

**Norwich University**  
**2014-2015**  
**Catalog**

Prepared By:  
Registrar's office  
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## 2014-2015 Norwich University Catalog

Welcome to Norwich University!



I am pleased that you have chosen to become part of the Norwich family. Norwich is a very distinctive place in the landscape of higher education, and our programs are rooted in substance and history. Few schools will challenge you as much as Norwich; fewer yet will give you the high level of academic and leadership experiences you need to achieve distinction in the marketplaces of our great nation.

As we look ahead to our bicentennial in 2019, we do so grounded in our legacy of educational innovation, proud of our graduates' achievements, and committed to preparing the leaders that will serve our nation and the global community. As a member of the Norwich community, know that you have become part of something very old, very deep, and very proud.

Cordially,

Richard W. Schneider, PhD  
RADM, USCGR (Ret.) President

### Vision, Mission, Guiding Values

#### Founded in 1819

Norwich University was the first private military college in the United States. Here the idea of the "citizen soldier" developed, a guiding philosophy that later became the impetus for the creation of the Reserve Officer Training Corps (ROTC). Norwich was the first private college or university to offer engineering. Norwich was also the first school to offer military training to women, in 1974, preceding the armed service academies by two years.

#### The Vision for Norwich University

Norwich University will be a learning community, American in character yet global in perspective; engaged in personal and intellectual transformation, and dedicated to knowledge, mutual respect, creativity, and service.

#### The Mission of Norwich University

To give our youth an education that shall be American in its character – to enable them to act as well as to think – to execute as well as to conceive – "to tolerate all opinions when reason is left free to combat them" – to make moral, patriotic, efficient, and useful citizens, and to qualify them for all those high responsibilities resting upon a citizen in this free republic.

#### Statement of Guiding Values

Norwich University was founded in 1819 by Captain Alden Partridge, US Army, and is the oldest private military college in the country. Norwich University is a diversified academic institution that educates traditional age students in a Corps of Cadets or as civilians, and adult students. Norwich identifies the following as our guiding values:

1. We are men and women of honor and integrity. We shall not tolerate those who lie, cheat, or steal.
2. We are dedicated to learning, emphasizing teamwork, leadership, creativity, and critical thinking.
3. We accept the right to diverse points of view as a cornerstone of our democracy.
4. We encourage service to nation and others before self.
5. We stress being physically fit, and drug-free.
6. We live the Norwich motto, "I will try!" — meaning perseverance in the face of adversity.
7. We stress self-discipline, personal responsibility, and respect for law.
8. We hold in highest esteem our people and reputation.

#### Two Lifestyles. One University

Norwich University is unique among institutions of higher education. No other university combines a military tradition of nearly two centuries, a broad range of undergraduate degree programs, and innovative on-line graduate programs. Since 1993, Cadets and civilian students have shared the same campus at Norwich University, creating a college culture set apart from the usual in the nation. While students in The Corps of Cadets participate in intense military training, all of our students benefit from a distinctive and structured learning environment that promotes academic success as well as leadership development. Our students choose Norwich because it is the best "fit" for them. Students from both lifestyles choose Norwich for similar reasons - rigorous academics, a robust athletic program, a variety of extracurricular activities, and a safe environment.

For the majority of the day, students in both lifestyles are completely integrated. All of our students attend the same classes, play on the same athletic teams and are involved in the same clubs and extracurricular activities. Although Cadets and civilian students have separate residences; a walk through the library, the dining hall or the gymnasium will show all of our students living, learning, working and playing together without regard for the lifestyle choice each student has made.

## Diversity

Norwich students have come from 50 states and numerous foreign countries. The university's minority enrollment is consistently one of the largest representations by percentage of any Vermont college or university.

## Opportunity at Norwich

The student-to-faculty ratio is low and the vast majority of our faculty holds terminal degrees. The University offers students 32 undergraduate academic majors and a Master of Architecture that follows the completion of a four-year Bachelor of Science in Architectural Studies for its on-campus students. Norwich also offers online Master degrees and two degree completion Bachelor of Science programs through the College of Graduate and Continuing Studies.

## Equal Opportunity

Norwich University is committed to providing equal opportunity in education and employment to qualified persons. The University admits students without regard to race, color, religion, national or ethnic origin, age, sexual orientation, or qualified disability and does not discriminate in the administration of its educational and other admissions policies, scholarship and loan programs, employment practices, athletic and other university administered programs.

Implementation of this policy shall be in compliance with Title VI and Title VII of the Civil Rights Act of 1964; Title IX of the Education Amendments of 1992; the Equal Pay Act of 1963; Age Discrimination in Employment Act of 1967; Section 504 of the Rehabilitation Act of 1973; the Vermont Fair Employment Practices Act; the American with Disabilities Act of 1990; and other pertinent federal and state non discrimination laws and statutes. Contact Title IX Coordinator, 802-485-2144, with questions, compliance concerns, or discrimination complaints regarding gender equity. Contact the Director of Human Resources, 802-485-2075, with questions, compliance concerns, or discrimination complaints regarding gender equity.

## Accreditations and Force of Publication Statement

### University Accreditation

Norwich University is accredited by the New England Association of Schools and Colleges, Inc., through its Commission on Institutions of Higher Education. Inquiries regarding the accreditation status by the New England Association should be directed to the administrative staff of the institution. Individuals may also contact:

Commission on Institutions of Higher Education  
New England Association of Schools and Colleges  
209 Burlington Road, Suite 201  
Bedford, MA 01730-1433  
(781) 271-0022  
E-Mail: cihe@neasc.org

### Program Accreditations

- The Bachelor of Science in Nursing program is accredited by the Commission on Collegiate Nursing Education (CCNE) and the Vermont State Board of Nursing (VSBN).
- The Civil Engineering, Electrical & Computer Engineering, and Mechanical Engineering programs are accredited by the Engineering Accreditation Commission (EAC) of the Accreditation Board for Engineering and Technology (ABET).

- The Bachelor of Science in Construction Management is designed to be accredited by the Applied Science Accreditation Commissions (ASAC) of ABET
  - Additionally, the University is a member of the American Society for Engineering Education (ASEE).
- The Architecture program is accredited by the National Architecture Accreditation Board (NAAB).
  - Additionally the University is a member of the Associate of Collegiate Schools of Architecture (ACS) and the Architectural Research Centers Consortium (ARCC)
- The Bachelor of Science in Accounting and Management programs are accredited by the Accreditation Council for Business Schools and Programs (ACBSP)
- The Education Teacher Licensure program--available in secondary and elementary tracks--are accepted for teaching licenses in Vermont and several other New England and Middle Atlantic states where the State of Vermont has interstate licensure agreements.
- The Physical Education Teacher Licensure program--available in secondary and elementary tracks--is accepted for teaching licenses in Vermont and several other New England and Middle Atlantic states where the State of Vermont has interstate licensure agreements.
- The Athletic Training Program is accredited by The Commission on Accreditation of Athletic Training Education (CAATE).
- The Master of Business Administration program is accredited by the Accreditation Council for Business Schools and Programs (ACBSP)
- The Master of Science in Nursing Administration programs are accredited by the the Commission on Collegiate Nursing Education (CCNE) and the Vermont State Board of Nursing (VSBN) .
- The Master of Science in Nursing Education program is approved by the Vermont State Board of Nursing and accredited by the Commission on Collegiate Nursing Education (CCNE).
- The Master of Architecture degree is accredited by the National Architecture Accreditation Board (NAAB).

### Force of Publication

The statements set forth in this catalog are for informational purposes only and should not be construed as the basis of a contract between a student and Norwich University.

While the provisions of this catalog will ordinarily be applied as stated, Norwich University reserves the right to change any provision listed in this catalog, including but not limited to, academic requirements for graduation and schedules for course offerings; without actual notice to individual students. Every effort will be made to keep students advised of any such changes. Information on changes will be made available in the Academic Colleges and the Registrar's Office.

It is especially important that students note it is their responsibility to keep themselves apprised of current graduation requirements for their particular degree, major, and minor degree program(s). Degree Audits are available electronically through BannerWeb to help students stay current with degree/major/minor requirements.

This catalog is prepared to enable prospective and enrolled students, and others, to learn about Norwich University. It is also intended to explain policies, requirements, regulations and procedures in a manner that will help the student progress through the University. Faculty, advisers and staff at the Norwich University will provide assistance, but ultimately the responsibility for compliance rests with the student.

## Academic Advising

Each student has an academic advisor assigned. The academic advising system views the advisor-advisee association as a partnership. Both members of the "team" have responsibilities that, when properly fulfilled, enhance the student's opportunity for academic success. For the relationship to be successful, there must be open and candid communication between the adviser and the advisee.

**Advisee responsibilities** include working with the advisor in formulating an academic plan, and a career plan, developing class schedules each semester; informing the advisor of problems or illness that may affect academic performance; responding to adviser messages in a timely fashion; and reviewing their own degree evaluation so as to know which courses are required to meet graduation requirements.

**Adviser responsibilities** include facilitating the student's academic transition from high school to college; working with the student in formulating an academic plan, and a career plan, guiding the student in developing a class schedule each semester; reviewing the degree evaluation with the advisee; assisting the advisee with petitions and/or forms; and referring students to other university services - as needed.

## Academic Clubs & Professional Societies

### Academic Clubs (AC)

A variety of academically related clubs, societies, and organizations are available for Norwich students. This enables students with similar interests to enjoy and collaborate on academic subjects and take part in professional activities.

### Special Interest Clubs (SI)

The list of sanctioned clubs at Norwich is driven by student interest. Some groups, like the Pegasus Players, have been established for quite some time and are enthusiastically supported by the faculty, staff, and student body. Other clubs may be less traditional, and are formed to explore the special interests of a small group of students. To learn how to create a club--and receive funding from the University--contact Director of Student Activities, Intramurals & Recreational Sports.

### Aero Club (SI)

The purpose of the NU Aero Club is to have fun while gaining aeronautical knowledge by educating, motivating, and experiencing first-hand what aviation is about. The simulator provides members with the knowledge and training to help them eventually succeed in a military and/or civilian aviation career.

### Alpha Chi (all disciplines) (AC)

This is the national college honor society for all academic disciplines.

### Alpha Nu Omega (AC)

This is the local Norwich chapter of Alpha Phi Sigma National Criminal Justice Honor Society. Official national web site: [www.alphaphisigma.org](http://www.alphaphisigma.org) (<http://www.alphaphisigma.org>).

### American Chemical Society Student Chapter (ACS) (AC)

The Norwich Chemistry and Biochemistry Department has sponsored an ACS Student Chapter since the 1950s. ACS is the world's largest scientific society. Student chapters bring guest speakers to campus, perform service to promote interest in chemistry among high school

and grade school students and organize social events. Members have excellent opportunities to network with chemists and biochemists and have access to career services such as the ACS Careers Jobs Database, resume reviews, and the salary comparator. Official ACS web site: [www.acs.org](http://www.acs.org) (<http://www.acs.org>).

### American Institute of Architecture Students (AIAS) (AC)

A national student organization that promotes excellence in architecture, education, training, and practice; fosters appreciation of architecture and related disciplines; and organizes architecture students and combines their efforts to advance the science of architecture. Official AIAS web site: [www.aiasnatl.org](http://www.aiasnatl.org) (<http://www.aiasnatl.org>).

### American Society of Civil Engineers (ASCE) (AC)

The aim of this chapter is to afford the civil engineering student association with others who share the interest in civil engineering profession, and thus prepare for entry into the profession and the national society. Official ASCE web site: [www.asce.org](http://www.asce.org) (<http://www.asce.org>).

### American Society of Mechanical Engineers (ASME) (AC)

Students with a strong interest in mechanical engineering gain such benefits as a subscription to cutting-edge technology information in ME Magazine, scholarship opportunities, mentoring within the profession, free conference attendance, etc. Official web site: [www.asme.org](http://www.asme.org) (<http://www.asme.org>).

### Animation Club (SI)

This is a club for all those interested in watching Japanese animation.

### Association for Computing Machinery (ACM) (AC)

LAN party hosted by ACM Members help each other explore the world of computer science and engineering; create and share knowledge with one another and the larger ACM community; and do their best to make Norwich University a better place to study computers and related technology. Official web site: [acm.norwich.edu/](http://acm.norwich.edu/).

### Beta Beta Beta (BBB) (AC)

An honor and professional society affiliated with the American Association of the Advancement of Science, for all students interested in biological sciences. Activities include sponsoring speakers, and attending conferences, field trips, and social activities. Official BBB web site: [www.tri-beta.org](http://www.tri-beta.org) (<http://www.tri-beta.org>).

### Business Club (AC)

The Business Club provides an opportunity for students to learn more about the scope of business in all of its forms.

### Campus Choraleers (SI)

The Campus Choraleers is a group of approximately 40 mixed voices that performs choral works from all periods. This group sings at Christmas concerts for various local programs and at three or four concerts on tour in the spring. The Campus Choraleers is open to all University students.

### Chi Epsilon (AC)

This is a national honorary civil engineering fraternity.

### Cigar Club (SI)

The purpose of the Cigar Club is to disseminate information about cigars, gain practical knowledge about operating a small business, learn to deal with expenses, inventory, management, and scheduling of personnel.



### **Criminal Justice Student Association (CJSA) (AC)**

Founded in 1986, the Criminal Justice Student Association was developed for the purpose of education and as a social and fraternal organization for all criminal justice majors.

### **Norwich University Cyber Security and Forensics Club (NUCSFC) (AC)**

The goal of this organization is to teach to all who will listen techniques to keep their information systems safe from prying eyes who may seek to use these increasingly vital tools for less than moral goals. Although we are not a summer program, we are attempting to expand our organization and increase our outreach on our campus and perhaps even to other campuses; this may eventually include some form of summer program. It is for this reason that we are seeking the financial help of your organization. We are willing to do our best to meet any and all requirements to gain assistance in our mission of promoting cyber-literacy.

### **Delta Mu Delta (AC)**

This is the national honor society in business administration. Official national web site: [www.deltamudelta.org](http://www.deltamudelta.org) (<http://www.deltamudelta.org>).

### **Democratic Club (SI)**

This club's mission is to provide political support for the Democratic Party and social education for the Norwich University community.

### **Education Club (AC)**

This club promotes service-learning opportunities for the students who are community related. It provides numerous opportunities for exploration of the teaching profession in state, out of state and abroad.

### **NU EMS (SI)**

This organization provides emergency medical services for the Northfield campus. It also educates and trains Norwich University students, staff, and faculty in emergency medical service.

### **Eta Kappa Nu (electrical and computer engineering) (AC)**

This is the Electrical and Computer Engineering Honor Society. Official national web site: [www.hkn.org](http://www.hkn.org) (<http://www.hkn.org>).

### **French Club (AC)**

This is a club for all students who are interested in pursuing further the language of French. All levels of knowledge of the language are accepted.

### **Geology Club (AC)**

This is a club for students majoring or minoring in Geology and Environmental Science, as well as all those interested in the earth sciences and human interaction with the Earth. In particular, this club facilitates the interaction of students with similar interests. Also, the club enables students to interact with professional and academic Earth Scientists and Geologists to gain a fuller understanding of the job market, graduate schools, academic research, and professional research.

### **German Club (AC)**

This club provides an atmosphere where members may practice or learn more German. It is the club's belief that providing a comfortable place outside the class to practice German will result in better grades in German. To be in the club, it is not necessary to speak fluent German.

### **Grenadiers Jazz Ensemble (SI)**

The Grenadiers Jazz Ensemble is a "Big Band" that plays music from the swing era to the top-40 tunes of today. The band performs regularly on campus at major dances and concerts and yearly performs in off-campus concerts at high schools throughout New England, the United States, and Europe. The Grenadiers is open to all University students by audition.

### **The Norwich Guidon (student newspaper) (SI)**

*The Norwich Guidon* is the student newspaper of Norwich University, it is published twice monthly and has won numerous awards for excellence in its class. Reporters, editors, and managers for *The Norwich Guidon* are students at the University who work under the guidance of a Communications faculty advisor.

### **The Harold "Doc" Martin Society (HDM) (SI)**

The HDM society is a multicultural group that aids in raising money for various charities. It is also committed to bringing cultural awareness to Norwich University.

### **Institute of Electrical and Electronic Engineers (IEEE) (AC)**

The purposes of IEEE are scientific, educational, and professional. The branch sponsors technical conferences where state-of-the-art equipment is displayed, and it sponsors tutoring in electrical engineering topics. Official IEEE web site: [www.ieee.org](http://www.ieee.org) (<http://www.ieee.org>).

### **Mathematical Association of America (MAA) (AC)**

The MAA encourages students to continue study in the mathematical sciences, provides opportunity to meet with other students interested in mathematics by hosting regional conferences, and provides career information in the mathematical sciences. The Norwich MAA student chapter hosts annual Pi Day festivities. Members are encouraged to speak at colloquia during Mathematics Awareness Month in April and throughout the year. MAA Web site: [www.maa.org](http://www.maa.org) (<http://www.maa.org>).

### **Maroon and Gold Key (SI)**

These students assist in the recruitment and retention of students. The organization conducts tours of the campus for all guests, hosts overnight visits of prospective students, and assists at Open Houses and some off-campus recruitment events.

### **Norwich University Activities Counsel (NUAC) (SI)**

This club enhances and supports the academic mission of the institution and provides student activities, programs, and services to facilitate learning and personal development of all students. It serves as an agent for students, faculty, and staff to interact and promote a united, healthy campus community outside of the classroom.

### **Omicron Delta Epsilon (economics) (AC)**

This is the national economics fraternity. Official national web site: [www.cba.ua.edu/~ode/](http://www.cba.ua.edu/~ode/) (<http://www.cba.ua.edu/~ode/>).

### **Pegasus Players (SI)**

The Pegasus Players is the resident theater company for Norwich University. It is composed of students, faculty, and community members. This club provides opportunities to act, design, build sets, and make costumes. Through their work in Pegasus, have the chance to learn the basic skills of theater and earn academic credit (EN 242).

### **Pi Gamma Mu (AC)**

This is an honor society broadly concerned with the social sciences. Its primary objectives are to encourage the study of the social sciences

among graduate and undergraduate students and faculty members throughout the world, and to recognize outstanding achievement. Official web site: [www.pigammamu.org/](http://www.pigammamu.org/) (<http://www.pigammamu.org/>).

### Pi Sigma Alpha (AC)

This is the Political Science Honor Society. The objectives of this organization are to: stimulate productive scholarship and intelligent interest in the subject of government, politics, and policy; seek to promote a better understanding of government, politics, and policy among its members; promote worthwhile curricular and extracurricular activities related to political science; advance and diffuse knowledge and interest in political science; to organize and conduct seminars, conferences, research, discussion groups, and publications in the subject of political science. Official website: [www.apsanet.org/~psa/](http://www.apsanet.org/~psa/) (<http://www.apsanet.org/~psa/>).

### Political Science Club, *Politeia* (AC)

*POLITEIA* is an organization dedicated to promoting interest in political affairs and political science. This interest includes and is not limited to: current events, current research in politics and political science, an awareness of professional opportunities, and leadership within the Corps of Cadets and civilian lifestyles. Official web site: [www.norwich.edu/voices/jasonjagemann](http://www.norwich.edu/voices/jasonjagemann).

### Pre-Law Society (AC)

The purpose of the *Pre-Law Society* is to advance the scholarly study of law and to facilitate the implementation of such study to benefit to our society. It is the vision of the *Pre-Law Society* to offer assistance to students at Norwich University by helping them make informed decisions in selecting law as a career, the application process, determining a law school, and the practice law in any law-related profession. Website: [www.norwich.edu/voices/jasonjagemann](http://www.norwich.edu/voices/jasonjagemann).

### Psi Chi (psychology) (AC)

This is an honor society and scholarship society for psychology. Official web site: [www.psichi.org/](http://www.psichi.org/) (<http://www.psichi.org/>).

### Republican Club (SI)

This club's members support the Republican Party and fundamental conservative ideals. Members are involved with politics and political activities on campus.

### NU Robotics Club (SI)

The NU Robotics Club is a diverse group of students from many different disciplines in the university. The students explore new ideas in robotics, organize and participate in robotic competitions, and coach K-12 student competition teams. Teamwork, leadership, and innovation are themes in many of the projects they elect to pursue.

### Russian Club (AC)

This is a culturally diverse club that came together to acquire more knowledge of Russian life, language, and traditions. The Russian club has many people with different levels of Russian language or ability. The club does have tutoring sessions for those interested in learning the language.

### Sigma Iota Rho (AC)

This is the honor society for international studies. Open to undergraduate and graduate international studies students. Official web site: [www.sigmaiotarho.org](http://www.sigmaiotarho.org) (<http://www.sigmaiotarho.org>).

### Sigma Tau Delta (AC)

This is the national English honor society. Official national web site: [www.english.org/sigmatd/](http://www.english.org/sigmatd/) (<http://www.english.org/sigmatd/>).

### Student Government Association (SGA) (SI)

The Norwich University Student Government Association is a group of students representing the entire student body and is responsible for voicing concerns of the student body to the administration. The main goal of SGA is to promote the general welfare of all students and to foster positive improvements on campus.

### Student Nurses' Association (AC)

Members participate in a number of University activities, organize American Red Cross blood drives, tutor underclassmen, and participate in fund-raisers for a spring dinner with professional speakers in various Nursing disciplines. Norwich Student Nurses' Organization web page. Official National Student Nurses' Association web site: [www.nсна.org](http://www.nсна.org) (<http://www.nсна.org>).

### Spanish Club (AC)

This club promotes further knowledge of the Spanish language. It educates and helps others learn about the Spanish culture, and helps its members keep in touch with Spanish culture. All who are interested are welcome to join and brush up on their language skills, as well as discuss the culture of Spanish-speaking societies.

### Society of Women Engineers (SWE) (AC)

The Norwich chapter of the Society of Women Engineers brings members together to forge friendships and give members an opportunity to explore the professional world of engineering. Official SWE web site: [www.swe.org](http://www.swe.org) (<http://www.swe.org>).

### NU Tactical Society (NUTS) (SI)

The NU tactical society seeks to relieve the stress of the college environment by providing students with a creative outlet. The historic war games are designed in a realistic military format and allow for multiple players to test their tactical skills.

### Tau Beta Pi (engineering) (AC)

This is a national engineering honor society. Official National Tau Beta Pi web site: [www.tbp.org](http://www.tbp.org) (<http://www.tbp.org>).

### Television Production Unit (SI)

Produced by students in the Communications program, the series *Norwich Today* and *Our American Journey* have won numerous national awards from professional organizations such as the *Society for Professional Journalists* and the *Academy of Television Arts & Sciences*. These include national first place awards and "College Emmys." The series air on public-access cable as well as on the Burlington-based CBS affiliate, WCAX-TV. Individual programs have also made appearances on Vermont Public Television and nationally on The History Channel. The production unit provides video support for the Strategic Information Warfare Unit of the Vermont National Guard and additionally produces "NTV: Norwich Music Television" which features licensed contractual service from the major recording labels. More information is available on the Television Production Unit pages.

