In May 2012, 24.4% of all enrolled students were minorities. While SUNY students are predominantly New York State residents, representing every one of the state's 62 counties, they also hail from every other state in the United States, the District of Columbia, four U.S. territories, and 160 nations. Total enrollment is over 467,000. Nearly 40% of New York State high school graduates choose SUNY and 99.8% of New York residents live within 30 miles of a SUNY campus. SUNY alumni number over 2.7 million graduates who reside in New York State and throughout the world. SUNY attracts the best and brightest scholars, scientists, artists and professionals and boasts nationally and internationally recognized faculty in all major disciplines. Faculty are regular recipients of prestigious awards and honors. SUNY colleges and universities range from world-renowned community colleges, such as the Fashion Institute of Technology, to first-rate graduate schools and the nation's top veterinary school. The highly regarded doctoral degree granting universities are home to top research programs and attract experts in a variety of fields. Students study in campus classrooms and laboratories or work from a distance through the SUNY Learning Network, which provides educational opportunities for an estimated 150,000 students through courses and degree and certificate programs. The State University of New York is committed to providing quality education at an affordable price to New Yorkers and students from across the country and the world.

SUNY's Mission

The mission of the State University system shall be to provide to the people of New York educational

services of the highest quality, with the broadest possible access, fully representative of all segments of the population in a complete range of academic, professional and vocational postsecondary programs including such additional activities in pursuit of these objectives as are necessary or customary. These services and activities shall be offered through a geographically distributed comprehensive system of diverse campuses which shall have differentiated and designated missions designed to provide a comprehensive program of higher education, to meet the needs of both traditional and non-traditional students and to address local, regional and state needs and goals.

In fulfilling this mission, the State University shall exercise care to develop and maintain a balance of its human and physical resources that:

- recognizes the fundamental role of its responsibilities in undergraduate education and provides a full range of graduate and professional education that reflects the opportunity for individual choice and the needs of society;
- establishes tuition which most effectively promotes the university's access goals;
- encourages and facilitates basic and applied research for the purpose of the creation and dissemination of knowledge vital for continued human, scientific, technological and economic advancement;
- strengthens its educational and research programs in the health sciences through the provision of high quality general comprehensive and specialty health care, broadly accessible at reasonable cost, in its hospitals, clinics and related programs and through networks and joint and cooperative relationships with other health care providers and institutions, including those on a regional basis;
- shares the expertise of the state university with the business, agricultural, governmental, labor and nonprofit sectors of the state through a program of public service for the purpose of enhancing the well-being of the people of the state of New York and in protecting our environmental and marine resources;
- encourage, support and participate through facility planning and projects, personnel policies and programs with local governments, school districts, businesses and civic sectors of host communities regarding the health of local economies and quality of life;
- promotes appropriate program articulation between its state-operated institutions and its community colleges as well as encourages regional networks and cooperative relationships with other educational and cultural institutions for the purpose of better fulfilling its mission of education, research and service.

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