### Upsilon Pi Epsilon

UPE recognizes academic excellence at both the undergraduate and graduate levels in the Computing and Information Disciplines. Official UPE website: [upei.acm.org/](http://upei.acm.org/) (<http://upei.acm.org/>).



## WNUB (radio station) (SI)

WNUB is a non-commercial, educational FM radio station licensed by the Federal Communications Commission to the Trustees of Norwich University and broadcasts at a frequency of 88.3 MHz in stereo with a power of 285 watts. It is managed and operated by a student staff under the guidance of a Communications faculty advisor. Its broadcast studios and business office are located in the Communications Center. In addition to its popular music programming, WNUB broadcasts regular newscasts (using its AP radio news wire), public service announcements, special educational programming, and live Norwich sports. Nearly 100 students from all class years participate in WNUB, both as a Communications course requirement and as an extracurricular activity.

## War Whoop (SI)

The Norwich University yearbook, *War Whoop*, is produced by a voluntary student organization.

## Academic Policies

Academic Policies affect all students. If a student believes s/he has extenuating circumstances why a policy should be waived s/he must submit an Academic Petition (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/04/Academic-Petition.pdf>) to the Committee on Academic Standards and Degrees (CASD) requesting waiver of such policy.

## Academic Dishonesty, The Honor Code and The Academic Integrity Committee

### Academic Dishonesty

Academic Dishonesty is any behavior intended to promote or enhance a student's academic standing within the University by dishonest means. Acts of academic dishonesty are offenses against established standards of the academic community and the University's honor code. All suspected acts of academic dishonesty are initially subject to review by the Academic Integrity Committee.

Acts of academic dishonesty include, but are not limited to, the following:

- Submitting work done by another as your own.
- Submitting your own academic work for credit more than once, whether in whole or in part, in the same course or different courses without the approval of the instructor who is responsible for assigning credit to the work.
- Giving or receiving unauthorized aid on any assignment or examination.
- Altering any University form, record, or document, or forging the signature of any University instructor or official.
- Interfering with, or attempting to interfere with, the access of others to the University computer system, or any part thereof, copying computer files, diskettes, programs, software, or manuals without proper authority, or tampering in any way with the integrity of the University computer system.
- Interfering with, or attempting to interfere with, the fair and equal access of others to the use of the University libraries or other academic resources
- Exercising plagiarism, which is the use of words, ideas, concepts, or work of another, without proper acknowledgment.
  - The direct quotation of the words of another must be set off in quotation marks and acknowledged in a footnote or other

acceptable form of citation. The use of paraphrased material, or the ideas, concepts, or work of another must also be acknowledged in a footnote or other acceptable form of citation. Acknowledging sources used in the preparation of an assignment solely in a bibliography does not constitute an acceptable acknowledgment of the words, ideas, concepts, or work of another used in the assignment. In any case where a student is found to have used plagiarized material, an academic penalty will be assessed.

### The Honor Code

In addition to being the oldest private military college in the United States, Norwich University has maintained a reputation for developing leaders of high principle. In keeping with this tradition, University President Major General Ernest N. Harmon, USA (Ret.) in 1951 laid the foundation for a formalized Honor Code at Norwich by commissioning a nationwide study of collegiate honor systems to be conducted by Commandant of Cadets Major General Oscar R. Cauldwell, USMC. Elements of the Honor Codes of West Point, Annapolis, and Williams College were used to form the foundation of the Norwich University Honor Code. The President, Commandant, members of the Senior Honor Society, and other leaders of the Corps of Cadets formulated the structure to administer and maintain an honor code, and with the full support of the Corps of Cadets, the Norwich University Honor Code was officially implemented in the fall of 1951.

The Norwich University Honor Code is based on the principles that a student will not evade the truth, deceive, or tolerate those who do. Stated in even simpler terms, the Honor Code requires that every student conduct himself or herself at all times in a completely honest and forthright manner. The fundamental nature of these principles precludes the necessity of legislating detailed regulations to govern conduct in matters of honor, since a student is either honest or not.

It is assumed that all students will abide by the Honor Code. Instructors may require students to write and sign either of the following statements, or such other words as shall convey the same or similar meaning, as part of any assignment submitted for academic credit: "I have neither given nor received unauthorized aid on this assignment." Signed/"I certify that this is my own original work, prepared for this assignment only, without any form of unauthorized aid."

Failure to write and/or sign any pledge will not excuse any student from a violation of these regulations.

### The Academic Integrity Committee (AIC)

AIC is comprised of members of the faculty and chaired by the Senior Vice President of Academic Affairs' designee. Hearings of the AIC are held jointly with the Honor Committee. The AIC is responsible to the Faculty Senate for the implementation of University regulations involving violations of academic integrity. All suspected acts of academic dishonesty, including plagiarism, must be referred promptly to the Academic Integrity Committee for a hearing. The AIC will review all available facts and authorize an appropriate academic penalty if its review confirms that an act of academic dishonesty, or plagiarism, occurred. If the student is found guilty of academic dishonesty and an academic penalty is authorized, the hearing is continued by the Honor Committee. Decisions of the Academic Integrity Committee may be appealed to the Senior Vice President of Academic Affairs. The Procedures of the Academic Integrity Committee describing the procedures of hearings are provided to all students charged with academic dishonesty.

## Academic Honors

Academic honors for full-time undergraduate students, recognize University Scholars and students on the Dean's List and are announced at the Fall Convocation.

### University Scholars

Full-time undergraduate students, who for both the Fall and Spring Semester of the previous academic year earned not only placement on the Dean's List, but also a current cumulative grade point average of no less than 3.50.

### Dean's List Recipients

Full-time undergraduate students, who during either the previous Fall or Spring semester, had no failures, carried at least twelve credits, and earned a semester academic grade-point average of at least 3.0. Dean's List honors are noted on the official transcript.

### Latin Honors

Undergraduate degree candidates whose final cumulative grade point average (GPA), when the degree is conferred, meets the qualifications listed below:

- Summa Cum Laude, 4.0 to 3.60
- Magna Cum Laude, 3.59 to 3.30
- Cum Laude, 3.29 to 3.0
- Latin Honors posted on the official transcript after the final term of enrollment
- Latin Honors printed on the diploma are based on the final cumulative GPA for Fall and Summer graduates.
- Latin Honors printed on the diploma for Spring graduates are based on the cumulative GPA from the previous Fall semester.

### Valedictorian

A full-time bachelor's degree program graduate, who has the highest cumulative GPA (at the beginning of Spring Semester,) based on a minimum of 90 Norwich credits, and enrolled in courses that will complete all degree requirements. This award is given at May Commencement.

## Academic Standing, Re-Admission, Class Level

### Academic Standing

**Academic Standing, as determined by the Registrar's office, is separate from Satisfactory Academic Progress (SAP) (p. 33), as determined by the Financial Planning Office.**

### Good Academic Standing

To maintain good standing, degree-seeking students must maintain a minimum cumulative GPA, for the credit range shown in the first column equal to, but not less than that in the second column, based the sum of

Norwich *attempted* credits, PLUS credits accepted in transfer. A student in good standing is allowed to enroll without restriction.

(1) Total of Credits (attempted plus transferred)	(2) Minimum Accumulative Grade Point Average Required for Enrollment in Good Standing
0-17	1.60
18-34	1.80
35+	2.00

### Academic Probation

Students who fail to earn the cumulative grade point average required for Good Standing at the end of a semester are enrolled for the following semester on Academic Probation. Being placed on Probation warns students that academic progress is in jeopardy and places restrictions and conditions on their enrollment. The conditions are as follows:

- Must have a signed contract with the Academic Achievement Center as a condition of enrollment. The student must sign this contract by the end of the add/drop period. Failure to sign this academic probation contract by end of the add/drop period may lead to dismissal.
- Restricted to 14 credits, plus one ROTC course, per semester.
- Repeat courses where previous grades of C- or below were earned (when possible)
- Not participate in extracurricular activities.
- Hold no rank in the Corps of Cadets and have no additional Corps responsibilities.

A student on Academic Probation is eligible to participate in academic field trips and other appropriate academic activities scheduled as part of course requirements.

Students who fail to adhere to the conditions of enrollment on probation may be Dismissed prior to the conclusion of the semester.

### Academic Dismissal

Students who fail to achieve Good Standing will be Dismissed after one semester on Probation unless the student earns a semester GPA of 2.0, or above, while on probation.

Summer school sessions do not count as semesters on Probation. Summer school credits are included in attempted credits. Students who attain Good Standing after being on Probation will restart the procedure above if they return to probationary status.

Students who are Dismissed for an **unsatisfactory academic or disciplinary** record may apply for readmission after a six-month period of separation has been completed, by submitting a Re-Admission Application (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/02/readmitForm.pdf>) to the Registrar accompanied by an Academic Petition (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/04/Academic-Petition.pdf>) for submission to the CASD at least one week before the start of the semester. The readmission decision of the CASD will be based on evidence that the student can academically succeed. Appeals of CASD decisions may be made to the Senior Vice President for Academic Affairs (SVPAA) whose decision is final.

Students who have been Dismissed for academic reasons and have returned themselves to Good Standing may, provided there are no financial or disciplinary barriers, return to the University.

## Re-Admission (following Academic Dismissal)

Students who have been readmitted after Dismissal for academic deficiency, with the special condition of signing a mentoring contract with the Academic Achievement Center will be dismissed at the end of that semester, if they do not return to Good Standing; unless they obtain a semester GPA of 2.0 or above. Students earning a semester GPA of 2.0 or above will remain enrolled with the original conditions in place until they earn Good Standing, as long as they continue to earn semester GPA's of 2.0 or above, provided they comply with the conditions of their enrollment. Failure to adhere to the mandatory conditions of readmission may result in dismissal from the University prior to the conclusion of the semester.

## Re-Admission (following Disciplinary Dismissal)

Students who are seeking re-admission following disciplinary dismissals must make this request to the Senior Vice President for Student Affairs.

## Class Year Assignment

Class Year	First Semester Credits	Second Semester Credits
Freshman	0 - 12	13 - 26
Sophomore	27 - 41	42 - 56
Junior	57 - 72	73 - 88
Senior	89 - 103	104+

Students will be assigned a class year at the time of their admission or re-admission. Updating of class year will occur as credits are posted. Classification will be based on the above chart. The student who fails, at the beginning of each semester, to have earned the required number of credits to remain with his or her class, but who is eligible to enroll, will be reclassified to the next highest class year which is supported by total credits earned.

## Americans with Disabilities Act (ADA)

### Section 504 of the Rehabilitation Act of 1973 and/or the Americans with Disabilities Act provides:

- That no student may be excluded from any program or any course solely on the basis of disability;
- That modifications in degree or course requirements may be necessary to meet the requirements of some disabled students;
- That auxiliary aides, such as tape recorders, must be permitted in the classroom when they are required to ensure the full participation of disabled students;
- That alternate testing and evaluation methods for measuring student achievement will be necessary for students with impaired sensory, manual, or speaking skills (except where those are skills being measured);
- That classes may have to be relocated to permit access for students with mobility impairments;
- That special teaching equipment or devices used in the classroom (and in some cases teaching techniques that rely upon the sight, hearing, or mobility of students) may require adaptation in individual cases; and
- That it is discriminatory to counsel disabled students toward more restrictive careers than non disabled students unless such counsel is based on strict licensing or certification requirements in a profession.

## Admission & Transition:

Norwich University will not discriminate against any applicant, who is otherwise qualified, solely on the basis of disability. No inquiry will be made regarding any possible disabling condition until after the admission decision has been made and the applicant informed of acceptance or rejection.

## Physical Standard:

Because of the physical training component of the Corps of Cadets program, a physical examination is required for all students admitted to that program. A physical examination is also required of any student participating in intercollegiate sports. Students must meet certain standards of physical ability to participate in these programs. In addition, all students admitted to Norwich University will receive a standard form requesting information about diagnosed disabilities which may have an impact on functioning in the college setting.

Note: Disability disclosure on the University form is purely voluntary; the form must be returned to the University, regardless.

## Documentation Procedure:

Any student who has identified him/herself as having a disability shall submit the following as written documentation in order for accommodations to be made. As appropriate to the type and severity of the disability, written documentation must include: A comprehensive neurological, medical, psychological or educational report by an appropriate licensed medical or educational specialist. This report must contain:

- Date of evaluation and/or date of original diagnosis and diagnostic statement identifying the disability with a medical or DSM-IV code (learning disability reports may be no more than five years old; AD/HD reports, no more than three).
- Explanation of diagnostic criteria and/or evaluation measures used with all test scores included;
- Explanation of current/future functional impact of the condition;
- Services, accommodations, treatment, medication, and/or assistive devices currently in use or prescribed;
- Credentials of diagnosing professional(s) [all reports must be on standard-size letterhead, signed by the evaluator(s)].

## Requests for Accommodation

When information is received relating to a disability, which may directly affect the academic, psychological or environmental lifestyle of the student, the appropriate university departments or individuals (e.g. Counseling, Commandant's office, Dean of Students, Infirmary, faculty) can be contacted to coordinate the necessary accommodation only after the student's permission is secured. The following is the procedure.

1. Information will go to the Director of the Academic Achievement Center for review. If documentation is not sufficient, the student will be referred for further evaluation/verification.
2. The Director will determine student eligibility. If the student chooses, an educational profile may be developed listing suggestions for classroom accommodations. (NOTE: The student must formally register with the AAC before accommodations can be arranged.)
3. The Director at the signed request of the student will send the academic advisor and course professors a copy of the educational profile. The student must then meet with these individuals to assist with developing a plan for the execution of accommodations pertinent to each distinct course; this should be done within the first two weeks of classes with or without direct consultation with the

AAC Director. A written contract can be agreed upon, signed by both parties and sent to the Academic Achievement Center Director for placement in the student's file.

4. Decisions about specific adjustments to the Educational Profile can be made only in consultation with the student and further diagnostic information; the AAC Director may then revise the list of legal accommodations included in the student's profile. (NOTE: All accommodations must be based on comprehensive, written diagnostic information from a qualified professional. They cannot be based on school programming reports (IEPs), notes or short letters, conversations or informal observations.)
5. Degree requirements will not be waived for students with disabilities, but course substitutions may be petitioned for in extreme circumstances where accommodations alone have been demonstrated as insufficient to serve the needs of an otherwise qualified disabled student.

## Confidentiality

The material provided by the student or by professionals who have been involved in the student's diagnosis or treatment will be treated as confidential information. Access will be granted only to those involved in the process described above, and only to the extent that it contributes to developing an individual educational plan for the student. Information will be shared with others only with the written permission of the student.

## Appeal

1. Any student dissatisfied with the adjustments made to accommodate a disability will have the right to appeal. The appeal process will be as follows:
  2. A written statement will be sent by the student to the Director of Human Resources, the University 504 Coordinator: This statement should include all the relevant information and should request clear remedial action.
  3. Based on this statement, the Coordinator will either:
    - a. Reactivate the individual planning process, or determine that the plan as developed is appropriate.
    - b. Reject the appeal; it may be resubmitted to the Committee on Academic Standing and Degrees (CASD)
  4. CASD will conduct an informal hearing on the issue, and either change the individual plan or sustain the original decision.
  5. The final level of appeal will be the Senior Vice President of Academic Affairs of the University or a designee. This decision will be final.

## Attendance

### Time

Classes will meet as scheduled by the Registrar's Office.

### Discipline

A member of the faculty is in charge of any classroom and shall have jurisdiction over the classroom and take measures to maintain discipline in conformity with the regulations of the University.

### Cancellation of Class Meeting

If the faculty member is not present ten minutes after the scheduled beginning of a class, the class is canceled. The class will select one class member to report the cancellation to the chair of the academic department of the course being taught, or College Dean of the course being taught, or the Registrar's Office.

## Class Attendance

Faculty are responsible for clearly stating the course attendance policy on the syllabus. Unless stated otherwise, the maximum number of permitted absences is the number of times the course meets per week. Faculty members may assign a grade of "F" to students whose total absences, excused, or un-excused, equals or exceeds 15% of the class meetings, if this policy is stated on the syllabus. Faculty may allow students with passing grades to exceed the 15% limit.

When a student has reached the maximum number of permitted absences, the faculty member will warn the student of impending dismissal from class with a grade of "F." This warning letter will include the course number and section and dates(s) of absence(s). The letter will state that any future unexcused absences may result in recommendation to the Senior Vice President of Academic Affairs (SVPAA), through the course College Dean, that the student be dismissed from the class with a grade of F. A copy of the warning letter will go to the student's academic adviser, the Commandant, the SVPAA and to the Registrar for inclusion in the student's academic record. Receipt of two grades of F for excessive absence during any one semester is cause for immediate separation from the University.

1. Students are expected to be on time for all scheduled classes and laboratory sections and are responsible for handing in all required work on time.
2. Faculty will begin taking attendance on the first class meeting of each semester.
3. Students not attending the first class meeting of a course for which they are registered may be dropped from the class roster upon report of such absence to the Registrar's Office. Exceptions may be granted to students who are unavoidably absent as defined by the excused absence policy. In this instance, excused absences must be approved by the SVPAA prior to the first day of class.
4. Faculty will, in conjunction with students, schedule a make-up exam or a make-up lab, or other appropriate work in lieu thereof, for students with excused absences.
5. The following will be considered excused absences according to the guidelines issues by the Office of the Senior Vice President of Academic Affairs, who is the authority on academic policy.
  - Documented debilitating illness,
  - Emergency leave, as approved by the Commandant or Dean of Students,
  - Single-day course field trips, military obligations for students contracted for commissions in the US military and other military obligations beyond the student's control, varsity athletic contests, and regimental band appearances. For these types of excused absences, an official of the University must submit a request, at least 72 hours in advance to the Commandant's Office for detached service. The student is required to notify his or her instructors at least 48 hours in advance. Faculty may deny an excused absence for students currently achieving a D+ or lower in their course, if the faculty member believes that additional absences are a serious detriment to the student. Faculty members must promptly notify the coach or appropriate official of their denial.
  - Other absences as approved by the faculty member.
6. Absences not excused, will be considered unexcused.



## Credits, Course Substitutions, Prerequisites

### Award of Credit

- Credits and grade points shall be awarded only for those University courses for which a student is properly registered.
- Credits, not grade points, for approved courses taken by a Norwich student at other accredited institutions may be transferred, subject to the residence requirement and provided grades earned are C or higher.
- Federal regulation defines a credit hour as an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutional established equivalence that reasonably approximates
  1. Not less than – one hour of classroom, or direct faculty instruction, and a minimum of two hours of out of class student work each week, for approximately fifteen weeks for one semester, or the equivalent amount of work over a different amount of time; or
  2. At least an equivalent amount of work as required in paragraph (1) above for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

### Credits for Graduation

- Graduation requirements are measured in courses and credits. Courses and credits required for graduation are specified within each Major or Minor Curriculum Map.
- A student will receive the equivalent of one three-credit course to fulfill published credit or course requirements as a free elective in a Major or Minor when three one-credit courses in the same discipline are combined. A student is limited to one such course. One-credit ROTC courses and courses numbered below 100 may not be used.

### Requests for Course Equivalency or Exemption

1. To waive a prerequisite course requirement students must present the adviser's affirmative recommendation to the course's department chair for approval. The basis for such a waiver will be the student's demonstrated knowledge in the area concerned.
2. To waive a degree course requirement on the basis of an exemption, examination, or other documented extra institutional learning; a student must present the affirmative recommendations of major and course department chairs and academic adviser on a Degree Program Waiver /Substitutions form (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/02/degreeWaiverSubstitution.pdf>). The credits for the waived course must be replaced by free electives.
3. To obtain credits and grade points for a course on the basis of an equivalency examination administered under the provisions of 3.d, (i), a student must present the affirmative recommendations of the major and course department chair and the academic adviser on the form. Second semester seniors are not eligible for an equivalency examination unless an Academic Petition is approved not later than one week after mid-semester grades are due. The repeat grade policy does not apply to credits earned by way of an equivalency examination.

4. Types of examinations to accomplish 3b or 3c above are either course equivalency or exemption. Course equivalency by examination is treated as transfer credit and is subject to the limits described in Section IX.
  - a. Examinations for course equivalency or exemption given at Norwich University will be given only if a nationally validated examination covering the same subject matter is not available. Examinations for EN 101 and EN 102 are an exception and may be administered at the beginning of the fall and spring semesters to newly admitted students.
  - b. Before administering an exemption or an equivalency examination, Department Chairs/Directors should determine whether the student wishes to waive the course requirement under paragraph 3b, above, or wishes to obtain credits and grade points for the course under 3c, above. An examination for waiver should be designed to test the student's general knowledge and competency in the tested area. An examination for credits and grade points should be typical of a final examination that covers the entire course content. Where appropriate, term papers, projects, etc. may also be required. An exemption or equivalency examination for laboratory courses may require demonstrated laboratory proficiency.
  - c. If the examination is for credits and grade points under 3c, above, a grade will be assigned and appropriate grade points awarded unless the Pass/Fail option is selected prior to the administering of the examination.
  - d. An extra tuition charge may be assessed by the Bursar's office for examinations under 3c above.
  - e. Credits, not grade points, are to be awarded when evidence that the minimum required grade has been achieved on a nationally validated examination, such as, Advanced Placement (AP), DANTES, CLEP (<http://www.norwich.edu/registrar/prior-learning>), and International Baccalaureate higher level examinations.

### Prerequisites

Students shall not register for a course having prerequisites without having successfully completed those prerequisites or be allowed to remain scheduled for the successive course if the prerequisite course was not completed successfully. Prerequisites are identified in Course Descriptions. For information regarding the waiver of a prerequisite, see Section 2, Item 3a.

### Co-requisites

Students shall not register for courses having co-requisites without registering for the co-requisite course. Co-requisites are identified in Course Descriptions.

### Conflicts

Students shall not schedule courses which require conflicting hours of attendance unless the responsibility for resolution of the conflict is accepted in writing on the course registration form by all of the faculty members and College Deans.



## English as a Second Language Accommodations

### Students Who Are Eligible for Accommodation for Functional Difficulty with English Language:

- Students enrolled at Norwich having come directly from a non English speaking foreign country.
- Students who are U.S. citizens with background of a multilingual environment.

### Determination of Eligibility:

- TOEFL, SAT, ACT, Freshmen Placement Testing scores and transcripts of English courses at the high school or college level will be reviewed by English department personnel to determine placement in ESL or developmental English courses. Such students, as an adjunct to course placement, will be automatically eligible for academic accommodations in all university courses, except in situations where the actual English skill is being assessed.
- Eligibility will customarily expire at the end of the first semester, but may be continued for an additional semester on the basis of English performance, additional diagnostic testing and faculty referral on a case by case basis.
- All eligibility determination will be reviewed by the English department for final approval.

### Allowed Accommodations:

- Reduction of credit penalty for misspellings, words, usage, errors, and sentence structure and punctuation, errors characteristic of EFL/ESL students, except in coursework where those skills are being directly assessed.
- Alternative assignments to gain credit for class participation where spoken language productivity is a problem.
- Allowance of short extensions of time on assignments if appropriate tutorial assistance is in process.
- Allowance of a reasonable amount of additional time for examinations with, or without, a reader, that is administered by the professor or Academic Achievement Center.

### Student Responsibilities:

Students with functional language difficulties should seek every opportunity available in the University to practice English language in academic and social situations. Members of the Corps of Cadets, during their time as rooks, should work with their company chain of command to take advantage of such opportunities in ways compatible with both academic and Corps standards.

## Exams

Examinations include tests, quizzes, graded exercises or laboratory work, hour examinations, and final examinations. Faculty members are expected to be present at examinations to answer questions and maintain order. Examinations, except for quizzes, must be announced at least one week in advance.

A student absent without proper authority from a scheduled examination should be given a zero and is not entitled to a make-up.

Academic departments may make available to students files of previous examinations for use in preparation.

## Final Examinations

- A final examination will be administered in every course unless its omission has been approved by the SVPAA.
- In-class final examinations are normally expected to be no more than 2.5 hours in length.
- If a substitute procedure is used for the final examination, it will apply to all students in that course section.
- All final exams will be completed during the regular final exam period as scheduled by the Registrar.
- Requirements for implementing final examinations will be determined on a course-by-course basis. Departments and schools will report their needs to College Deans who will inform the Registrar.
- In a course that requires a final examination, the examination will count no more than fifty percent of the course grade. At the beginning of a course, instructors will inform students of the weight of the final examination and the method of grading in the course on the course syllabus.
- Intercollegiate, extracurricular, and intramural activities will not be scheduled during a final examination period or during the Reading Period which precedes it.
- Re-examination will be conducted only after an academic petition has been submitted and approved by the Committee on Academic Standing and Degrees and the SVPAA .

## One-hour Examinations in Multi-Section Courses

- The use of examinations which are equivalent both quantitatively and qualitatively, but different, is encouraged.
- The same examination may be given to multiple sections, when approved by the department head or school director, if identical tests are administered at two consecutive periods in the same day. A student should not be permitted to leave the classroom before the end of the first period.

## Common-hour Examinations

- Concurrent identical testing of several sections of a multi-section course (Common-Hour Examination) is permitted only upon approval of the SVPAA at least two weeks in advance of the test date.
- Common-hour examinations will normally be held during the evening.
- A student unable to take a common-hour examination because of an excused absence must be given an opportunity to make-up the examination at a time to be determined by both the course instructor and the student.

## Attendance

Attendance at scheduled examinations is mandatory.

## Special Final Examination For Seniors

- Seniors who, at the end of the second semester, receive a final grade of "F" in a course as the result of exceptional circumstances surrounding the final examination may petition the Committee on Academic Standing and Degrees for a reexamination.
- A record of marginal or failing performance in the course prior to the final examination may cause a petition for reexamination to be denied.

## Three Final Examinations In One Day

Students who have three final examinations scheduled on the same day may complete an exception form to have one of the three rescheduled to another date. The form is to be submitted to the Registrar's Office

prior to the last week of the semester. The selection of the examination to be rescheduled and the time of its administration will be the result of coordination by the Registrar's Office in conjunction with the student and professor(s) concerned.

Family Policy Compliance Office  
U.S. Department of Education  
400 Maryland Avenue, SW  
Washington, DC 20202

## Rescheduling Final Exams

Students may request that a final be rescheduled by submitting an exception form to the College Dean with an explanation of the reason for rescheduling and supporting documentation including the recommendation of the course instructor and course department chair or school director.

## Data Privacy (FERPA)

### Family Educational Rights and Privacy Act Notification of Rights under FERPA

The Family Educational Rights and Privacy Act (FERPA) affords eligible students certain rights with respect to their education records. (An "eligible student" under FERPA is a student who is 18 years of age or older or who attends a post secondary institution.) These rights include:

The right to inspect and review the student's education records within 45 days after the day Norwich University receives a request for access. A student should submit to the registrar, dean, head of the academic department, or other appropriate official, a written request that identifies the record(s) the student wishes to inspect. The school official will make arrangements for access and notify the student of the time and place where the records may be inspected. If the records are not maintained by the school official to whom the request was submitted, that official shall advise the student of the correct official to whom the request should be addressed.

The right to request the amendment of the student's education records that the student believes is inaccurate, misleading, or otherwise in violation of the student's privacy rights under FERPA.

A student who wishes to ask the school to amend a record should write the school official responsible for the record, clearly identify the part of the record the student wants changed, and specify why it should be changed.

If the school decides not to amend the record as requested, the school will notify the student in writing of the decision and the student's right to a hearing regarding the request for amendment. Additional information regarding the hearing procedures will be provided to the student when notified of the right to a hearing.

The right to provide written consent before the university discloses personally identifiable information (PII) from the student's education records, except to the extent that FERPA authorizes disclosure without consent. The circumstances and university personnel that may access personally identifiable information (PII) without student consent are defined and described in paragraph 5 and 6.

If students wish to share their academic information with parents, family members, NU ROTC staff, or other agencies a student must complete a FERPA release form each semester. The form provides permission for academic information to be released to the designated party until the end of the semester following the date the release is signed.

The right to file a complaint with the U.S. Department of Education concerning alleged failures by Norwich University to comply with the requirements of FERPA. The name and address of the Office that administers FERPA is:

### Directory Information:

Section §99.37 of the regulations allow the release of "Directory (Public) Information" without the student's consent. Directory Information Includes:

- Student's name
- Student's local address & telephone number
- Student's e-mail address
- Dates of enrollment
- Date of dis enrollment, but not the reason if prior to graduation
- Status of enrollment (i.e. whether the student is, or is not, currently enrolled)
- Full or part-time enrollment
- Major field of study
- Adviser
- Anticipated date of graduation, if currently enrolled
- Date of Birth
- Photos
- Participation in officially recognized activities and sports
- Residency - (Corps of Cadets, Civilian, Commuter)
- Weight and height of members of athletic team
- Degrees earned, if any, and date conferred
- Awards and honors received (including promotions in the Corps of Cadets)

Students have the right to withhold the release of "Directory Information." To do so, a student must make a written request for withholding of this information to the Registrar's Office. It should be noted that if a student asks for "Directory Information" to be withheld, it will be withheld from a variety of sources, including: friends, relatives, prospective employers, honor societies and the news media. Student directories are published on the University's web site, my.norwich.edu, at the end of the "add/drop" period. If the student has not made a request for their information to be blocked by that time, his or her name will appear in those directories. Students should be aware that directory blocks are permanent while in attendance and will not be removed without a written request, until they have completed their studies at Norwich.

### "School Officials" with a "legitimate educational interest"

The school discloses education records without a student's prior written consent under the FERPA exception for disclosure to "school officials" with "legitimate educational interests." A school official is a person employed by Norwich University in an administrative, supervisory, academic, research, or support staff position (including law enforcement personnel and health staff); a person serving on the board of trustees; or a student serving on an official committee, such as a disciplinary or grievance committee.

A school official also may include a volunteer or contractor outside of Norwich University who performs an institutional service or function for which the school would otherwise use its own employees and who is under the direct control of the school with respect to the use and maintenance of PII from education records, such as attorney, auditor, or collection agent or a student volunteering to assist another school official in performing his or her tasks.

A school official has a legitimate educational interest if the official needs to review an education record in order to fulfill his or her professional responsibilities for Norwich University.

FERPA permits the disclosure of PII from students' education records, without consent of the student, if the disclosure meets certain conditions found in §99.31 of the FERPA regulations. Except for disclosures to school officials, disclosures related to some judicial orders or lawfully issued subpoenas, disclosures of directory information, and disclosures to the student, §99.32 of FERPA regulations requires the institution to record the disclosure. Eligible students have a right to inspect and review the record of disclosures. A post secondary institution may disclose PII from the education records without obtaining prior written consent of the student -

- To other school officials, including professors, within Norwich University whom the school has determined to have legitimate educational interests. This includes contractors, consultants, volunteers, or other parties to whom the school has outsourced institutional services or functions, provided that the conditions listed in §99.31(a)(1)(i)(B)(1) - (a)(1)(i)(B)(2) are met. (§99.31(a)(1))
- To officials of another school where the student seeks or intends to enroll, or where the student is already enrolled if the disclosure is for purposes related to the student's enrollment or transfer, subject to the requirements of §99.34. (§99.31(a)(2))
- To authorized representatives of the U.S. Comptroller General, the U.S. Attorney General, the U.S. Secretary of Education, or State and local educational authorities, such as a State post secondary authority that is responsible for supervising the university's State-supported education programs. Disclosures under this provision may be made, subject to the requirements of §99.35, in connection with an audit or evaluation of Federal-or State-supported education programs, or for the enforcement of or compliance with Federal legal requirements that relate to those programs. These entities may make further disclosures of PII to outside entities that are designated by them as their authorized representatives to conduct any audit, evaluation, or enforcement or compliance activity on their behalf. (§99.31(a)(3) and 99.35)
- In connection with financial aid for which the student has applied or which the student has received, if the information is necessary to determine eligibility for the aid, determine the amount of the aid, determine the conditional of the aid, or enforce the terms and conditions of the aid. (§99.31(a)(4))
- To organizations conducting studies for, or on behalf of, the school, in order to: (a) develop, validate, or administer predictive tests; (b) administer student aid programs; or (c) improve instruction. (§99.31(a)(6))
- To accrediting organizations to carry out their accrediting functions. (§99.31(a)(7))
- To parents of an eligible student if the student is a dependent for IRS tax purposes. (§99.31(a)(8))
- To comply with a judicial order or lawfully issued subpoena. (§99.31(a)(9))
- To appropriate officials in connection with a health or safety emergency, subject to §99.36. (§99.31(a)(10))
- Information the school has designated as "directory information" under §99.37. (§99.31(a)(11))
- To a victim of an alleged perpetrator of a crime of violence or a non-forcible sex offense, subject to the requirements of §99.39. The disclosure may only include the final results of the disciplinary

proceeding with respect to that alleged crime or offense, regardless of the finding. (§99.31(a)(13))

- To the general public, the final results of a disciplinary proceeding, subject to the requirements of §99.39, if the school determines the student is an alleged perpetrator of a crime of violence or non-forcible sex offense and the student has committed a violation of the school's rules or policies with respect to the allegation made against him or her. (§99.31(a)(14))
- To parents of a student regarding the student's violation of any Federal, State, or local law, or of any rule or policy of the school, governing the use or possession of alcohol or a controlled substance if the school determines the student committed a disciplinary violation and the student is under the age of 21. (§99.31(a)(15))

## Grades

### Minimum Grade Standards

Minimum grade standards are established for various curricula. These minimum standards are shown in various Curriculum Maps in Majors/ Concentrations/Minors section (p. 36) of this catalog.

### Grades and grade points shall be awarded as listed below:

Grade	Grade Points
A	4.0 grade points per credit
A-	3.7 grade points per credit
B+	3.3 grade points per credit
B	3.0 grade points per credit
B-	2.7 grade points per credit
C+	2.3 grade points per credit
C	2.0 grade points per credit
C-	1.7 grade points per credit
D+	1.3 grade points per credit
D	1.0 grade points per credit
D-	0.7 Grade points per credit hour
F	0.0 grade points per credit
P (Pass)	no grade points; does not affect GPA
AU (Audit)	no grade points
I (Incomplete)	no grade points
NC (No Credit)	no grade points; does not affect GPA
NG (No Grade)	None (Not used for final grade)
S (Satisfactory)	no grade points; only assigned to zero credit courses
U (Unsatisfactory)	no grade points; only assigned for zero credit courses
W (Withdrawal from course)	no grade points; does not affect GPA

### Grade Point Average (GPA)

- GPA is computed by dividing grade points earned by credit hours attempted (minus any P graded credits) after applying the repeat grade policy.
- Only grade points earned and credits attempted in courses at Norwich are included in computing the student's grade point average. (See the Repeat Courses policy below).

- Grades for courses taken after conferral of a degree will not be used to recalculate the grade. Grade point averages for these courses will be calculated separately.

### Repeat Courses/Repeat Grade Policy

- A student shall not receive credit twice for any course except those courses whose catalog description permits repetition for credit.
- If a previously graded course is repeated, and a grade other than W is earned, only the last grade earned in the course will be calculated in the GPA.
- All grades previously earned in the course will be removed from the GPA calculations even in the event that a lower grade is earned upon repetition of the course. If a failing grade is earned upon repetition of a course, any previous credit earned will be lost. Credit by examination does not constitute a repetition under this provision.

### Pass/Fail Option (P/F)

- Students in good academic standing may choose one course per semester in the sophomore, junior, pre-senior and senior years in which to exercise a Pass/Fail option.
- Courses chosen under this option must be free electives. Courses that satisfy University requirements, or are specifically listed courses in the student's major, or require a minimum grade of C, or are restricted electives, other than free electives, may not be taken pass/fail.
- To receive P grade student's work in the designated course must be of at least D- quality. A failing grade of F will be entered on the student's academic record and will be included in all grade point computations, if the student's work was below D- quality. P grades earn credit, but are not be included in grade point computations.
- Students seeking to take a course under the Pass/Fail option shall complete and submit a Pass/Fail Grading Request form (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/02/passfail.pdf>) to the Registrar's Office prior to the course withdrawal deadline.

### Incomplete Grades (I)

- A student who fails to complete required work in any course due to authorized absence caused by illness or emergency may receive the grade of incomplete (I).
- I grades may not be assigned for simple failure to submit required work or not attending class, regular leave, or detached service.
- I grades are only assigned at the end of the semester; not at mid-semester.
- Faculty assigning a grade of I shall complete the I Grade Form and email it to the student and Registrar's office. The form requires:
  - The reason the "I" grade was assigned;
  - What work is still required;
  - The deadline for submission of the work (the instructor determines the deadline, but the deadline shall be no later than 30 days from the last day of finals); and
  - What the grade will be if no additional work is received from the student.
- Faculty have 48 hours to submit a new grade to the Registrar's Office. If no new grade is received the grade that the faculty member stated would be the grade if no additional work was received, will be entered as the course grade.
- A course carrying the grade of I will be excluded from the computation of total credits and grade point averages.

- A student with a grade of I is ineligible for consideration for the Dean's List. Dean's List eligibility is determined at the end of Fall and Spring terms.

### Grading Practices Notification For Students

On the course syllabus, a student must be made aware of the method of grading in the course and of the weight that is attached to all course requirements.

### Grade Reporting By the Faculty

- Faculty enter grades for all on-campus courses twice during the semester.
  - Mid-semester grades are entered on, or before, the Friday of the seventh week of each semester, in accordance with the Academic Calendar. In the rare case where sufficient course evaluation is not available for the reporting of a grade at mid-semester, the grade of "NG" (no grade) is reported. Mid-semester grades are not official grades, are not entered on the permanent record, and are reported for the sole purpose of assisting students in assessing their academic status at mid-semester.
  - Final grades are entered at the conclusion of the semester. These grades are posted on the permanent academic record.
- Final grades must be entered within seventy-two hours after the final examination has been administered. Spring Semester grades for graduating Seniors will need to be entered in less than seventy-two hours. The time for submittal of these grades will be as directed by the Registrar's Office. For courses in which no final examination is given, final grades will be submitted to the Registrar's Office seventy-two hours after reading day.
- Faculty will maintain course grade records for a minimum of one year. Faculty leaving the employment of the University will submit these grade records to their respective department.

### Mid-Semester Grade Notification

- Mid-semester grades appear on the individual student Banner Web Self-Service account. A copy of the mid-semester report for first semester freshman are sent to the eligible parent or guardian.
- After grades have been entered, students may view their grades on their "Degree Evaluation" form. After a period of about one week the students will be able to review their grades and current GPA on their "Academic Transcript" form. Both of these forms are on student's Banner Web account.
- Parents wanting to see the grades of their son or daughter must have s/he open one of the forms on Banner Web listed above. The University does not mail grades or provide grades over the phone in compliance with the Data Privacy (FERPA) policy.

### Academic Warning at Mid-Semester

- Students who are failing two or more courses at mid-semester will be issued an academic warning.
- Students receiving Academic Warnings must report to their academic advisor within 5 days.
- The Registrar's Office will notify the eligible parents or guardians of all first semester freshmen receiving Academic Warnings.

### Changes In Final Grades

- Assignment of final grades in each course is the responsibility of the faculty of record. Students are urged to meet promptly with the faculty member if they have questions regarding the assigned grade.



- Faculty assign a final grade only after a careful and thorough evaluation of the student's performance in the course and in accordance with the grading plan given to the student at the start of the course.
- Unless, as a result of a formal grievance process (p. 17), a final grade will be changed only for cause and only at the request of the faculty member and with the approval of the SVPAA. The SVPAA will require the recommendations of the Department Chair/Director and the College Dean.
- The SVPAA will normally not consider a grade change request if it is received by the Registrar's Office more than 120 days after the grade to be changed was issued.

### Course Audit

- A fee will be assessed for a course audit. The fee will not be charged to a full-time matriculated student unless the audit is an overload.
- Students taking courses as auditors will receive a grade of AU (Audit) on their permanent academic record, if the obligations of the auditor have been met to the satisfaction of the instructor. If the auditing student's performance is unsatisfactory, there will not be a course entry on the academic record.

Auditing students are expected to participate in class discussion and laboratory activities. At the beginning of the course, the student and the instructor will agree on the extent to which the student is expected to attend classes and take examinations. Students may audit a course only if, in doing so, students desiring to take the course for credit are not excluded because of enrollment limitations.

## Independent Learning

### Extra Institutional Learning

Extra Institutional Learning is learning that is attained outside the sponsorship of legally authorized and accredited post secondary educational institutions. The term applies to learning acquired from work and life experiences, independent reading and study, and participation in formal courses sponsored by associations, business, government, industry, unions and the military. Credit from extra institutional learning is treated as transfer credit and is subject to the limits described this section of the catalog.

- Basic ROTC courses may be waived on the basis of at least 6 months of active duty in the Armed Forces or as approved by the appropriate Professor of Military Science.
- Credits, not grade points, for other extra institutional learning as recommended in nationally recognized guides and publications may be awarded upon the positive recommendation of the appropriate course department head and dean. Such credits shall be awarded in compliance with the evaluations provided by the American Council on Education, (ACE).
- Credits, not grade points, may be awarded for upper level International Baccalaureate courses based on evaluation by corresponding academic program departments.

### Internships

Students who intend to engage in an internship must register for the internship during the designated registration period for a fall or spring semester internship and by 1 May for a summer internship. Departmental or school permission is required for an internship. Enrollment for internships will not occur unless the faculty member has received written confirmation from the field supervisor that internship arrangements

are complete. Internships will be scheduled to coincide with opening and closing dates of the semester of internship enrollment. Summer internships will coincide with the beginning and ending dates of the appropriate summer session.

### Independent Study

To support a course registration for an independent study, the affirmative recommendation of the student's academic advisor and the course Department Chair/Director and College Dean must be present on an Independent Study form (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/02/independentStudyForm.pdf>).

### Use of Military Courses to Satisfy Curricular Requirements

Up to six degree credits as free electives toward the Baccalaureate degree may be granted for the following courses: AS 311, AS 312, AS 411, AS 412, MS 311, MS 312, MS 411, MS 412, NS 321, NS 322, NS 331, NS332, NS 342, NS 421, NS 422, NS 431.

### Extra Credit Charges (Course Load & Overload)

Course loads in excess of 16 credits for freshmen and 20 credits for upper class students, (including ROTC and one credit courses) except if specified differently in the major curriculum; require the approval of the student's adviser and Major Department Chair/Director.

Extra credit charges will be applied at the part-time rate for credits over 19, except as specified differently in the Major curriculum. This excludes ROTC courses and MU 260.

- MU 200 Applied Music is subject to the extra credit charge.
- Students should be familiar with published Fees & Financial Policy booklet. Copies may be obtained in the Bursar's office.
- There will be no charge for extra courses if they are dropped before the Add/Drop deadline

## Academic Petitions

### Right of Petition and Appeal

- All academic petitions (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/04/Academic-Petition.pdf>) are to be submitted to the Registrar's Office for action by the Committee on Academic Standing & Degrees (CASD) prior to 12:00 noon on Wednesdays to be reviewed at CASD meetings on Thursdays.
- At a minimum the petition must include a clear written statement attached by the student of the request, the student's signature and the recommendations of the individuals who are identified by role, on the petition form.
- If the petition is for an exception to Academic Regulations, the student must specify the issues to be considered by the CASD to determine if an exception to policy should be granted. Any petition for an exception that lacks justification will not be considered. Submission of a petition does not guarantee approval. Students will be notified via email results of a petition appeal.
- Additional recommendations required -- if reference is made in the petition by the student to any Norwich University official, (because of an alleged action or statement by that official which is germane to the petition) that official (faculty member or administrator) must provide a recommendation.
- Decisions of the CASD may be appealed, within ten business days of receipt of CASD action, to the SVPAA. The SVPAA's decision is final.



## Grievance Procedure

Students who are dissatisfied with some aspect of the conduct of a course are encouraged to seek a resolution of the problem.

- The first step toward resolution is a discussion with the course instructor.
- If no mutually agreeable solution is reached, the student must next take the matter to the faculty member's Department Chair/Director.
- If the Department Chair/Director is unable to resolve the problem, the student should present a written request for relief to the instructor's College Dean. The statement should include a full description of the problem and a request for specific action.
- The Dean will discuss the matter with both the student and the faculty member and will attempt to find a satisfactory resolution of the problem.
- If the issue is not resolved to the student's satisfaction, the student may request that the Dean forward the student's written request and the Dean's written determination to the SVPAA for final review.
- The SVPAA will analyze the material, arrange additional discussion as necessary, and resolve the issue.

## Registration Changes (Add, Drop, Withdraw, Leave of Absence)

### Course Drop/Add and Course Withdrawal

- A student may drop or add a course within one week after classes start. The permanent academic record will not reflect courses Dropped during the first six class days of Fall or Spring Semesters.
- From the end of the Drop/Add period through the last day to Withdraw from a course, a grade of W will be entered on the Permanent Academic Record for any course withdrawal by a student, or the administration. The student is responsible for submitting a complete Drop/Add (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/02/adddrop.pdf>) or Withdrawal form (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/02/withdrawal.pdf>), to the Registrar's Office prior to the deadline. A student must meet with the faculty member prior to withdrawal to obtain his/her signature on the Withdrawal form. After the course Withdrawal deadline, a grade of F will be entered on the Permanent Academic Record for any course withdrawal.
- Withdrawals from the University; students who separates from the University, for any reason, prior to the end of the semester will receive a grade of W for each class.

### Course Schedule Administrative Adjustment

- Within the first 20 school days of a semester, a College Dean may approve course adjustments for students who have been enrolled in an inappropriate level of a course, such as MA 005 rather than MA 101 or vice versa. This adjustment is made using an Administrative Course Adjustment form containing all required signatures, and turned into the Registrar's Office
- Within the first 20 school days of a semester, a College Dean may approve course adjustments for students who are not on track to complete their degree by their expected date of graduation. To be eligible for this adjustment, the adjustment must allow the student to complete the degree within two semesters. This adjustment is made using an Administrative Course Adjustment form containing all required signatures, and turned in to the Registrar's Office.

## University Leave

Norwich has three types of "Leave of Absence" (LOA). There is a general LOA, a military LOA and an emergency LOA. A LOA may not be considered an approved LOA for Title IV Federal Student Aid Program purposes. Students should consult with the Director of Student Financial Planning to determine the effect of any LOA on financial aid.

- **General Leave of Absence** is to allow a student to voluntarily withdraw from the University and to return to the University at a semester of the students' choice following the academic policies in place at the time of the leave.
  - A student taking a general LOA must:
    - Be in good academic standing
    - Request no more than three years
    - Complete the LOA form
    - Students who submit a LOA form will be classified as inactive.
- **Military Leave of Absence** is to allow active reservists and guardsmen who are called up for active duty, a LOA.
  - A student taking a military LOA must complete the LOA form.
  - The leave is for a maximum of three years
  - The student will be classified as an inactive student
  - The student will be returned to the same academic status that they held at the time of their leave.
- **Emergency Leave of Absence** allows a student, due to exceptional circumstance, as approved by the College Dean, to voluntarily withdraw from the University during a current semester and to return to the University within two years.
  - A student who experiences an exceptional circumstance can apply for an emergency leave of absence, which will allow the student to withdraw from all classes, if prior to the twelfth week of classes. If it is after the twelfth week, students may seek their instructors' approval to make arrangements to complete classes or receive Incompletes.
  - A student taking an emergency LOA must complete the LOA form
  - All academic rules and regulations concerning incomplete grades still apply.

## Transfer Credit

### Transferees to Norwich

Students transferring from other institutions are governed by the following transfer credit policy:

- The academic departments shall determine the acceptance of specific courses if the courses have not previously transferred to Norwich.
- Courses in which a grade of less than C, or its equivalent, are not transferable.
- Grade points are not be transferred.
- Credit will transfer only from institutions accredited by the appropriate regional accrediting association or, in accordance with the regulations pertaining to other extra-institutional learning as described in Credits, (p. 12) Core Substitutions, Prerequisite (p. 12) section.
- Limits on the amount of Transfer Credits apply as listed below.
- The posting of transfer credit for approved courses will be undertaken by the Registrar's Office upon the receipt of an official transcript. An official transcript is one that corresponds with the credit granting

institution's definition of "official" and is received directly from that institution by the Admissions or Registrar's office.

## Norwich Students

- A Norwich student wishing to attend another regionally accredited collegiate institution for the purpose of obtaining semester credit hours acceptable to Norwich University should obtain prior approval of both the institution to be attended and the specific course or courses to be taken by filing a completed Transfer Credit Request form ([http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/03/RGS\\_Transfer\\_Credit\\_Request.pdf](http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/03/RGS_Transfer_Credit_Request.pdf)). No transfer of semester credit hours can be assured for courses for which prior approval was not been obtained.
- The academic departments will determine the acceptance of specific courses.
- Provided the grades earned are C or higher, semester credits for approved courses taken at other institutions may be transferred for credit toward the program requirements.
- Grade points are not be transferred.
- The posting of transfer credit for approved courses will be undertaken by the Registrar's Office upon the receipt of an official transcript. An official transcript is one that corresponds with the credit granting institution's definition of "official" and is received directly from that institution by the Admissions or Registrar's office.

## Norwich University's Residence Requirement

(Limits the amount of degree credit which may be transferred to Norwich University.)

- At least 60 degree credits, of those required for the degree, must be earned at Norwich, including not less than 45 of the last 60 degree credits earned.
  - Transfer credit from Norwich approved programs of international, or other off-campus study, are considered as Norwich credit for purposes of determining if 45 of the last 60 credits applied to an undergraduate program.
- Limits to transfer credit in major, minor, and concentration.
  - Major: No more than 40% of credits required in courses specified in the discipline of the major.
  - Minor and Concentration: No more than two of the six required courses specified in the discipline of the minor or concentration.
- Military members currently serving on active duty, including those in the National Guard, Reserves and U.S. Coast Guard, who are enrolled in an online degree completion program, may transfer into the degree program up to 70% of the required credits.
- Military members currently serving on active duty, including those in the National Guard, Reserves and U.S. Coast Guard, who are enrolled in a campus base degree program, may transfer into the degree program up to 75% of the required credits.

## Statute of Catalog Limitations

Students must satisfy the catalog degree requirements of a catalog year that is within ten years of the graduation year.

## Transcripts

A transcript is the official legal document of a student's Norwich University academic record.

The Registrar's Office provides official transcripts of student academic records to others ONLY upon written request and payment by the student. View the Registrar's website for further information of how to request an official transcript be sent (<http://www.norwich.edu/registrar/transcript-requests>).

Official transcripts are withheld until all financial accounts are settled.

Unofficial transcripts are available to students on Banner Web.

Any courses taken after conferral of a degree will be shown as a separate record.

## Athletics

### Vision

The Department of Athletics' Vision is to create and support an environment where student-athletes can achieve athletic success at the University, Regional and National levels while maintaining a high degree of academic achievement. It is also our goal to nurture loyalty among our graduates through their experiences in athletics.

### Mission

The Department of Athletics' Mission is to provide well-rounded and competitive athletic programs as integral parts of the educational process of the University. We offer equal opportunities for male and female student-athletes to participate in a wide variety of intercollegiate sports programs and adhere to the NCAA Division III rules and philosophy. We monitor the academic progress of our student-athletes and support them in their quest to achieve academic success at the University. We provide services and activities to promote positive health and well-being of all our student athletes and administer our athletic programs in a way that contributes to the personal development of our student-athletes through the whole-person concept by fostering the growth of fair play and amateur competition, sportsmanship, leadership, self-discipline, personal integrity and social responsibility.

### Facilities

Athletic facilities at Norwich are among the very best in the Northeast. Andrews Hall, the health, physical education, and sports center, houses racquetball courts, classrooms, training, and physical therapy rooms and a 1200-seat basketball arena. The Jacob Shapiro Field House contains a 200-meter, four-lane track; four tennis courts; and a climbing wall. Plumley Armory houses an indoor swimming pool, a weight room, a wrestling room, an indoor track, and basketball courts. Kreitzberg Arena, The University's ice hockey facility, is a state of the art arena which seats 1410 and can accommodate 5000 spectators for certain events. Sabine Field, an artificial turf field with lights and a 3-lane recreational track used for football, soccer and lacrosse along with the Dog River Rugby pitch complete the major athletic facilities. The university also has a baseball and softball field and several practice fields for athletics and intramurals.

### Men's Sports

There are 11 varsity sports for men at Norwich University. All varsity sports teams compete at the NCAA Division III level and are affiliated in one of five athletic conferences. In recent years, Norwich men's teams have been regularly found in the national rankings, won conference titles, and won three national championships in ice hockey.

Baseball  
Basketball  
Cross Country  
Football  
Ice Hockey

Lacrosse  
Rugby  
Soccer  
Swimming & Diving  
Tennis  
Wrestling

## Women's Sports

There are 9 varsity sports for women at Norwich University. All current women's varsity teams compete at the NCAA Division III level and are members of the Great Northeast Athletic Conference, NERFU and ECAC.

Basketball  
Cross Country  
Ice Hockey  
Lacrosse  
Rugby  
Soccer  
Softball  
Swimming & Diving  
Volleyball

## Club Sports

Club sports at Norwich University do not have varsity status, but participants do travel and compete with teams from outside the University. Recreational clubs offer students an opportunity to pursue other enjoyable athletic activities.

## College of Liberal Arts

Dean: Andrea Talentino

The College of Liberal Arts is composed of the School of Justice Studies and Sociology; the Department of English and Communications; the Department of Modern Languages; the Department of History and Political Science; and the Department of Psychology and Education. In addition, the college is the administrative home of courses in philosophy and music.

### Mission Statement

The mission of the College of Liberal Arts is to provide a comprehensive education that prepares students to think critically and creatively, to value and pursue inquiry, to gain knowledge, and to express themselves effectively in oral, written, and visual forms. Through its Humanities programs the College seeks to bring students to a sophisticated understanding of the stories, histories, and ideologies that inform our collective and personal identities and perspectives, and of the languages that mediate them. Through its Social Sciences programs the College encourages students to engage and illuminate the complexities of social, cultural, and political interactions, past and present, and to seek empirical answers to the ambiguities of human cognition and behavior. Uniting both, the College asks students to develop cross-disciplinary understandings that recognize the complementarity of scholarly disciplines as they reflect a world of diversity and change. Through intellectual and professional application, students of the College of Liberal Arts are expected to examine and shape their own conceptions of themselves and their roles within communities beyond Norwich University, and develop the skills of thought and expression critical to any career.

### Co-Curricular Activities

Through its academic programs, the College of Liberal Arts sponsors publishing, broadcasting, and performance activities open to all students

of the university. These include the student newspaper, *The Norwich Guidon*; the student-produced video news magazine, *Our American Journey*; the campus literary magazine, *Chameleon*; the student radio station, WNUB-FM; the campus theatrical troupe, The Pegasus Players; and such musical organizations as the Regimental Band, the Grenadiers (a rhythm and blues group), and the Campus Choraleers. These activities are described more fully in the General Information section of the university's catalog, under the headings Musical Activities, Publications, Radio Station, and Television Program.

## School of Justice Studies and Sociology

Director: Stanley Shernock

The baccalaureate program in Criminal Justice (p. 62) at Norwich University provides its students with a liberal arts based education that emphasizes critical thinking and knowledge about crime, criminal law, the criminal justice system, and the sociocultural environment in which human behavior occurs. The program emphasizes the interdependence between theoretical and research knowledge and practice. It also strives to cultivate a commitment to the principles of justice, ethics, and public service and the development of leadership skills.

The School also offers a special minor in Computer Crime and Forensics (p. 54) with scholarships available from the Information Assurance Scholarship Program as well as a Sociology minor (p. 111).

The Criminal Justice program is certified by the Massachusetts Department of Higher Education for the Police Career Incentive Pay Program (PCIPP) or Quinn Bill.

## Department of English and Communications

Chair: Kathleen McDonald

Both the English major (p. 69) and the Communications major (p. 53) demand that students write and speak clearly and precisely about historical and contemporary ideas. They provide excellent preparation for many professions and occupations, including law, medicine, teaching, communications, business, government, and military service, as well as excellent preparation for post-graduate study in a variety of fields. In addition to these two majors, the department offers strong minors in English, Writing, Communications, and Philosophy, as well as course work in Music.

The department houses the Norwich literary journal, *The Chameleon*, the university newspaper, *The Guidon* and radio station, WNUB, the university's theater troupe, *Pegasus Players*, as well as co-sponsoring the visiting Writers' Series lectures.

## Department of History and Political Science

Chair: Rowland Brucken

The Department of History and Political Science houses four majors: History (p. 80), Political Science (p. 104), International Studies (p. 84), and Studies in War and Peace (p. 114). Students can also minor in Political Science and History. Each of these Bachelor of Arts degrees will prepare students for a life and career after college by emphasizing skills related to critical thinking, effective written and oral communication, synthesizing and drawing conclusions from disparate data, and information literacy.

Special academic opportunities include working with faculty one-on-one on research projects during the summer, in independent studies during the academic year, and in a two-semester senior Honors program. The faculty in the department also encourage off-campus study, whether in the Washington, D.C. area or in another country.

## Department of Modern Languages

Chair: Frances Chevalier

In an age of ever-increasing internationalism in the arts and sciences, in government and business, and in human relations, the crucial importance of foreign language expertise and cultural sensitivity is more and more apparent. As an essential part of the liberal arts student's curriculum, the study of a foreign language provides an opportunity to learn about another culture and civilization and thus promotes a better understanding of one's own culture.

The department offers a variety of courses in Chinese (p. 49), French (p. 78), German (p. 79), and Spanish (p. 112), which are conducted primarily in the language of instruction. Offerings are designed to give students a thorough mastery of speaking, aural comprehension, reading, and writing skills, insight into cultural practices and perspectives, and an understanding of the nature of language and culture. An extensive language laboratory program offers students a variety of audio and video materials as well as international news broadcasts and other satellite programs in the target language. Electronic study guides are available to students in the computer lab.

Entering students who have had previous language experience and who plan to continue language study are required to take a language placement examination before they are enrolled for classes.

Please Note: **Credit earned in the Department of Modern Languages is sequential. That is, except for those applying for transfer, CLEP, or AP credit, students enrolled in, or having completed upper-division language courses, may not receive credit for lower-level course work.**

## Department of Psychology and Education

Interim Chair: Kevin Fleming

The psychology program at Norwich has been designed to give the student major a broad based foundation in the discipline. Psychology is a scientific enterprise that attempts to articulate principles of human and animal behavior. These principles are formulated within the context of biological, socio-cultural, and environmental factors. Psychology is both a field of scientific inquiry and a professional activity: it shares its subject matter and its methods with the biological and social sciences, while simultaneously sharing some of the same concerns of the arts; namely, human motivation, emotion, aesthetic appreciation and experience, creativity, and the individual's relations to the world and humankind. Students pursuing a B.A. in Psychology (p. 108) at Norwich may explore the discipline from the experimental, personality/social, the developmental, and/or clinical perspectives. Upper level practica, internships, or field placements that permit the student practical work experience in a special interest area are encouraged.

The BS in Education (p. 64) is designed to lead to recommendation for licensure for program completers. The BS in Education requires all students to have a double major. Those choosing elementary education may major in mathematics, or the majority of Liberal arts and science areas that are offered at Norwich University. Those who choose secondary education must major in Mathematics.

## College of Professional Schools

Dean: Aron Temkin

The College of Professional Schools covers a unique breadth of fields including accounting, management, computing, cyber defense, nursing, engineering, construction, and architecture. These programs are

conducted by faculty in the School of Architecture and Art, the School of Business and Management, the David Crawford School of Engineering, and the School of Nursing.

Across these disciplines students and faculty are engaged in teaching and learning processes that combine strong conceptual foundations with hands-on practice. Our engaged spirit of service combines with a willingness to collaborate that is necessary for tackling real-world challenges. When this is combined with the leadership focus of the university, we position our students to engage the problems of our era and build the industries, systems, processes, machines and structures that are required of the next century.

### College Mission

The College of Professional Schools provides students with the means, motivation, confidence and empathy to engage the problems of our era and create the industries, systems, processes, machines and structures that are required of our evolving society.

### Professional Accreditation

The College includes several accredited programs. The School of Nursing offers a BSN degree accredited by the Commission on Collegiate Nursing Education (CCNE). The management and accounting degrees are accredited by the Accreditation Council for Business Schools and Programs (ACBSP). The three engineering degrees - Civil Engineering, Mechanical Engineering, and Electrical and Computer Engineering - are accredited by the Engineering Accreditation Commission (EAC) of ABET. The fourth engineering major, Construction Management, is designed to be accredited by the Applied Science Accreditation Commission (ASAC) of ABET. The Master of Architecture degree is accredited by the National Architecture Accreditation Board (NAAB).

## School of Architecture & Art

Director: Cara Armstrong

Associate Director: Daniel Sagan

Director of Graduate Architecture: Michael Hoffman

Charles A. Dana Professor Woolf; Professor Temkin; Associate Professors Cox, Galligan-Baldwin, Hoffman, Lutz, Sagan and Schaller; Assistant Professors D'Aponte, Parker, Stonorov; Lecturer Armstrong.

### Mission

To offer many opportunities for experiential learning and reflection. The School explores in many dimensions the **meaning of making** and the **making of meaning**. The School reinforces the student's ability to think creatively and independently, and reflects the University's ideals to develop citizens with integrity, conviction, and self-respect; educated and motivated to be leaders in service to the community.

### Degrees and Minors Offered

The School of Architecture and Art offers the Bachelor of Science in Architectural Studies, and the Master of Architecture (NAAB-accredited).

Minors are offered in Architectural Studies (p. 39), Art History (p. 42), and Art. (p. 42)

### Accreditation

Norwich University's School of Architecture + Art is the only NAAB accredited architecture school in northern New England.

In the United States, most state registration boards require a degree from an accredited professional degree program as a prerequisite for licensure. The National Architectural Accrediting Board (NAAB), which is the sole agency authorized to accredit U.S. professional



degree programs in architecture, recognizes three types of degrees: the Bachelor of Architecture, the Master of Architecture, and the Doctor of Architecture. A program may be granted a 6-year, 3-year, or 2-year term of accreditation, depending on the extent of its conformance with established educational standards.

Doctor of Architecture and Master of Architecture degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree that, when earned sequentially, constitute an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree.

Norwich University's School of Architecture + Art offers the following NAAB accredited degree: M. Arch. (pre-professional degree with 141 credits + 34 graduate credits)

Next accreditation visit: 2017.

## School of Business & Management

Director: Najiba Benabess

Associate Director: Stephen Pomeroy

Charles A. Dana Professor Puddicombe; Professors Kabay, Mohaghegh, and Vanecek; Associate Professors Benabess, Blythe, Jolley, Stephenson, and Yandow; Assistant Professors Chung, Hansen; Lecturers Almagambetov, Bovee, and Pomeroy.

### Mission

The mission of the School of Business and Management is to provide a high quality education that emphasizes technical competence, critical thinking, ethical practices, communication and other interpersonal skills that qualify and equip our students to pursue a variety of life pursuits.

### Degrees and Minors Offered

The School of Business and Management offers the B.S. in Management (p. 88), B.S. in Accounting (p. 38), B.S. in Computer Science (p. 56) and B.S. in Computer Security and Information Assurance (p. 58). The B.S. in Management degree requires that students choose one of the following concentrations: Leadership (p. 87), Marketing (p. 90), Financial Economics (p. 77) and Computer Information Systems (p. 54).

Minors are offered in Accounting, Business Administration, Computer Information Systems, Computer Science, Economics, Finance, Marketing, Computer Crime & Forensics and Information Assurance.

The Master of Business Administration (MBA) and Master of Science in Computer Security and Information Assurance (MSIA) are offered through the College of Graduate and Continuing studies and described in the CGCS section of the online catalog.

### Accreditation

Norwich University, through its School of Business and Management, is nationally accredited by the Accreditation Council for Business Schools and Programs (ACBSP) for the offering of the B.S. in Management and B.S. in Accounting. ACBSP promotes continuous improvement and recognizes excellence in the accreditation of business education programs around the world.

## The David Crawford School of Engineering

Director: Stephen Fitzhugh

Chairs: Jeffrey Mountain, Michael Prairie, Edwin Schmeckpeper,

Charles A. Dana Professor Wight; Professors Descoteaux, Fitzhugh, Lessard, Schmeckpeper, and Wallace; Associate Professors Beneat, Friend, Kelley, Mountain, Prairie, and Sevi; Assistant Professors Al-

Aubaidy, Kulkarni, Patterson, Supan, and Tefe; Lecturers Feinauer, and Rolland.

The David Crawford School of Engineering is comprised of the Departments of Civil, Construction and Environmental Engineering, Electrical and Computer Engineering, and Mechanical Engineering.

### Mission

The Mission of the David Crawford School of Engineering is to:

- Prepare students to excel as engineers.
- Provide a broad, fundamental, and practical engineering education.
- Foster creativity and critical thinking in problem solving.
- Enable students to be leaders in their profession, community, nation, and the world.

### Degrees and Minors Offered

The David Crawford School of Engineering offers Bachelor of Science degrees in Civil Engineering (p. 50), Electrical and Computer Engineering (p. 66), Mechanical Engineering (p. 95) and Construction Management. (p. 60)

A minor is offered in Engineering Science (p. 69).

The Master of Civil Engineering (MCE) is offered through the College of Graduate and Continuing studies.

### Accreditation

The Civil Engineering, Electrical and Computer Engineering, and Mechanical Engineering programs are accredited by the Engineering Accreditation Commission (EAC) of ABET. The Construction Management program is designed to be accredited by the Applied Science Accreditation Commission (ASAC) of ABET.

## School of Nursing

Director: Sharon I. Richie

Associate Professor Richie; Assistant Professors Lapierre, Healy; Lecturers Kiernan, Marchewka, Pitcher and Wood.

### Mission

The Baccalaureate Nursing Program (p. 97) educates qualified nurses to serve individuals and communities throughout the life cycle in health promotion and disease management. Through educational excellence, this program challenges students to respond to the complex system of health care in order to ensure optimum quality and value inpatient care.

### Degrees Offered

The School of Nursing offers the Bachelor of Science in Nursing (BSN) and a Master of Science in Nursing (MSN). The MSN program is offered through the College of Graduate and Continuing studies and is described in the CGCS section of the online catalog.

### Accreditation

The BSN Program is accredited by the Commission on Collegiate Nursing Education (CCNE) One Dupont Circle, NW, Suite 530, Washington, DC 20036, (202) 887-8476 and approved by the Vermont State Board of Nursing, Office of Professional Regulations, National Life Building, Floor 2, Montpelier, VT 05520-2482, (802) 828-2396.



## College of Science and Mathematics

Dean and Professor of Chemistry Michael McGinnis

The College of Science and Mathematics is comprised of the Departments of Biology and Physical Education; Chemistry and Biochemistry; Earth and Environmental Science; Mathematics; Physics; and Sports Medicine. Each department has its own chair.

### Mission

The mission of the College of Science and Mathematics is to provide high quality academic degree programs in mathematics and in the physical, biological and life sciences for our majors. We also provide support courses in these areas to meet the needs of the University. To this end we will provide the knowledge, experience and guidance in mathematics and the sciences in lecture, laboratory, and clinical settings that prepare our students to pursue advanced study, successful careers, and to become responsible citizens in a democratic society.

### Department of Chemistry & Biochemistry

Department Chair: Professor Mary Hoppe

Shinquin Programs of Chemistry and Biochemistry

The Bachelor of Science in Chemistry and the Bachelor of Science in Biochemistry (p. 46) offer thorough and hands on laboratory oriented curricula. Our graduates are highly desired by industry and government employers for their laboratory skills, as well as being well qualified for admission to graduate and professional schools. The courses and labs required for these degrees assure that graduates are proficient in the fundamental principles of chemistry and prepared to apply these principles to specialized areas such as environmental, forensic, medicinal, and pharmaceutical chemistry.

### Department of Earth & Environmental Science

Department Chair: Charles A. Dana Professor Richard Dunn

Norwich University, in the middle of the Green Mountain State, is ideally situated for direct and field intensive studies of our natural environment. The Bachelor of Science in Geology degree program (p. 78) is designed to take advantage of our physical location. Courses are presented by faculty who are both respected teachers and active researchers in New England, Europe, and the western U.S.

The Geology degree provides a broad background in the physical sciences with a strong focus on geology and its pivotal role in understanding our environment. In addition, students often use free electives to develop an additional specialization. Graduates in Geology are prepared for a variety of possible careers in industry, consulting, state and federal surveys, the military, and teaching, or to enter graduate school.

The program emphasizes experiential learning through field studies and outdoor education. Courses include real projects and original research participation. The program is enriched through department field trips across New England, eastern Canada, and the western United States. All Geology majors take a pair of capstone courses involving an original research project and a seminar designed to synthesize their education and tie scientific thought to issues in society.

The department is equipped for analysis of ground and surface water, soil, sediment, and rock. Equipment enables terrestrial and lake coring, collection of hydro-geochemical data, determination of sediment characteristics, subsurface studies, geological mapping, and more.

Students in the Environmental Science degree program (p. 71) take full advantage of Norwich University's location in the middle of the Green Mountain State, where we are ideally situated for field studies of our natural environment. The Bachelor of Science in Environmental Science is an interdisciplinary degree for students with environmental interests and career goals. Environmental Science majors start their curriculum with the development of a firm base in the sciences and mathematics. Each student develops an area of specialization by selecting a Concentration from one of two Options. Selection of an Option I Concentration leads to a heavier emphasis in science and engineering, whereas selection of an Option II Concentration results in a stronger emphasis in the social sciences, humanities and business.

The program emphasizes experiential learning through field studies and outdoor education. Courses include real projects and original research participation. The program is enriched through department field trips across New England, eastern Canada, and the western United States. All Environmental Science majors take a pair of capstone courses involving an original research project and a seminar designed to synthesize their education and tie scientific thought to issues in society.

The Department of Earth and Environmental Sciences is equipped for analysis of ground and surface water, soil, sediment, and rock. Equipment enables terrestrial and lake coring, collection of hydro-geochemical data, determination of sediment characteristics, subsurface studies, and more. In addition, majors have access to facilities in their departments of Concentration.

The ten selected Environmental Science Concentrations provide an education that is rigorous and makes graduates widely marketable within industry, graduate education, and the military.

### Department of Mathematics

Department Chair: Professor Robert Poodiack

The Mathematics Department offers a four-year program leading to the Bachelor of Science degree in Mathematics (p. 91). The courses offered are intended to:

- prepare mathematics majors for graduate work in mathematics or careers in computer science, engineering, industry, business, actuary science, or teaching;
- support the curricula in all disciplines, and
- supply the students with the mathematics courses necessary to qualify for teacher licensure.

### Department of Physics

Department Chair: Associate Professor Richard Hyde

Norwich University offers the Bachelor of Science in Physics (p. 100) to students desiring a strong background in basic physics. This curriculum prepares students for work in industry and government, for graduate work in physics and other physical sciences, or for a military career.

### Department of Sports Medicine

Department Chair: Associate Professor Eduardo Hernandez  
Athletic Training Program Coordinator: Lecturer James Murdock

The Bachelor of Science in Athletic Training (p. 43) uses a competency-based approach in both the classroom and clinical settings. Using a medical education model, athletic training students gain experience in a variety of educational domains to prepare them to serve as allied health care providers for the physically active population. Certified Athletic Trainers have specialized education in the prevention, evaluation, diagnosis, and treatment of injuries and

illness affecting physically active populations. Educational content is based on cognitive (knowledge), psycho-motor (skills), and clinical proficiencies (professional, practice-oriented outcomes). The Athletic Training Education Program (ATEP) incorporates hands-on experience in various professional settings. The Athletic Training Education Program (NU-ATEP) is accredited by the Commission on the Accreditation of Athletic Training Education (CAATE). Graduates are eligible to sit for the National Athletic Trainers' Association (NATA) Board of Certification (BOC) examination.

The Health Sciences program (p. 82) provides students an in-depth science background, and an introduction to the health care field. A core curriculum through freshman and sophomore years provides the students with a sound understanding of liberal arts, biology, chemistry, mathematics, physics, assessment, care and prevention.

The Health Science program incorporates hands-on experience in professional settings, with opportunities for internships and other community based learning. The Health Sciences program prepares students to meet the entrance requirements of graduate programs in areas such as physical therapy, occupational therapy, physician's assistant, medicine, public health, exercise sciences, biomechanics, and hospital administration.

## College of National Services

Dean: Colonel Murray Clark

The College is comprised of the Departments of Army Military Science, Aerospace Studies, and Naval Science; each having a department chair and staff.

### Air Force Aerospace Studies

Professor Col Murray Clark (Chair); Assistant Professor Lt Col Gabriel Lajuennesse, Capt Marc Vanderhoof, 1Lt James Feiccabrino; NCOIC TSgt Gary DeDominick, NCOIC SSgt Jazmin Williams

The Air Force ROTC program provides professional preparation for future Air Force officers. The AFROTC is divided into two major programs: the General Military Course (GMC) and the Professional Officer Course (POC). The GMC is offered during the freshman and sophomore years. The GMC deals with the structure, doctrine, and function of the Air Force; communicative skills; and the historical role of air-power. Admission to the advanced course (POC) is on a competitive basis. To enroll in the POC, a student must pass the Air Force Officer Qualifying Test (AFOQT), pass an Air Force physical examination, meet physical fitness standards, qualify academically, successfully complete the AFROTC field training program, and be selected by a board of Air Force officers. The first year of the POC is leadership theory and practice, Air Force management theory and practice, and other aspects of being a professional officer. The second and final year of the POC addresses a broad range of civil/military relations, and the overall social and political context in which U.S. defense policy is formulated and affected. Leadership Laboratory meets one period per week for two hours throughout the student's enrollment in Air Force ROTC. Instruction is conducted within the framework of an Air Force organization with a progression of experience designed to develop each student's leadership potential. The cadet physical training program is an essential part of leadership laboratory and is mandatory for all cadets. A detailed introduction and orientation to life on an active Air Force base occurs during a field encampment between the student's sophomore and junior years.

### Army Military Science

Professor COL Eric W. Brigham (Chair); Assistant Professors: MAJ Thomas Whipple, MAJ Christopher Fouracre, MAJ Richard Zubeck, CPT Dana Lafaier, CPT Joshua Slattery, CPT Gregory Wortman (Dartmouth Liaison Officer); Assistant Military Instructors: SGM Michael Wolff (Detachment Sergeant Major), MSG Nathan Gaines, MSG Philip Heil, MSG Walter Hooper, SFC James Close, SFC Ryan Osborne, SFC Michael Sneed, Mr. Clifford Mullen, Mr. Cory Ryder. Ms. Julie Craig (Army ROTC Recruiting Operations Officer),

The program of Military Science (MS) attracts, motivates, and prepares selected students to serve as commissioned officers in the U. S. Army, either on active duty or on reserve duty, in the National Guard or Army Reserve. It provides an appreciation and understanding of the history and future efforts of land power in the defense of the United States. It develops the dynamic leadership required in the 21st century and complements the baccalaureate degree, in the chosen course of study.

The MS Leadership Laboratory is a weekly, two-hour period of practical instruction and an integral part of the Military Science curriculum (p. 155), enhancing leadership, physical fitness, and military skills training. Outside of the regular curriculum, there are three, military companies offering additional training and development: Mountain and Cold Weather Company develops leader skills and attributes while conducting military mountaineering, cold weather survival, and small unit light infantry tactics. Ranger Company offers further leadership development and training in small unit operations and patrolling; a *Ranger Challenge Team* competes each fall at Fort Knox, Kentucky, with other Senior Military Colleges demonstrating military skills. The Norwich Artillery Battery offers additional leadership and development by training on Army artillery equipment. The Battery provides all ceremonial cannon fire support for University events.

To qualify for enrollment in the Army ROTC Advanced Course, MS III and MS IV, requirement of a minimum academic cumulative 2.0 GPA, established physical requirements, a 2.0 or higher GPA in the Army ROTC Basic Course (MS I and MS II), and demonstrate leadership potential. The Advanced Course requires to complete a thirty-five day Leadership Development and Assessment Course in the summer, normally following the MS III (junior) year. In addition to the Military Science courses, required to complete a military history course (HI 235, HI 236) or a Military Science history course (MS 499). The Army ROTC program allows both Nursing students, as well as Veterans, to be in a civilian lifestyle pursuing an Army ROTC commission.

### Naval Science

Professor Col Robert C. Kuckuk (Chair); Assistant Professors: CDR August Trottman, Maj Karl Schlegel, Capt Ramon Ballester, LT Anthony Lozano, LT Brandon Kent, LT Seamus O'Brien, SSgt Christopher Perkins.

The mission of the Department of Naval Science at Norwich University is to develop midshipmen **morally, mentally, and physically**, and to imbue them with the highest ideals of duty, honor and loyalty, and with the core values of honor, courage and commitment in order to commission college graduates as naval officers who possess a basic professional background, are motivated toward careers in the naval service, and have a potential for future development in mind and character so as to assume the highest responsibilities of command, citizenship and government.

The primary goals of the Naval ROTC Program are to provide students:

- A strong sense of personal integrity, honor, and individual responsibility;

- Leadership training enabling them to successfully lead others under stressful and demanding conditions;
- An understanding of the fundamental concepts of naval science and a basic level of military aptitude;
- An academic background allowing them to successfully undertake demanding leadership and managerial positions;
- A high state of physical fitness for personal health and performance.

The Naval Science Leadership Laboratory is a weekly two-hour period conducted during each academic semester. Emphasis is placed on non-academic professional training. The laboratory is intended for such topics as drill and ceremonies, leadership and ethics, physical fitness and swim testing, cruise preparation, cruise evaluation, sail training, safety awareness, preparation for commissioning, personal finances, insurance, and applied exercises in naval ship systems, navigation, naval operations, naval administration, and military justice. Enrollment into Naval Science Laboratory is restricted to students contracted to U.S. Navy and U.S. Marine Corps.

## Corps of Cadets and the ROTC

### Corps of Cadets

For more than 180 years, Norwich University has prepared young men, and since 1974 young women, for roles as “citizen soldiers.”

When Captain Alden Partridge founded the university at Norwich, Vermont in 1819, he established the first private college in the United States to include in its basic organization military training for its students. Today, the U.S. Army officially credits Captain Partridge’s “citizen soldier” concept as the forerunner of today’s Reserve Officer Training Corps (ROTC).

The Norwich University Corps of Cadets is organized as a self-governing group in which each cadet learns the value of discipline and the essential nature of leadership. Participation in ROTC, including military labs and physical training, is an integral part of the Corps leadership experience. Cadets must enroll in either Army, Air Force, Navy or Marine Corps ROTC to maintain membership in the Corps of Cadets. To be eligible to graduate in uniform as a member of the Corps of Cadets and qualify for a Corps diploma, a cadet must successfully complete three years, six semesters, of ROTC courses, 2 each, at the 100, 200, and 300 levels respectively. Cadets seeking commissions are required to complete a fourth year of ROTC and meet all other requirements established by the commissioning branch.

The ROTC programs exist to commission well-educated officers into the Army, Air Force, Navy, and Marine Corps in sufficient numbers to meet the requirements of these services. The general objectives of the programs are to provide understanding of the principles of military, aerospace, and naval science; to develop comprehension of associated professional knowledge; to build attitudes of integrity, honor, and individual responsibility; and to encourage appreciation of national security requirements. These objectives support the mission of Norwich University and the Corps of Cadets and augment the training plan necessary to prepare Cadets for service to the Nation as soldiers and citizens.

To be enrolled in Norwich University’s ROTC program or courses, a student must be a member of the Corps of Cadets, with the exception of nursing students.

### ROTC Requirement

To be enrolled in Norwich University’s ROTC program or courses, a student must be a member of the Corps of Cadets. An exception to this regulation is allowed for students majoring in Nursing.

Students who have honorably and faithfully served our nation as a member of the Armed Forces of the United States, as evidenced by either the award of an honorable discharge certificate (DD214), or the completion of three years of honorable service in the active component, the reserve component (drilling member), or a combination of both as evidenced by a letter from the individuals commanding officer, and has achieved the age of at least 22 years as of 1 September of the year of matriculation, may apply for enrollment in the Norwich University ROTC program of their choice. The applicable ROTC Department Professor (Colonel), the Dean of National Services, and the Commandant will review the applicants file for eligibility to enroll in ROTC and pursue a commission in the service of their choice.

#### Cadets contracted for Commission

The Norwich University Board of Trustees has directed that all members of the Corps of Cadets, who are contracted for commission, be required to take four years of ROTC courses; one course per semester. The ROTC courses must include each of the two courses offered at each of the four levels (100, 200, 300, 400). Branch of service transfers will be allowed (prerequisites permitting) during the first two years of the requirement.

#### Non-contracted Cadets

- Non-contracted Cadets are required to complete six semesters of ROTC courses. Students remain responsible for all established degree requirements. The ROTC courses must include each of the two courses offered at each of the three levels (100, 200, 300). Branch transfer for non-contracted, third and fourth year Cadets must be coordinated between the ROTC departments and approved by the Dean of the School of National Services School.
- Students transferring into the Corps are required to pass as many ROTC courses as they have semesters remaining at Norwich University.
- Veterans with an honorable discharge certificate (DD214) or the completion of three years of service in the active component, the reserve component (drilling member) or a combination of both, may apply for enrollment in the Norwich University ROTC program of their choice. The applicable ROTC Department Professor (Colonel), and the Commandant will review the applicants.

## Degrees

Norwich University awards the following degrees: Bachelor of Arts; Bachelor of Science; Master of Arts, Master in Science, Master of Architecture; Master of Business Administration; Master of Civil Engineering.

Degree candidates are subject to the degree/Major requirements of the class year to which they are assigned at the time of their admission, or readmission, to the degree program.

### Bachelor of Arts

The Bachelor of Arts degree is awarded with Majors in Criminal justice, Chinese, English, History, International Studies, Political Science, Psychology, Spanish, and Studies in War and Peace.



## BA Requirements:

1. Thirty-six semester courses of at least three credits each.
2. Eight semester courses of 3 or more credits each in the major field of concentration approved by the department concerned and completed with a grade of C or higher.
3. EN 201 or EN 205, and EN 202 or EN 206.
4. Knowledge of a foreign language as indicated by: satisfactory scores (570) on the College Entrance Examination Board Listening and Reading Achievement tests; or by passing an achievement test administered by the Department of Modern Languages; or by passing six credits of a foreign language at the 112 level; or by passing three credits of a course taught in a foreign language at the 206 level or higher. Modern Language Topics courses taught in English do not satisfy this requirement. Students who test out of modern language courses at the 111 and/or 112 level have six credits of modern language waived for 111 and six credits waived for 112. The waived credits must be replaced with free electives. Students who demonstrate knowledge of a foreign language by passing modern language at the 206 level or higher have 12 credits waived that are replaced with free electives. This requirement must be completed prior to the start of the junior year.
5. Four semester courses each of three or more credits, representing two or more of the following areas:  
Communications courses: CM 109, CM 261, CM 335, and CM 436.  
English courses: All catalog courses above 206 EXCEPT EN 240, EN 241, and EN 242. Fine Arts courses: FA 221, FA 222, FA 240, FA 250, and Music and Philosophy courses: MU 101, MU 271, and all catalog courses in Philosophy. Modern Language courses: All courses in Chinese, and all other language courses above 112.
6. Four semester courses of 3 or more credits each representing two or more of the following areas:  
criminal justice (exclusive of CJ 102 and CJ 301), economics, cultural geography, history, psychology, political science and sociology. The University requirement for a history course may be one of these four courses.
7. Two semester courses in mathematics, exclusive of MA 005 Preparatory Mathematics and MA 103 College Algebra I and MA 160 Mathematics for Elementary School Teachers I.
8. Two semester courses in laboratory science with a laboratory component and offered, or approved by the School of Mathematics and Sciences.

## Bachelor of Science

The Bachelor of Science degree is awarded in accounting, architectural studies, athletic training, biology, biochemistry, chemistry, civil engineering, communications, computer security and information assurance, computer science, education, electrical and computer engineering, construction management, environmental science with concentrations in engineering or science, and outside the sciences, geology, management, mathematics, mechanical engineering, nursing, physical education, physics, and sports medicine.

## BS Requirements:

For BS requirements, refer to the specific major (p. 36) section of this catalog.

## Two Degree Programs

Well-qualified students may elect to fulfill the requirements of the Bachelor of Arts and Bachelor of Science, or two Bachelor of Science degrees, in a program directed toward two degrees; subject to the

approval of the departments or schools concerned. Two degrees may take more than four years to complete.

## Two Majors

A student may elect to earn two majors. Such action requires the approval of both departments.

## General Education

Norwich University General Education Goals are designed to provide students with the intellectual tools to experience, explore and master new topics throughout a period of life-long learning. To this end, at least forty credit hours in every major must be dedicated to basic literacy in English, mathematics, humanities, social sciences, and science outside the area of major concentration. Required 100 level courses in English, language, and mathematics must be completed by the end of the sophomore year. If a student fails to meet this requirement, he/she must enroll for these courses first semester junior year. Students majoring in both liberal arts and professional programs must complete the following competencies to meet graduation requirements:

1. Students must be able to write with clarity and precision, and read and listen with comprehension. They must be able to exercise the skills of independent inquiry, that is, to find, analyze, synthesize, and critically evaluate information. This objective will be met beginning with EN 101- EN 102, be reinforced by reading and writing throughout the curriculum, and culminate in a capstone course in each major. Wherever graded written work is required, part of the grade must be used to evaluate clarity and precision, and to reinforce the writing mechanics learned in EN 101- EN 102.
2. Students will achieve an understanding of mathematical and quantitative reasoning and its place in today's world. They should understand how to construct mathematical models as a means of formulating problems and be able to apply appropriate logical, quantitative, and technological methods to solve problems. All students must complete two mathematics courses, exclusive of MA 005 Preparatory Mathematics and MA 103 College Algebra I and MA 160 Mathematics for Elementary School Teachers I.
3. Students will possess a knowledge of and appreciation for the variety of human expression found in cultures and civilizations of the United States and the world. This will be achieved by requiring all students to take one course in history, one course in literature, and one course in arts and humanities.
4. Students will gain a basic level of literacy in current scientific knowledge and theories and develop an appreciation for the natural world, in part through classroom and hands-on laboratory experiences by completing two courses in laboratory science. This will expose students to the scientific method and provide the critical thinking skills, necessary to make intelligent, well informed decisions.
5. Students will possess an understanding of the institutions and processes that are characteristic of human societies. This will be accomplished beginning with a course in psychology, sociology, economics or political science.
6. Students must be able to think critically and make ethical decisions. Critical thinking begins with integration of course work from all general education areas and culminates in the capstone course in each major. Ethical decision-making begins with adherence to the honor code. Students must be able to recognize ethical issues and articulate ethical decisions. This will be achieved in a course that



includes the requirement that students deal with ethical ambiguities and articulate ethical decisions.

7. Students are encouraged to develop leadership skills through participation in leadership classes and activities.

## Specific Courses that Fulfill the General Education Requirements

### English Requirement

EN 102, EN 108, or equivalent must be completed by the end of the second year.

### Mathematics Requirement

Complete two 100 level or above MA courses (MA 005, 103 and 160 do NOT count)

MA 005 Preparatory Mathematics (Must be finished by the end of the first year if it is required.)

One hundred level Math courses must be finished by the end of the second year.

### History Requirement

Complete One History Course (HI). Any History course except HI 209

### Literature Requirement

(Bachelor of Arts candidates have more restrictive literature requirements.)

Complete One Literature Course From:

#### English (EN):

EN 201	World Literature I	3
EN 202	World Literature II	3
EN 210	Modern Short Story	3
EN 220	Children's Literature	3
EN 225	Survey of British Literature I	3
EN 226	Survey of British Literature II	3
EN 227	Survey of American Literature I	3
EN 228	Survey of American Literature II	3
EN 240	Technical Aspects of Theatrical Design	3
EN 244	The Literature of Leadership	3
EN 245	Science Fiction Literature	3
EN 250	Crime in Literature	3
EN 251	Literature of the Sea	3
EN 270	Military Literature	3
EN 320-EN 399		
EN 420	Thematic Seminar-Literature	3
EN 450	Senior Seminar	3

#### French (FR):

FR 321	A Survey of French Literature I	3
FR 322	A Survey of French Literature II	3
FR 327	French Literature of the Twentieth Century I	3
FR 328	French Literature of the Twentieth Century II	3
FR 350	Topics Course (if literature topic)	3
FR 415	Seminar: Topics in French Literature	3
FR 421	Reading and Research on a Topic in French Literature and Civilization	3

#### German (GR):

GR 322	Survey of German Lit I: From the Beginnings to 1848	3
GR 324	Survey of German Literature II: 1848 to 1945	3

GR 326	Survey of German Literature III: 1945 to the Present	3
GR 350	Topics Course (if literature topic)	3
GR 415	Seminar on a Topic in German Literature and Culture	3
GR 421	Reading and Research in German Literature or Civilization	3

#### Spanish (SP):

SP 321	Introduction to the Literature of Spain I	3
SP 322	Introduction to the Literature of Spain II	3
SP 327	Hispano-American Literature I	3
SP 328	Hispano-American Literature II	3
SP 350	Topics Course (if literature topic)	3
SP 415	Seminar: Topics in Spanish or Latin-American Literature and Culture	3
SP 421	Reading and Research in Spanish or Latin-American Literature and Culture	3

### Arts and Humanities Requirement

Complete One of the following:

English courses above EN 206 (except EN 240, EN 241, EN 242)

MU 101	Music Appreciation	3
MU 271	History of Jazz	3

All Philosophy (PH) courses

All modern language courses (Chinese, French, German, and Spanish) numbered 112 and above

All Fine Arts (FA) courses

All Studio Arts (SA) courses

Communication:

CM 109	Introduction to Mass Media	3
CM 261	Interpersonal Communications	3
CM 335	Television Criticism	3
CM 436	Communications Law and Ethics	3

### Social Science Requirement

Complete One of the Following:

Psychology PY

Sociology SO

Economics EC

Political PO

Science

### Ethics Requirement

Complete Complete One Course From Below

AP 436	Project Delivery and Documentation	4
CM 436	Communications Law and Ethics	3
EG 450	Professional Issues	3
EG 043	Conference	0
EN 450	Senior Seminar	3
NS 422	Leadership and Ethics	3
PH 303	Survey of Ethics	3
PH 322	Business Ethics	3
PH 323	Environmental Ethics	3
PH 324	Criminal Justice Ethics	3
PH 350	Medical Ethics	3
PY 360	History and Systems of Psychology	3

SM 439	Leadership & Management in Sports Medicine	3
SSDA 400	The Capstone Project	6

**Science (with laboratory) Requirement**

Complete Two Lab Science Courses from BI, CH, GL or PS

**Capstone Requirement**

complete one Capstone course (as indicated in Major requirements)

## Graduation

### Graduation Requirements for all Baccalaureate Degrees

The B.A. requirements are embedded within the B.A. degree programs and are the responsibility of the College of Liberal Arts to verify for degree completion. For new first time students, the catalog requirements are determined by the year they enter Norwich. For transfer students, re-admitted students, and students who change majors, the determination of catalog year is made by the student's adviser at the time of transfer, re-admission, or change of major.

- A cumulative grade-point average of 2.00.
- A minimum of 120 semester credits.
- Meet the residence requirement (p. 18).
- Satisfy the catalog degree requirements of a catalog year that is within ten years of the graduation year.
- Satisfy the General Education requirements (p. 26).

### Conferring of Degrees

- The faculty, through the Committee on Academic Standings and Degrees (CASD), shall recommend to the President students who have completed degree requirements.
- No degree shall be conferred, or diploma awarded, until the Registrar's Office determines that all degree requirements are met.
- No degree shall be conferred, or diploma awarded, until the recipient has paid all University bills or arranged for payment to the satisfaction of the Chief Financial Officer.
- No undergraduate degree shall be conferred, or diploma awarded, until the SVPAA and Commandant has cleared the student's record.
- Only those undergraduate students who have met graduation requirements, or are in good standing, and enrolled in courses, after the Withdrawal date in the Spring semester, that could complete graduation requirements; will be allowed to participate in May Commencement Exercises. Enrollment in summer courses does **not** satisfy this requirement.

See additional information under Majors/Concentrations/Minors (p. 36)

## International Center

The International Center, under the leadership of the Assistant Vice President for International Education, is responsible for partnering with a wide range of internal and external stakeholders to advance the comprehensive internationalization of the university through the alignment and integration of policies, programs, and initiatives designed to position the university as more globally oriented and internationally connected. The work of comprehensive internationalization takes place over a broad range of domains, including but not limited to the following:

- Education Abroad
- International Students
- International Scholars
- International Partnerships

### Education Abroad

The International Center provides a wide range of programs and services related to the design, development, implementation, and evaluation of a full range of services and programs for students seeking, engaged in, or who have returned from education abroad programs. There are unlimited opportunities to study abroad. The International Center has access to an extensive network of education abroad programs offered by third-party providers all over the world. Programs are offered at a variety of times through the year, at a variety of costs, and in a variety of disciplines in order to suit the full spectrum of Norwich students. In addition to programs through third-party providers, the International Center also works with Norwich faculty to develop our own program offerings that are specifically designed with Norwich students in mind. There are also opportunities for Norwich students to participate as an exchange student through one of the many exchange agreements that the university maintains with institutions abroad.

### International Students

The International Center provides a wide range of programs and services related to the full life cycle of an international student, including but not limited to international recruitment and admissions, issuance of initial immigration documents, pre-arrival outreach and communications, orientation and ongoing social and cultural programming, immigration advising, and general support services and programs to ensure academic success and retention. The International Center creates required immigration documents, coordinates orientation for new international students, helps students maintain their immigration status once they are in the US and at the university, offers a variety of programs and activities, and advises students on everything from adjusting to a new culture to applying for work authorization. The International Center also works closely with academic advisers and student services offices to ensure the success of international students. The International Center is also responsible for ensuring university-wide compliance with a wide range of federal regulations relating to the enrollment and/or employment of international students. Staff members in the International Center who work with international students must be certified by and registered with the US Department of Homeland Security and the US Department of State as Designated School Officials (DSO) and Responsible Officers (ROs).

### International Scholars

The International Center facilitates the process of bringing international visiting scholars to the university to engage in joint teaching and/or research projects with the faculty. The university regards the presence of international visiting scholars as being of strategic importance to fostering international education and the internationalization of the institution. Norwich University welcomes opportunities to host international visiting scholars whose goals are consistent with the teaching/research mission and available resources of the host college, school, department, and/or program. An alignment of interests between an international visiting scholar and the host college, school, department, and/or program contributes to the richness of the experience for the international visiting scholar as well as providing valuable contributions to the intellectual life of faculty, staff and students. The International Center is also responsible for ensuring university-wide compliance with a wide range of federal regulations relating to the presence of international visiting scholars at

the university. Staff members in the International Center who work with international visiting scholars must be certified by and registered with the US Department of Homeland Security and the US Department of State as Responsible Officers (ROs).

## International Partnerships

The International Center works closely with academic and administrative units throughout the university to develop and maintain a wide array of sustainable international partnerships that include a comprehensive range of activities in education, outreach, and research, and are designed to enhance the internationalization of teaching and learning at the university and to facilitate the discovery and sharing of knowledge between Norwich University and the world. These partnerships include, but are not limited to, faculty exchange agreements, student exchange agreements, joint research agreements, joint or dual degree programs, etc.

## Leadership Program

### Office of Leadership and Student Experience

Tracey Poirier '96, Assistant Vice President

#### Mission

The Office of Leadership and Student Experience supports the intellectual, personal, and leadership development of all students. The Office offers skill development opportunities to enhance academic success that prepares students for leadership roles in a diverse, dynamic, and global society. The Office of Leadership and Student Experience remains committed to promoting and practicing the Norwich University guiding values; infusing these ideals into our programs and relationships with students.

#### Leader Lab @ Norwich

To continue the Norwich tradition of producing the best leaders in the nation, students participate in a leader development program, whether Corp or Civilian, for at least four semesters. Many students have been leaders in their community, high school, church, or in organizations such as scouting or JROTC. At Norwich students will have four years to continue to engage in challenging leadership opportunities.

The Norwich University leader development experience, or Leader Lab @ Norwich, engages freshmen and sophomores in leadership skills training and activities resulting in completion of the basic leadership curriculum. In junior and senior years, the leadership focus is more advanced with complex leadership opportunities that may result in *Leadership Certification*. Students may be the captain of the football team, a company commander, or a student on a complex research team such as the Solar Decathlon team. Leadership experiences will be varied and rich, preparing students to be recognized as proven, inspired leaders.

## Service Learning & Volunteer Programs

### Co-Curricular Service - Learning Projects

Students who would like to participate in a service-learning project outside the classroom may be interested in the co-curricular projects available through the Service-Learning and Volunteer Program Offices. Although wonderful learning experiences; such projects do not typically provide academic credit. Examples of co-curricular projects include:

- Business Plan projects for Habitat for Humanity,
- Hunger in America projects,
- On-going substance abuse education peer response network,
- Volunteer program trips.

Interested students should stop by the Service-Learning Program Office.

## Volunteer Programs

In keeping with the mission and tradition of Norwich University, students, staff, and faculty engage in a variety of community service activities. Successful blood drives are held several times each year supported by both volunteer workers and donors from the Norwich family; Norwich students actively participate in tutoring/mentoring programs through the Northfield Youth Center and the Northfield Middle/High School, as well as other area high schools; and patients at the Veterans Hospital are cheered by visits from members of Naval ROTC. The Norwich University Volunteer Organization (NUVO), Circle K, Semper Fi, Golden Anchors, and the Arnold Air Force Society are all student groups focused on community service activities that regularly provide service to the town of Northfield.

All student groups are encouraged to participate in community service activities. Resident Assistants plan one group community service activity per semester for traditional students living in the residence halls. NU VISIONS, an alternative break program that provides students with the opportunity to volunteer their services in various parts of the United States, is offered to all students. NU VISIONS' trips are usually during spring break with weekend service trips interspersed throughout the academic year.

In addition, at the beginning of each academic year a Volunteer Fair is held on campus which allows the University community to register for volunteer activities directly with local community-based organizations. Students who wish to volunteer with a local agency or community-based organization on an on-going basis are encouraged to visit the Office of Community Service Programs and receive a Volunteer Referral that matches the students' interests with the needs of local agencies/ community-based organizations. Leadership and service projects consist of work with the elderly, youth, homeless, hungry, and economically disadvantaged. All students are encouraged to become active as volunteers, as part of their college experience, with the aim of developing graduates who are "ready, not reluctant" to serve their community and nation.

## Student Services

- Academic Achievement Center (p. 30)
- Admissions (p. 30)
- Career Development Center (p. 31)
- Center for Student Success (p. 31)
- Counseling & Psychological Services (p. 31)
- Dining (p. 32)
- Financial Aid (p. 32)
- Housing (p. 35)
- Information Technology (p. 35)
- Kreitzberg Library and Norwich University Archives (p. 35)
- Sullivan Museum and History Center (p. 36)

## Academic Achievement Center

The Academic Achievement Center (AAC) provides a variety of options for individualized assistance with most facets of academic performance and strategies for academic success in a supportive, personalized, and student-centered atmosphere. All AAC services and programs are included in student tuition.

Norwich students may voluntarily choose from AAC service options, listed below, to achieve their academic goals:

- time management assistance
- planning, and organizational skills
- one-on-one tutorials for papers in all course subject areas
- instruction in fundamental study skills
- reading, writing and note taking strategies
- memorization and exam preparation strategies
- one-on-one tutorials and review sessions in selected course subject areas
- academic coaching

Services are provided by a professional staff consisting of a full-time director, and full and part-time learning specialists supplemented by a trained, supervised staff of peer tutors providing subject-area tutorials in math, lab science, foreign language, and other courses.

The AAC coordinates two peer academic mentoring programs providing academic support and student academic leadership opportunities. The Corps/Civilian Academic Mentoring Program (CAM) provides critical transitional academic support and training for all incoming Freshmen during Fall Semester. CAM sessions are led by sophomores from the same lifestyle and academic major as their mentee. The sessions focus on academic skills, accessing NU resources, and effectively transitioning to college life. The Peer Tutoring Program recruits, trains, and supervises student tutors who provide course-specific tutoring to fellow students in one-on-one or group tutoring sessions. Both programs are designed to benefit both mentors and mentees.

The AAC provides tutoring, mentoring, and coaching for all international and American students for whom English is not their first language. The English as a Second Language (ESL) Learning Specialist helps ESL students become more fluent in English, understand US academic culture, and improve academic performance. Students can meet on an as-needed or regular basis.

Services for students with learning, physical, psychological, or other disabilities are another part of the Center's offerings. AAC staff assists students with properly documenting his/her disability with the following:

- establishing approved Academic Accommodation
- communicating and working with faculty regarding accommodation
- using assistive technology resources.

AAC staff meet with students with disabilities on an as-needed or regular basis, and provide academic coaching to students upon request.

The AAC also coordinates two mandatory programs for students at academic risk--students on Academic Probation, and students who have been Re-admitted to the university after having been Academically Dismissed. Both programs coach and counsel these students to develop educational plans and goals to improve academic performance; to improve time management, organizational, and study skills essential to

academic success; and to access academic and other support resources available on campus.

Center personnel work closely with academic advisers, instructors, and administrators to create a comprehensive support system for students choosing to enhance their academic achievement. Services are voluntary and arranged by appointment. Both day and evening hours are maintained to provide access for students in all programs.

For more information, please contact the Academic Achievement Center at 802-485-2130 or [aac@norwich.edu](mailto:aac@norwich.edu).

## Admissions

### Overview

The admission of students to Norwich University is competitive. Each applicant's file is carefully reviewed by the Office of Admissions. Norwich University is a rolling admissions school, which means that while applications and deposits may be received past the deadlines outlined below, they are accepted only on a space-available basis.

### Application (<https://norwich.edu.185r.net/application/login>) Preferred Deadline:

- Fall Enrollment: February 1
- Spring Enrollment: November 15

### Deposit Deadline:

- Fall Enrollment: May 1
- Spring Enrollment: December 1

### High School Applicants

Students entering, or during the course of, their senior year are encouraged to submit an application (<https://norwich.edu.185r.net/application/login>) to Norwich University. Online and paper applications are accepted (students must use a Norwich University application, as Norwich is **not** a member of the "Common App"). In addition to the application, students must submit the following:

1. Official High School Transcript (including senior year courses and/or senior year grades)
  - Competitive applicants must have completed:
    - four years of English; four years of mathematics;
    - three years of social sciences/history;
    - three years of lab-based sciences;
    - two years of modern languages.

Each applicant's file is reviewed considering the academic program that the student has applied for; because some programs are more challenging in certain academic areas than others, the courses and grades earned in each course is carefully scrutinized to ensure that the accepted student is ready for the university coursework

2. SAT or ACT Scores (Norwich's SAT Code is 3669; ACT code is 4308)
  - Students are highly encouraged to take each exam more than once. Norwich "super-scores" each test, and records only the best scores that the applicant has earned. By submitting all scores, the office of admissions is able to determine the improvement a student has made one test to the next.
3. Applicants are also highly encouraged, though not required, to submit:



- Letters of Recommendation; two or three letters are recommended. Students should choose teachers, coaches, employers, mentors, etc., who know both their academic abilities and their personality.
- Essay; a 300-500 word open-topic essay may also be submitted.

## Transfer Applicants

Students who have completed high school and are enrolled in, or have earned 12 or more college/university credits, are considered transfer applicants. Transfer applicants must submit:

1. An application (<https://norwich.edu.185r.net/application/login>) to Norwich
  2. Final High School Transcript
  3. College Transcripts
    - Any/all college transcripts must be received to properly review a student's file. In order to be evaluated for transfer credit, college transcripts must be official.
4. Transfer applicants are also highly encouraged, though not required, to submit:
- Letters of Recommendation; two or three letters are recommended. Students should choose teachers, coaches, employers, mentors, etc., who know both their academic abilities and their personality.
  - Essay; a 300-500 word open-topic essay may also be submitted.

## International Applicants

Applicants who are not United States Citizens, or Permanent Residents of the United States, are considered international applicants. International applicants must submit:

1. an application (<https://norwich.edu.185r.net/application/login>) to Norwich
  2. Secondary school (high school) transcripts; If the transcript is not in English, the applicant must also submit a translated copy.
  3. Test Scores
- Applicants fluent in English must submit either SAT or ACT scores
  - Applicants whose native language is not English must submit either TOEFL or IELTS scores
4. International applicants are also encouraged to submit:
- Letters of Recommendation; two or three letters are recommended. Students should choose teachers, coaches, employers, mentors, etc., who know both their academic abilities and their personality.
  - Essay; a 300-500 word open topic essay may also be submitted.

## Interested in Admissions

All students seeking admission to Norwich University are highly encouraged to contact our office. In addition to phone/email contact, students and families should consider visiting our campus to get a better feel of the university and the opportunities offered to prospective students. Day visits (<http://www.norwich.edu/admissions/dayvisit>) can be scheduled during the week, Monday-Friday, and families are asked to kindly schedule with two weeks advance notice.

## Office of Admissions

Address: Norwich University, 27 I.D. White Avenue, Northfield, VT 05663;  
Phone: 802.485.2001;

Email: [nuadm@norwich.edu](mailto:nuadm@norwich.edu), Web: [www.norwich.edu/admissions](http://www.norwich.edu/admissions)

## Career Development Center

The Career Development Center assists undergraduate students and alumni of the University in seeking employment in a field consistent with their academic training and interests. In support of this mission, a broad range of programs and services are provided, including assistance with:

- Internships and job searches
- Resume and cover-letter preparation
- Networking
- Mock interviews
- Personal branding
- Job postings
- Class presentations
- Career fairs

...and so much more

Please contact our friendly and experienced staff to get started on your career path!

## Center for Student Success

The Center for Student Success provides the guidance, support, and advocacy for all individual students to significantly improve the academic and social integration necessary to enhance the quality of their college experience.

The Center for Student Success assists students as they matriculate, from year to year, with programs providing social adjustment, academic and financial support, and academic advising. CSS' focus is on the support, success and satisfaction of all Norwich students.

Furthermore, on an institutional level, CSS explores academic and social trends derived from data to create new initiatives and assist the university to improve the overall student experience.

### The Center for Student Success has two major areas of focus:

#### Overall student experience to include:

- Transition from high school to college
- Provide guidance, support, and advocacy for students on various issues; i.e social, personal, and financial well being
- Identifying struggling students and outreaching to create individualized solutions

#### Overall student Veterans' experience to include:

- Transition from the military to civilian life
- Certification and military educational benefits
- Finances and paying for college
- Transition to collegiate academics
- Counseling services
- Academic success planning

## Counseling & Psychological Services

The Norwich University Counseling and Psychological Services Department staff provides for the mental health needs of the University population. Individual and group counseling for students, faculty, and staff is available in a confidential setting. Psychological testing is administered upon request. In addition, thematic groups and psycho-educational

workshops can be provided in response to specific needs. These services are conducted by a highly trained staff of licensed professional psychologists and doctoral level psychology interns.

## Dining (Food Service)

Some of our students will call the place they eat a dining hall, some a mess hall--either way, it is a focal point on the campus. The dining hall is open continuously on weekdays from 6:45 a.m. to 8:00 p.m. Brunch and dinner are provided on Saturdays and Sundays.

- The residential dining plan provides 19 meals a week as well snacks any time the dining hall is open.
- The Corps Freshmen (Rooks) and some of their leaders eat separately on the upper deck of the dining hall. All other students (sophomores, juniors, seniors, corps, civilian, and commuter students on a meal plan) eat together on the main floor.

In addition to the dining hall Norwich offers other options for purchasing food and beverages:

- "The Mill" (<http://lifeat.norwich.edu/wise-campus-center/wcc-spaces-ground-floor>) snack bar offers a wide variety of food and beverages to eat in the Snack Bar or "to go". "The Mill" operates with extended hours during the academic year. Hours are posted.
- Dunkin Donuts (<http://www.dunkindonuts.com/dunkindonuts/en.html>) is located adjacent to "The Mill". The full Dunkin Donuts menu is offered with extended hours during the academic year. Hours are posted.

For more information on Dining Services please go to: [norwichdining.com](http://www.norwichdining.com) (<http://www.norwichdining.com>)

## Financial Aid

Norwich University students receive funding for their educational expenses from a variety of government and institutional programs. All undergraduates accepted to academic programs taught at our residential campus are considered for merit scholarships ranging from \$10,000 to \$20,000 per year (2014-15 awards).

In addition to our university funded grants and scholarships, students may utilize their eligibility for Federal Student Aid Program funding toward their Norwich attendance. Norwich University is an approved participating institution for programs such as the Federal Pell Grant, Stafford Loan, Perkins Loan, Work Study, and Supplemental Education Opportunity Grant.

All US Citizens and permanent residents are encouraged to file the Free Application for Federal Student Aid (FAFSA) online at [www.fafsa.gov](http://www.fafsa.gov) (<http://www.fafsa.gov>) for each year of enrollment. Information about additional eligible Federal Student Aid Program immigration statuses for non-citizens may also be found on the FAFSA website. The majority of aid received by our students is the result of FAFSA filing.

Additionally, many Norwich students receive funding based on their own, or their parent's, military service; or from "outside scholarships" available through local community organizations. We are a participating member of the Department of Defense Yellow Ribbon program which helps ensure veteran benefit eligible students receive full consideration for funding.

Students should also review our Applying for Financial Aid and Financial Aid Satisfactory Academic Progress sections for additional details about important financial aid topics for all students.

Students with questions about the financial aid application process or available programs may contact the Student Financial Planning Office

for assistance via e-mail to [nufinaid@norwich.edu](mailto:nufinaid@norwich.edu), or by phone to (802) 485-2015.

## Applying for Financial Aid Merit Scholarships:

All new and transfer students accepted for enrollment in programs offered at the Northfield, Vermont residential campus are considered for Norwich University merit scholarships. Scholarship reviews are based on academic information provided through the Admissions application process. The student must provide scores from the SAT or ACT standardized tests to be considered. Awards are provided to both domestic and international students. Awards are only provided to full-time enrollment students.

For 2014-15, merit awards for new students range from \$10,000 to \$20,000 per year. The awards are renewable for up to 4 years of enrollment as long as the student achieves and maintains the required GPA for renewal based on their scholarship criteria. Below are the merit scholarship renewal requirements for our most common merit awards. Students are notified of their specific GPA requirements through the annual award notification process.

- President Scholarship, 3.0
- Dean Scholarship, 2.75
- Recognition Scholarship, 2.25

Students who do not meet these criteria receive a warning notice after their first term below standard. If the scholarship is suspended based on subsequent term grades, the student is notified and provided the opportunity to file a Petition for Reinstatement of their merit awards.

Students who become eligible for ROTC funding do not retain their basic merit awards on top of the ROTC funding levels. In addition to the tuition support provided by their ROTC service branch, the Norwich ROTC program includes funding of room and board charges through our ID White Scholarship program. Students who do not receive full tuition coverage through ROTC are considered for need-based funding and/or a service commitment award of \$5,000 in addition to their ROTC tuition awards. All ROTC students are able to retain their Federal Pell Grant eligibility in addition to their ROTC awards.

## Federal, State, and Institutional Grants:

Domestic Students: All US Citizens and Permanent Residents are encouraged to file the Free Application for Federal Student Aid (FAFSA) for each year of enrollment at Norwich University. A list of alternative statuses for being considered an "eligible non-citizen" for Federal Student Aid Program purposes may be found online at the FAFSA website, [www.fafsa.ed.gov](http://www.fafsa.ed.gov) (<http://www.fafsa.ed.gov>).

In addition to determining eligibility for Federal Student Aid Programs such as the Federal Pell Grant and Stafford Loan, the FAFSA is also used to determine eligibility for need-based grants from the student's state of origin and Norwich University. The FAFSA should be filed for each year of enrollment at Norwich University and the student must be in Good Standing based on financial aid Satisfactory Academic Progress policies to remain eligible.

Citizens and eligible non-citizens who do not file the FAFSA may only be considered for loans that are not need-based, such as the Federal PLUS Loan for parents, the unsubsidized Federal Stafford Loan for students or non-federal consumer loans through banks or other lenders. In these cases, the student must provide a signed statement of indicating that they do not intend to file the FAFSA and that they understand they are not eligible for need-based Federal Student Aid Program funding

without filing the FAFSA, and a signed Federal Statement of Educational Purpose.

**International Students:** International students may also apply for need-based grant funding from Norwich University. Students must file our International Student Financial Aid Application for each year of enrollment and the student must be in Good Standing based on financial aid Satisfactory Academic Progress policies to remain eligible.

**Online Graduate Students:** Students are considered for a variety of awards based on their application to the graduate programs. "Military Scholarships" of up to \$1,200 are available to active duty service personnel. The award total is divide by the number of terms in the students program. "Alumni Scholarships" of up to \$2,500 throughout enrollment are available to Norwich University alumni or their spouses. Recent Norwich graduates are also considered for the "Distinguished Scholarship" program. Students selected by the Program Director may also be awarded the "CISSP Scholarship" of up to \$5,000 throughout the program.

### **Award Years:**

For programs offered at the Northfield, VT campus, and for our online undergraduate degree completion programs, the FAFSA award year begins with Fall Semester and runs through the following Summer Semester (ex: Fall 2014 through Summer 2015). For our online graduate degree programs, the FAFSA award year begins with Summer Semester and runs through the following Spring Semester (ex: Summer 2014 through Spring 2015).

### **Part-time and Summer Funding:**

Norwich University grants and scholarships are provided to support full time enrollment during the Fall and Spring Semesters of programs offered at the Northfield, VT campus. These grants are not provided toward part time enrollment or toward Summer Semester enrollment or enrollment in online program classes. Part time and summer students are encouraged to contact the Student Financial Planning Office to discuss eligibility or student loan funds for part time or Summer enrollment.

### **Financial Aid Census Date:**

The Student Financial Planning Office uses the last day of the Add-Drop period for each term as the financial aid Census Date. This description applies to all academic programs and means that all students' financial aid for each term will be finalized to reflect the level of eligibility based on the number of degree required credits the student is enrolled in at the end of the last day of the add/drop period each term.

Students initially awarded at full time status will have their awards adjusted downward if they are confirmed to be in below full time status (12 Semester Credit Hours), and students will be reviewed for award increases if they have added the credits needed to become full time, at the end of add/drop period.

Because there are different program-specific academic calendars based on type of NU degree program (Undergraduate campus-based in Northfield, VT, online undergraduate degree completion, online graduate degree), students are advised to refer to their program specific academic calendar for the specific add/drop period dates for their program of study.

### **Total Withdrawal From All Classes:**

Students are responsible for initiating full withdraw from the college through the formal withdraw process which is initiate through the Center for Student Success (NU programs taught on campus in Northfield, VT) or through their Academic Services Adviser (CGCS graduate and degree completion). By following the formal process, students receive

the best possible information regarding the impact of withdraw on their enrollment services such as ability to re-enroll and how to renew financial aid eligibility. This also provides the college opportunity to work with the student to identify the best information about the students last date of academic activity. Students who do not officially withdraw are subject to the same impacts as those who follow withdraw procedures and the college works to identify the students last date of academic activity based on the best available information from the student's instructors.

Students who begin attending classes and then withdraw from all classes are reviewed to determine whether or not financial aid for the term of withdrawal must be re-calculated based on federal, state, or institutional requirements. This determination is fully separate from the Norwich policy that identifies the amount of tuition or other charges the student is responsible to pay for the term of withdraw. The calculated remaining aid will be applied against the separately calculated balance due after withdraw and in some cases the student may still owe a balance due after the amount of aid they are eligible to retain is subtracted from their final charges.

Students who do not begin attendance in any classes are not eligible for any financial aid for the term. If a student receives a credit balance refund based on anticipated financial aid yet never begins attendance, the student is responsible to repay the credit balance immediately or they are reported to the US Department of Education and they are not eligible to receive Federal Student Aid funding at any college until the overpayment is resolved with the US Department of Education.

In general, students who begin attendance and then fully withdraw from all classes remain eligible for their Federal Student Aid Program grants and loans at a level reflective of the length of time they were enrolled for the term. Once the student has attended over 60% of the term based on total calendar days in the term, no adjustments to Federal Student Aid Program funding are required. For example, a student enrolled for 38% of the term may retain only 38% of the Federal Student Aid Program dollars they received for that same term, but if the same student attends for 75% of the term they are eligible to retain 100% of the financial aid they have received. If funds must be returned to the programs, the student's loan obligations are reduced before any reduction to grant funding takes place.

State grant return criteria varies by state while following the same basic concepts described for the Federal Student Aid Programs. Norwich scholarships and need-based grants are also adjusted to reflect the reduced enrollment time frame. Consideration is made to allow a higher percentage of institutional funding to remain on the student's account when compared to the Federal program remaining percentage. This is done to help reduce any post withdraw balance due and is not a commitment in any manner that the student's balance due will be paid in full by the financial aid programs.

Because the student may remain responsible for a portion of their tuition charges depending on their withdraw date, it is not uncommon for students to owe a remaining balance to the college after all account adjustments have been completed.

### **Financial Aid Satisfactory Academic Progress (SAP) Policy**

Federal regulations require schools to have a Satisfactory Academic Progress policy to enforce the statutory requirement that a student must be making satisfactory academic progress toward degree completion to be eligible for Federal Student Aid Program funding. The same measurements are used to determine eligibility for institutional grants and

funds received through the student's state, although specific rules may vary by state.

The policy must be cumulative and it must include any periods of enrollment in which the student did not receive aid from the Federal Student Aid Programs. Students applying for aid or receiving aid are subject to the regulations. The Norwich University Financial Aid Satisfactory Academic Progress policy includes the following:

- Qualitative measure – the cumulative grade point average (GPA)
- Quantitative measure of progress – the percentage of degree required attempted credit hours which are completed and a maximum time frame in which a student is expected to complete their program.

The Satisfactory Academic Progress policy at Norwich University has been developed to ensure that the financial aid program at Norwich University adheres to the requirements set forth by federal aid regulations. An assessment of the student academic progress will be made after each term of enrollment.

Qualitative Measures – Required GPA

**Undergraduate programs** require the following grade point average to be considered in good standing, based on progression of credits earned by the student.

Number of Credits Earned Minimum Cumulative GPA

0-17 1.60

18-34 1.80

35+ 2.0

**Graduate program** students must achieve and maintain a 3.0 cumulative GPA requirement to remain eligible for Federal Student Aid Program funding. Students may be expected to achieve and maintain a higher GPA to be considered eligible for enrollment in their academic program and they are not eligible for financial aid funding if they are not meeting the GPA expectations for their program of study.

## Quantitative Measures

Student's quantitative measure of Satisfactory Progress is being monitored by the Financial Aid Office using the following guidelines:

- Students are eligible for financial aid for a maximum of twelve semesters of attendance, or 150% of the normal 4 year program of study.
- Students must complete at least 67% of the total number of courses that they attempt. This is based on cumulative attempted credits, not term-by-term attempted credits.
- Students must maintain the 67% "Pace of Progress" throughout enrollment so their academic outcome trajectory indicates they will complete their degree requirements prior to attempting 150% of the total credits needed for program degree requirements.
  - Students with Pace of Progress trajectories indicating it is no longer mathematically possible to complete their degree within this 150% timeframe requirement become ineligible financial aid regardless of GPA.
  - Example: For a program requiring 124 credits, the student must complete their program by the time they have attempted 186 credits. If a student in this program has completed only 80 credits of the first 150 attempted, they would no longer be eligible for aid because they have 44 required credits remaining (124 minus 80) but only 36 remaining credits of financial aid eligibility.

- EN005, MA005, "remedial courses", course withdrawals and incomplete courses are counted in the hours attempted and are counted towards the quantitative measure of Satisfactory Academic Progress policy.
- Because ROTC courses, that are not required for academic degree completion, are not qualified for Federal Student Aid Program funding; they are not included in the total number of attempted or completed credits for financial aid SAP reviews. These same ROTC classes are eligible for funding from Norwich University grants and scholarships.
- Course withdrawals and incompletes are not counted in the student's grade point average and are not counted in the qualitative measure of the Satisfactory Academic Progress policy.
- Transfer credits earned prior to the student's enrollment at Norwich will be used for quantitative purposes to determine the minimum required grade point average based upon hours earned.
- Transfer hours earned while a student is enrolled at Norwich will be counted in quantitative determination of satisfactory academic progress.
- An "Attempted Credit" is any credit on the transcript for a term of enrollment that is not dropped within the established drop time frame for the term of enrollment, even if the student withdraws before receiving a formal grade in the class.
- A "Completed Credit" indicates that the student attended the full term and received a grade other than "Incomplete". A Completed Credit can be either a pass or a fail grade.

## When Students Fall Below Standards

Students not meeting the qualitative or quantitative measurements receive information describing how their academic status impacts their eligibility for funding. Here are key terms related to our academic progress policy and procedures.

### Good Standing

To be considered in Good Standing for financial aid SAP, students must:

- Complete 67% or more of all attempted academic credits throughout enrollment
- Demonstrate a sufficient "Pace of Progress" toward their degree, meaning they are on track to receive their degree prior to attempting 150% of the total number of credits needed for the degree. Example: Students in an 80 credit program must complete the program with required GPA within a maximum of 120 attempted credits.
- Meet their program-specific cumulative GPA expectation.

### Warning

After the first semester below standard on either qualitative or quantitative measurements, the student receives a "Warning Letter". The purpose of this letter is to remind the student of Satisfactory Academic Progress requirements and to provide information about the campus-based resources available to help them succeed in the classroom. The student is not required to submit any documentation at this stage. Funds for the next term are disbursed at the standard times.

### Suspension

After the second consecutive semester below standard on either qualitative or quantitative measurements (does not have to be same reason for both occurrences), the student is notified that their financial aid eligibility is suspended. Suspensions are effective immediately. For example, if a student is suspended based on the review at the end of



Fall Semester, their financial aid for the next term of enrollment (typically Spring) will not be disbursed.

The Suspension Letter provides information to remind the student of the academic progress expectations. It also includes information related to the process for filing a Petition for Reinstatement if unusual circumstances have impacted the student's ability to succeed in class.

Students in suspended financial aid status are considered to be "self pay" students for any period of enrollment they attend prior to receiving approval of their Petition for Reinstatement.

## Petition for Reinstatement

Students placed into Financial Aid Suspension are encouraged to file a Petition for Reinstatement ([http://www.norwich.edu/admissions/wp-content/uploads/2013/12/SAP\\_Petition\\_for\\_Reinstatement.pdf](http://www.norwich.edu/admissions/wp-content/uploads/2013/12/SAP_Petition_for_Reinstatement.pdf)) as soon as possible after being notified of their status.

The Petition form directs the student to provide a signed statement indicating the reasons why they feel they are not meeting Good Standing expectations and what they have done to eliminate the barriers to success. The student must meet with their Academic Adviser or the Academic Achievement Center to discuss their academic support needs: an "adviser signature" is required on the form. The student must also obtain and provide a copy of an updated academic plan which describes the remaining required courses and other academic requirements for their degree.

If the student Petition is approved, the approval is effective immediately. This means that the student will be eligible for funding for the term during which the Petition is approved or for their next term of enrollment if they do not attend the very next term.

Not all Petitions are approved and our policy is to approve no more than two Petitions for any student throughout their enrollment. Students may not receive approvals for multiple Petitions which are based on the same rationale.

## Probationary Period

Students with approved Petitions receive financial aid on a probationary basis and are provided individual outcome requirements that must be met each term in order to remain eligible for aid until returning fully to Good Standing. Students who do not meet the Probationary Period expectations are re-suspended and may submit an additional Petition for Reinstatement. An example of an individual probationary expectation is that a student may be expected to complete all of their attempted credits and receive at least a 2.0 undergraduate, or 3.0 graduate, GPA for each semester they are enrolled until the student returns to "Good Standing" levels.

## Regaining Eligibility

In addition to Petition for Reinstatement reviews, students may request reinstatement of eligibility when they return fully to Good Standing based on attendance as a self-pay student at Norwich University.

Students demonstrating ability to meet Good Standing expectations through completion of courses taken at another school which are transferable to their Norwich University degree may also request a reinstatement review, even if the student has had two prior Petition approvals as allowed by the SAP policy. These students are encouraged to discuss their remaining eligibility with Student Financial Planning as it relates to maximum eligibility (150% of program) concepts.

## Housing

At Norwich, there are three residential housing areas, the Upper Parade, Crawford Hall, and South Hall. Upper Parade has eight residence halls and cadet barracks built around the parade ground, where the fall and spring parades and ceremonies take place. Crawford Hall, a short walk from the Upper Parade, houses residential civilian students. South Hall is the newest residence hall and also houses residential civilian students. Norwich currently has approximately 1600 residential beds on campus. All Corps of Cadets and most freshman and sophomore civilian students reside on campus as well as some of our upper-class civilian students.

## Information Technology

The Norwich University Information Technology department supports all academic and administrative computing and telecommunications. Information Technology is comprised of the Computer Services Department, the Telecommunications Department, the Center for Academic Technology, and the Information Operations Development Center.

Computer Services operates a Help desk located at 115 Partridge Hall and a Help desk phone line/email. The Help desk offers computing help, network services, e-mail accounts, and training to students, faculty and the administration of the university. Computer Services provides a robust network computer environment including student computer labs, the campus network, help desk services, and administrative computing.

Student computing labs are located in Partridge Hall, Tompkins Hall, Kreitzberg Library, Dewey Hall, Webb Hall, and Chaplin Hall. The student computer labs are configured with common software and interface as well as network authentication, which allows students to accomplish academic computing tasks at any lab on campus.

Students receive network and electronic mail accounts for academic use. The Telecommunications Department provides telephone services for students, faculty, and staff. Student residence halls are equipped with live phone jacks in each room. Students may activate phone accounts for long distance service via Student Telephone Services, which provides billing and collection services.

The Center for Academic Technology, CAT, supports faculty integration of technology into the curriculum. CAT provides training for faculty and other development opportunities. Student intern and work study resources support traditional staff in these efforts.

## Library (Kreitzberg) & University Archives

The Kreitzberg Library (<http://academics.norwich.edu/library>) is committed to providing the best possible facilities, services and resources to meet the expanding needs of Norwich University students and faculty. The Kreitzberg Library building, named for principal donors Barbara and Fred Kreitzberg ('57), offers six comfortable and attractive floors for collections, research and study. There are spaces for individual and group study, computer labs with access to the Norwich University network, an electronic classroom, wireless internet throughout the building, photocopiers, scanners, and media equipment. The fifth floor is the home of the Norwich University Archives and Special Collections.

The Library's growing collections now comprise approximately 137,000 books; over 45,000 print and online journals; and much more, including DVDs and streaming videos. Professional librarians and support staff offer the full range of academic library services, including reference

service, interlibrary loan, and individual and group library instruction. The Kreitzberg Library's catalog, databases and online journals are accessible both on- and off-campus, providing easy access for students in their dormitories or across the world. During the academic term, the library is open until midnight five days a week, and reference librarians are available in person or via email every day.

Norwich University Archives and Special Collections (<http://library2.norwich.edu/catablog>) and Special Collections on the 5<sup>th</sup> floor of the Kreitzberg Library preserves and provides access to the written and still photographic records of the University as well as the Library's rare book collection. The Archives offers access to unique primary-source material relating to the University, its staff, students and alumni, including both personal papers and institutional records.

The Library building also houses the Academic Achievement Center and the Counseling Center on the fourth floor.

## Sullivan Museum & History Center

A museum has been located on the Norwich University campus since 1902. The first museum was located in Dewey Hall and moved to the Carnegie Library (the present day Chaplin Hall) in 1908. In 1955, the museum moved to the basement of White Chapel. In October 2005, groundbreaking was held for the museum's new, permanent home next to the Kreitzberg Library. The Sullivan Museum and History Center officially opened in January 2007.

The Sullivan Museum and History Center, a 16,000 square foot building designed for both permanent and rotating displays, contains a theater, a resource center, exhibit preparation and conservation areas, offices, and a classroom. This modern facility is dedicated to the telling of the Norwich University story and the careful preservation of the University's rich history.

## Religious Services

Norwich is non-sectarian. However, believing that acquisition of and/or affirmation of one's own personal spiritual convictions is an essential part of each individual's character development and education, the University provides religious services in White Chapel throughout the year. Two Catholic masses and at least one Protestant worship service are conducted weekly. Two part-time Catholic Fathers and one full-time Protestant Chaplain minister to the Northfield campus. An Islamic prayer group meets each Friday, and Jewish students avail themselves of the local synagogue in nearby Montpelier.

Local houses of worship for different faiths and denominations, including addresses, phone numbers, and identification of spiritual leaders, is listed on the bulletin board outside the Chaplain's Office. Many religious groups offer free transportation to our students for attendance at services. After the initial week of training, recruits may leave campus to attend such religious services.

Further information can be obtained by contacting the Chaplain's Office:

- Telephone: 802.272.0585
- Email: [wwick@norwich.edu](mailto:wwick@norwich.edu) ([chaplain@norwich.edu](mailto:chaplain@norwich.edu))

## Majors/Minors/Concentrations

### Major

The field of academic specialization within the baccalaureate degree. It is defined as the departmental requirements set forth in the catalog, having a minimum of 10 courses totaling at least 30 credit hours, of which

a minimum of two must be at the 300-400 level. Interdisciplinary majors may include courses from more than one related academic discipline.

### Second Major

To declare a second major, students submit a signed Major/Minor Declaration form (<http://www.norwich.edu/registrar/wp-content/uploads/sites/3/2014/02/declareMajorMinor.pdf>) to the Registrar's Office. The form requires the approval of the current adviser, and Department Chair/Director of the second major as well as the second adviser assigned by the Department Chair/School Director of the second major. The student will follow the catalog year of the primary major.

### Minor

Consists of six courses of three or more credits as specified in the catalog. No more than two of the six courses may be transfer courses (from another institution). Minors may include courses from more than one related discipline. The six courses for the minor must be completed with a grade of C or higher. A student may not earn both a minor and a major in the same field of specialization.

To declare a minor, students submit a signed Major/Minor Declaration form to the Registrar's Office. The form requires the approval of the student's adviser, the Department Chair/School Director of the academic department that offers the minor. Minor requirements will follow the catalog year of the student's primary major. Minors can not be added after a Bachelor's Degree is awarded.

### Concentration

Consists of six courses of three or more credits in a "specialized area" within a major, as specified by an academic department. It may consist of a selection of courses or an established minor in a specialized area within the major; approved by the department. Concentrations may include courses from more than one related academic discipline. No more than two of the six courses may be transfer courses (from another institution). The six courses for the concentration must be completed with a grade of C or higher. Concentrations are available only to students enrolled in the major under which the concentration is listed.

To declare a concentration, students submit a signed Major/Minor Declaration form to the Registrar's Office. The form requires the approval of the student's adviser, the Department Chair/School Director of the academic department that offers the concentration. Concentration requirements will follow the catalog year of the student's primary major. Concentrations will not be awarded after a Bachelor's Degree is awarded.

### Choice of Major

- Students, who enter Norwich as an undeclared BA or BS student, must select a major by the time of registration for the 5th semester.
- Students must meet minimal major course and grade requirements, as determined by the Department Chair/School Director, to be accepted into the desired major.

### Change of Major

To change a major requires students to submit a signed Major/Minor Declaration form to the Registrar's Office. The form requires the approval of the Department Head or School Director, the assignment of the new adviser and the old adviser and include the catalog year that the student will follow.

### Dismissal From a Major or Minor

School Directors and Department Heads have the authority to dismiss a student from a major or minor for academic deficiency or unsatisfactory

performance in a clinical program or an internship, practicum or program. Copies of dismissal letters must be sent to the Registrar's Office.

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- Actuarial Mathematics Concentration--Mathematics Major (p. 91)
- Advanced Information Security Concentration--Computer Security & Information Assurance Major (p. 58)
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- Athletic Training Major (p. 43)
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- Biochemistry Major
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- Environmental Science Majors (p. 71)
  - Environmental Biology Concentration--Environmental Science Major
  - Environmental Chemistry Concentration--Environmental Science Major
  - Climate Change
  - Environmental Engineering Concentration--Environmental Science Major
  - Environmental Geology Concentration--Environmental Science Major
  - Green Design
  - Environmental Law & Protection Concentration--Environmental Science Major
  - Environmental Policy & Management Concentration--Environmental Science Major
  - Environmental Writing Concentration--Environmental Science Major
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- Geology Major (p. 78)
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- Information Warfare Concentration--Computer Security & Information Assurance Major (p. 58)
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- Computer Information Systems (p. 55)
- Criminal Justice (p. 63)
- Economics (p. 63)
- Elementary Education (p. 66)
- Engineering Management (p. 61)
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## Accounting

Charles A. Dana Professor Puddicombe; Associate Professor Yandow; Assistant Professor Chung, Adjunct Lecturer Merolli.

The accounting program focuses on the process of analyzing, recording, communicating, and interpreting financial information about economic entities for the purpose of external and internal reporting and decision making. Our students will integrate knowledge from other disciplines within the school: management, economics and computer information systems, to enter into organizations with both a functional and enterprise perspective.

Accountants seeking to become CPAs are employed in public accounting (CPA firms) as auditors, tax preparers and planners, and management consultants. Those seeking the CMA designation are employed in private accounting (industry) on the controller's or treasurer's staff as financial accountants, management accountants, cost accountants, tax accountants, budget analyst, etc. Those seeking the CIA (Certified Internal Auditor) are employed in industry as internal auditors or EDP auditors.

Careers in government accounting include employment by the Internal Revenue Service, Government Accountability Office (the audit arm of the federal government), FBI, CIA, Securities and Exchange Commission, and industry-specific regulatory agencies such as the FTC, ICC, FPC, and CAB. Of course, state and local government units also need accountants to record and report on their activities. Non-profit accounting includes accounting positions in schools, hospitals, churches, and philanthropic, fraternal, and professional organizations as well as teaching accounting at the high school or college level.

### B.S. Accounting - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
MG 101 Introduction to Business <sup>1</sup>	3	EC 106 The Structure and Operation of the World Economy <sup>1</sup>	3
IS 120 Business Applications & Problem Solving Techniques	3	EN 112 Public Speaking	3
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA 107 Precalculus Mathematics <sup>2</sup>	4	MA 108 Applied Calculus	4
		General Education-Lab Science Elective 1	4
	<b>13</b>		<b>17</b>
Second Year			
Fall	Credits	Spring	Credits
EC 202 Principles of Economics (Micro) <sup>3</sup>	3	EC 201 Principles of Economics (Macro) <sup>3</sup>	3
General Education-Lab Science Elective 2	4	MG 309 Management of Organizations	3
AC 205 Principles of Accounting-Financial <sup>3</sup>	4	QM 213 Business and Economic Statistics I	3
General Education-History Elective	3	AC 206 Principles of Accounting-Managerial <sup>3</sup>	4
MA 212 Finite Mathematics	3	EN 204 Professional and Technical Writing	3
	<b>17</b>		<b>16</b>



Third Year			
Fall	Credits	Spring	Credits
AC 335 Intermediate Accounting I	3	EC 310 Money and Banking	3
MG 310 Production/Operations Management	3	AC 336 Intermediate Accounting II	3
IS 300 Management Information Systems	3	AC 441 Cost Accounting	3
MG 314 Marketing Management	3	General Education-Humanities Elective	3
FN 311 Corporate Finance	3	PH 322 Business Ethics	3
	<b>15</b>		<b>15</b>
Fourth Year			
Fall	Credits	Spring	Credits
AC 442 Advanced Accounting	4	AC 428 Auditing	3
MG 341 Business Law I	3	MG 346 Business Law II	3
General Education-Literature Elective	3	MG 449 Administrative Policy and Strategy	3
Elective Course	3	AC 419 Taxation I	3
MG 319 International Dimensions of Business	3	Elective Course	3
	<b>16</b>		<b>15</b>
Total Credits: 124			

- Must be taken first year. Upper level students without credit for these courses will substitute with an Elective Course from a School of Business & Management subject area. This must be done via a petition.
- MA 107 must be completed prior to the Fall of Sophomore Year.** Failure to do so will lead to a lengthening of the time to complete the program. If MA 103 is required by Placement Test results, a grade of C or higher is required in MA 103 prior to taking MA 107. If required MA 103 will be counted as one of the Elective Courses.
- AC 205, AC 206, EC 201, EC 202 require a grade of C or higher.

## Accounting Minor

Students seeking a minor in Accounting must obtain the approval of the School Director and must complete all of the six courses listed below, each with a grade of C or higher.

AC 205	Principles of Accounting-Financial	4
AC 206	Principles of Accounting-Managerial	4
AC 335	Intermediate Accounting I	3
AC 336	Intermediate Accounting II	3
<b>Any two of the following courses (but not both MG 341 and FN 311):</b>		<b>6-7</b>
MG 341	Business Law I	3
AC 419	Taxation I	3
AC 428	Auditing	3
AC 441	Cost Accounting	3
AC 442	Advanced Accounting	4
FN 311	Corporate Finance	3
Total Credits		20-21

## Architectural Studies (undergraduate)

Charles A. Dana Professor Woolf; Professor Temkin; Associate Professors Cox, Hoffman, Lutz, Sagan, and Schaller; Assistant Professors D'Aponte, Parker, and Stonorov, Lecturer Armstrong; Adjunct Instructors Arnold, Dworsky, Facciolo, Gossens, Keller, Kredell, and Wolfstein

With fewer than 200 students, the School of Architecture + Art is one of the smallest programs of its kind in the country, fostering a natural and effective mentoring relationship between faculty and students. Courses take a balanced approach to both the art and science of architecture and we embrace environmental sustainability as part of Vermont's ethos, offering opportunities for experiential learning and reflection. The School explores in many dimensions the meaning of making and the making of meaning to reinforce the student's ability to think creatively and independently and become

educated and motivated to be leaders in service to the community while reflecting the University's ideals to develop citizens with integrity, conviction, and self-respect.

The school offers the following architecture degrees:

- A four-year bachelor's degree (<http://profschools.norwich.edu/architectureart/architecture/bachelor-of-architecture>) in Architectural Studies
- A one-and-a-half-year Master of Architecture (<http://profschools.norwich.edu/architectureart/architecture/master-of-architecture>) degree
- A minor in Architectural Studies (<http://profschools.norwich.edu/architectureart/architecture/minor-in-architectural-studies>)

Combined, the bachelor and master programs form a five-year professional degree accredited by the National Architectural Accrediting Board (NAAB), a prerequisite for licensure in most states. View a description of the current path to licensure (<http://profschools.norwich.edu/architectureart/architecture/path-to-licensure>).

See examples of student work (<http://profschools.norwich.edu/architectureart/architecture/student-work>).

See an outline of our current curriculum (<http://profschools.norwich.edu/architectureart/architecture/curriculum>) or contact our Program Director (<http://profschools.norwich.edu/architectureart/architecture/contact-us>), Danny Sagan.

A Bachelor's Degree in Architectural Studies is a student's introduction to the profession, where they learn vital technical, artistic, and communication skills.

Architectural Studies offers both a semester-long and academic year-long study-abroad opportunity in Berlin, Germany.

In our unique Design: Build architecture studios, students collaboratively design, plan and build a structure, which have included a town library, a house for Habitat for Humanity, an outdoor high-school classroom, a mobile energy research laboratory, and a solar house.

A bachelor's degree offers students the chance to pursue a minor in other fields, including studio art, construction management, business, and art history.

## B.S. in Architectural Studies - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
AP 111 Fundamentals of Architecture	4	AP 118 Fundamentals of Architecture II	4
MA 107 Precalculus Mathematics	4	MA 108 Applied Calculus	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
HI 107 The History of Civilization I	3	HI 108 The History of Civilization II	3
SA 103 Introduction to Drawing	3	SA 104 Introduction to Visual Design	3
	<b>17</b>		<b>17</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
AP 211 Architectural Design I	5	AP 212 Architectural Design II	5
FA 201 History/Theory of Architecture I	3	AP 325 Materials, Construction, and Design	3
AP 225 Introduction to Passive Environmental Systems	3	FA 202 History/Theory of Architecture II	3
PS 201 General Physics I	4	Lab Science	4
General Education Elective	3	General Education Elective	3
	<b>18</b>		<b>18</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
AP 311 Architectural Design III	5	AP 312 Architectural Design IV	5
AP 221 Site Development and Design	3	AP 222 Human Issues in Design	3
AP 327 Active Building Systems I	3	AP 328 Active Building Systems II	3
CE 351 Statics and Mechanics of Materials	4	CE 457 Wood, Steel, and Concrete Structures	4
FA 308 History/Theory of Architectural III	3	FA 309 History/Theory of Architectural IV	3
	<b>18</b>		<b>18</b>

<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
AP 411 Architectural Design V	5	AP 412 Architectural Design VI	5
Free Elective	3	AP 436 Project Delivery and Documentation	4
Architecture Elective Architecture Elective (May substitute required course for a minor for 4th year AP Elective.)	3	Free Elective	3
Free Elective	3	Architecture Elective (May substitute required course for a minor for 4th year AP Elective.)	3
Free Elective	3	Free Elective	3
	<b>17</b>		<b>18</b>
Total Credits: 141			

## Architectural Studies Minor

Norwich offers a minor degree in Architectural Studies for students in other majors who are interested in studying the use and design of space for human work and habitation.

A minor in Architectural Studies requires 18 credit hours, involving four designated courses and at least three others, all completed with a grade of "C" or better. Enrollment into courses is subject to availability of space.

AP 111	Fundamentals of Architecture	4
AP 118	Fundamentals of Architecture II	4
FA 201	History/Theory of Architecture I	3
FA 202	History/Theory of Architecture II	3
Architectural Elective		3
Architectural Elective		3
Architectural Elective		2

## Architecture (graduate)

To offer many opportunities for experiential learning and reflection. The School explores in many dimensions the meaning of making and the making of meaning. The School reinforces the student's ability to think creatively and independently, and reflects the University's ideals to develop citizens with integrity, conviction, and self-respect; educated and motivated to be leaders in service to the community. The School of Architecture and Art offers a Bachelor of Science in Architectural Studies, and a Master of Architecture (NAAB-accredited). Minors are also offered in Architecture and Art.

### Mission

To build on the experience of the Bachelor's curriculum, the Master's prepares the student for the profession of architecture. The School emphasizes practical experience (through a practicum) as well as autonomy and rigor (through an architectural thesis and graduate seminars).

## Master of Architecture - Curriculum Map

<b>Summer</b>		6
AP 531	Architectural Internship	6
<b>Fall</b>		14
AP 525	Architectural Thesis Research	5
AP 5XX Architecture Elective		3
AP 5XX Architecture Elective		3
AP 558	Global Issues in Architecture	3
<b>Spring</b>		14
AP 526	Architectural Thesis	5
AP 533	Professional Practice	3
AP 5XX Architecture Elective		3
AP 5XX Architecture Elective		3
Total Credits		34

Students must maintain a 3.0 average GPA in the Masters program.

## Art

Associate Professor Galligan-Baldwin; Adjunct Instructors Arnold, Hoag, Kippen, Leytham, and Talbot-Kelly.

The Studio Art (SA) curriculum affords all students the opportunity to cultivate and extend their understanding and appreciation of art, and in the process, to assess the meaning and significance of the arts to their own lives. The studio arts offer a profound testimony to meaning and significance of the arts to their own and function in a variety of ways: they illuminate the ideas, values, beliefs, manners, and customs of an age; they inform us of how artists interpret and understand the visible world in which they live; they alert us to moral and ethical perspectives which condition the artist's choice and treatment of subject matter.

All Studio Art (SA) courses may be used towards fulfilling the General Education Humanities requirements.

### Art Minor

Norwich students in all disciplines have the opportunity to broaden their college experience by earning a minor degree in art. The School of Architecture + Art offers two minors. A Studio Art Minor helps students develop their own creative skills and understanding of art in the studio.

SA courses with at least one course at the 200/300 level	12
FA courses	6
Must choose FA 222 or FA 260 (for 3 of the 6 credits)	
<b>Total Credits</b>	<b>18</b>

## Art History

Norwich students in all disciplines have the opportunity to broaden their college experience by earning a minor degree in art. The School of Architecture + Art offers two minors. A Studio Art Minor helps students develop their own creative skills and understanding of art in the studio. An Art History Minor helps students explore why and what the artist creates and how it addresses the changing nature and function of art, probe the relationship of the artist to society, and examine the varied systems of beliefs and values that affect the discipline.

A minor in art history consists of successfully completing at least 18 credits with a grade of C or higher. Of these, 15 credits must be in FA courses and three credits must be in a SA course.

The art curriculum affords all students the opportunity to cultivate and extend their understanding and appreciation of art, and in the process, to assess the meaning and significance of the arts to their own lives. The fine arts offer a profound testimony to meaning and significance of the arts to their own and function in a variety of ways: they illuminate the ideas, values, beliefs, manners, and customs of an age; they inform us of how artists interpret and understand the visible world in which they live; they alert us to moral and ethical perspectives which condition the artist's choice and treatment of the subject matter.

Courses in the Fine Arts (FA) explore the history of art, why and what the artist creates assess the changing nature and functions of art, probe the relationship of the artist to society, and examine the varied systems of beliefs and values which affect the shaping form. All Fine Arts (FA) courses may be used towards fulfilling humanities requirements.

### Art History Minor

Select one of the following two courses:

FA 201	History/Theory of Architecture I	3
or FA 221	History of Visual Arts I: Prehistoric to 1350	
FA 222	History of Visual Arts II: 1350 to the Modern Era	3
Six credits must be in FA 250. <sup>1</sup>		6
Three credits must be in a SA course <sup>2</sup>		3
Three credits must be in another FA course <sup>3</sup>		3
<b>Total Credits</b>		<b>18</b>

<sup>1</sup> FA 250 may be taken more than once, however the title and subject matter of the seminars must be different.

<sup>2</sup> Preferably SA 103 Introduction to Drawing or SA 104 Introduction to Visual Design.

<sup>3</sup> FA 201 and FA 221 may not both be taken for credit as there is significant overlap in the material covered in the two courses).



## Athletic Training

Program Director James Murdock, ATC ; Clinical Coordinator Jennie Kruger, ATC; Gregory Jancaitis, ATC; Associate Professor Eduardo Hernandez, ATC (Sports Medicine Chair)

The Bachelor of Science in Athletic Training uses a competency-based approach in both the classroom and clinical settings. Using a medical education model, athletic training students gain experience in a variety of educational domains to prepare them to serve as allied health care providers for the physically active population. Certified Athletic Trainers have specialized education in the prevention, evaluation, diagnosis, and treatment of injuries and illness affecting physically active populations. Educational content is based on cognitive (knowledge), psycho-motor (skills), and clinical proficiencies (professional, practice-oriented outcomes). The Athletic Training Education Program (ATEP) incorporates hands-on experience in various professional settings. The Athletic Training Education Program (NU-ATEP) is accredited by the Commission on the Accreditation of Athletic Training Education (CAATE). Graduates are eligible to sit for the National Athletic Trainers' Association (NATA) Board of Certification (BOC) examination.

### Entrance Requirements

Students may decide to pursue the Athletic Training coursework during the fall semester of their freshman year, but they must apply for entrance into the professional phase of the Athletic Training Education Program (ATEP) during the spring semester of their freshmen year. By that time, they must have completed, or be enrolled, in the following courses and earn a minimum grade of C:

SM 136	Emergency Care, Injury/Illness	3
SM 138	Introduction to Sports Medicine	3
SM 220	Care and Prevention of Athletic Injuries	4
SM 128	Clinical Anatomy I	3
SM 129	Clinical Anatomy II	3

Students not meeting the minimum criteria will need to correct any deficiencies before being considered for entrance into the professional phase of the Athletic Training Education Program (ATEP). Athletic Training students (ATS) must adhere to Norwich University policies and procedures, as well as the policies and procedures of the Athletic Training Education Program and of clinical sites.

### B.S. in Athletic Training - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
MA 232 Elementary Statistics	3	EN 102 Composition and Literature II	3
SM 136 Emergency Care, Injury/Illness	3	PY 211 Introduction to Psychology	3
SM 138 Introduction to Sports Medicine	3	SM 139 Health Science Research Methods	2
SM 128 Clinical Anatomy I	3	SM 220 Care and Prevention of Athletic Injuries	4
EN 101 Composition and Literature I	3	SM 129 Clinical Anatomy II	3
	<b>15</b>		<b>15</b>
Second Year			
Fall	Credits	Spring	Credits
SM 212 Health Promotion	3	SM 232 Lower Extremity Injuries	3
SM 228 Clinical Physiology I	4	SM 229 Clinical Physiology II	4
SM 230 Fundamentals of Evidence-Based Practice	2	SM 201 Clinical Education in Athletic Training II	2
SM 231 Management of Spine and Pelvic Conditions	3	PE 260 Personal and Community Health	3
SM 200 Clinical Education in Athletic Training I	1	CH 101 Introduction to General Chemistry	4
MA 235 Clinical Mathematical Methods	3		
	<b>16</b>		<b>16</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
SM 420 Therapeutic Modalities	4	PE 371 Physiology of Exercise	4
SM 300 Clinical Education in Athletic Training III	4	SM 422 Therapeutic Exercise	4
SM 233 Upper Extremity Injuries	3	BI 253 Foods and Nutrition	4
CH 102 Introduction to Organic and Biochemistry	4	SM 301 Clinical Education in Athletic Training IV	4
	<b>15</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
SM 439 Leadership & Management in Sports Medicine	3	SM 401 Clinical Education in Athletic Training VI	4
SM 400 Clinical Education in Athletic Training V	4	SM 451 Capstone Experience II	1
History Elective	3	Humanities Elective	3
Literature Elective	3	Free Elective	3-4
Free Elective	3-4	SM 460 Emerging Practice Skills	3
SM 450 Capstone Experience I	1		
	<b>17-18</b>		<b>14-15</b>
Total Credits: 124-126			

## Biology

Professors William Barnard and Lauren Howard; Associate Professors Scott Page (Chair), Karen Hinkle and Elizabeth Wuorinen; Assistant Professors Megan Doczi and Harry Christman; Lecturer Virginia Kunkel.

### Curricula

Biology and Physical Education curricula offer students the opportunity to study the structure and function of living systems, from the complexity of cellular components to whole organism dynamics to ecosystem design.

### Bachelor of Science in Biology

The Bachelor of Science in Biology prepares students for admission into graduate, medical, optometry, dentistry, and veterinary medical schools, as well as for immediate employment in the areas of environmental science, biotechnology, and teaching. Recent graduates are engaged in all of these areas. A core curriculum of science, mathematics and English courses ensures development of appropriate analytical and communication skills. Rounding out the major, seven free biology electives and 10 totally free electives allow students to mold their programs to meet specific career goals and develop one or more minors and/or double majors. A special Pre-medical Committee oversees our Pre-medical/Pre-dental track and assists in the placement of our graduates. Students who major in Biology may also elect a concentration in Neuroscience (p. 97).

Biology is the scientific discipline that investigates life in all of its forms. An appreciation of the complexity of structure and function requires the use of a variety of teaching tools, including the use of living and preserved organisms. Consequently, both living and preserved organisms will be ethically and humanely employed whenever appropriate to further student understanding and appreciation for life.

### B. S. in Biology – Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI 101 Principles of Biology I	4	BI 102 Principles of Biology II	4
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
MA 107 Precalculus Mathematics	4	MA 108 Applied Calculus or 232 Elementary Statistics	3-4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
	<b>15</b>		<b>14-15</b>

<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI 202 Genetics	4	CH 226 Organic Chemistry II	4
CH 225 Organic Chemistry I	4	EN 202 World Literature II	3
EN 201 World Literature I	3	BI 306 Cell Biology	4
BI 203 Introduction to Scientific Method & Bioscientific Terminology	1	Free Elective	3
Free Elective	3		
	<b>15</b>		<b>14</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI Elective	4	BI Elective	4
PS 201 General Physics I	4	PS 202 General Physics II	4
History Elective <sup>1</sup>	3	Humanities Elective <sup>2</sup>	3
Free Elective	3	Ethics (PH 303, PH 323, PH 350)	3
Free Elective	3	Free Elective	3
	<b>17</b>		<b>17</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI Elective	4	BI Elective	4
BI 401 Senior Seminar	3	Social Science Elective <sup>3</sup>	3
Free Elective	3	Free Elective	3
BI 405 Ecology	4	BI 402 Evolution	4
	<b>14</b>		<b>14</b>
Total Credits: 120-121			

<sup>1</sup> History Elective = any History Department course (HI) except HI 209.

<sup>2</sup> Humanities Elective = EN (above EN 206, excluding EN240 - EN 242); FA, MU 101; CM 109, CM 261, CM 335, CM 436: Modern Language (above 112); or PH.

<sup>3</sup> Social Science Elective = any PY, SO, EC or PO course.

## Biology Minor

Must earn a C or higher in all courses.

BI 101	Principles of Biology I	4
BI 102	Principles of Biology II	4
4 additional BI 200+ courses (of three or four credits), three of which must be 4-credit laboratory courses <sup>1</sup>		12-16
Total Credits		20-24

<sup>1</sup> PE 365, PE 371, or CH 324 may be used as a substitute for one BI 200+ course toward the minor.

## Business Administration

Charles A. Dana Professor Puddicombe; Professors Kabay and Mohaghegh; Associate Professors Benabess, Blythe, Jolley, Stephenson, and Yandow; Assistant Professors Chung, Hansen; Lecturers Almagambetov, Bovee, and Pomeroy; Adjunct Instructors Alcorn, Faulkner, Fogg, Merolli, Rowley, Seipel, and Verret.

Students with any major except Accounting or Management may elect to pursue a minor in Business Administration. Students seeking a minor in Business Administration must obtain the approval of the School Director and complete each of the required courses with a grade of C or higher.

### Business Administration Minor

Students must complete all of the six courses listed below, each with a grade of C or higher.

AC 205	Principles of Accounting-Financial	4
EC 201	Principles of Economics (Macro)	3
EC 202	Principles of Economics (Micro)	3
MG 309	Management of Organizations	3
MG 314	Marketing Management	3
<b>Choose one of the following courses:</b>		<b>3-4</b>
AC 206	Principles of Accounting-Managerial	4
EC 106	The Structure and Operation of the World Economy	3
FN 311	Corporate Finance	3
IS 121	Introduction to Computer Programming	3
MG 101	Introduction to Business	3
MG 319	International Dimensions of Business	3
MG 351	Organizational Behavior	3
MG 408	Human Resources Management	3
Total Credits		19-20

## Chemistry & Biochemistry

Shinquin Programs of Chemistry and Biochemistry

Professors J. Byrne, Hoppe (Chair) and McGinnis; Associate Professors Rizzolo, Blank, and Frisbie; Assistant Professor Guth; Lecturers Milius, Hoeltge, and Rutkowski.

The Bachelor of Science in Chemistry and the Bachelor of Science in Biochemistry offer thorough and hands on laboratory oriented curricula. Our graduates are highly desired by industry and government employers for their laboratory skills, as well as being well qualified for admission to graduate and professional schools. The courses and labs required for these degrees assure that graduates are proficient in the fundamental principles of chemistry and prepared to apply these principles to specialized areas such as environmental, forensic, medicinal, and pharmaceutical chemistry.

Attainment of the Bachelor of Science in Chemistry requires at least 122 credits as does the Bachelor of Science in Biochemistry. Course work should conform to the following tables since many advanced chemistry courses have other courses as prerequisites. All courses listed in the tables are required, although the sequence varies somewhat for courses offered in alternate years. It is difficult for chemistry and biochemistry majors to schedule the required courses unless they follow the outline recommended here and pay special attention to the alternate year courses (designated with the symbol §).

The progress of all students majoring in chemistry and biochemistry will be evaluated by the department at the end of the first and second years. Students receiving an unsatisfactory evaluation will be requested to change majors.

In addition to offering a rigorous, quality curriculum in chemistry and biochemistry, the faculty is committed to providing quality instruction in our introductory courses. All of our 100 level courses are consistent with the General Education Goals of the university. These courses provide the student with an introduction to the scientific method, the correct and effective representation of data, and develop the students' critical thinking skills by allowing the analysis and interpretation of experimental data.

*Chemistry courses taken for 3 credits, without a laboratory, will only satisfy free elective or chemistry minor requirements. Chemistry and biochemistry majors must enroll in the 4 credit option of each course required by their major.*



## B.S. in Chemistry - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA 121 Calculus I	4	MA 122 Calculus II	4
Elective	3	Intro. Computer Science <sup>1</sup>	3
	<b>14</b>		<b>14</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 225 Organic Chemistry I or 327 Physical Chemistry I <i>and</i> 337 Physical Chemistry Laboratory I <sup>§</sup>	4	CH 226 Organic Chemistry II or 328 Physical Chemistry II <i>and</i> 338 Physical Chemistry Laboratory II <sup>§</sup>	4
PS 211 University Physics I	4	PS 212 University Physics II	4
EN 201 World Literature I <sup>2</sup>	3	EN 202 World Literature II <sup>2</sup>	3
HI Elective (except HI 209)	3	MA 224 Differential Equations	4
CH 214 Communication in Chemistry (or in 3rd year) <sup>§</sup>	1-0	CH 204 Quantitative Analysis (or Elective) <sup>§</sup>	4-3
	<b>15-14</b>		<b>19-18</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 225 Organic Chemistry I or 327 Physical Chemistry I <i>and</i> 337 Physical Chemistry Laboratory I <sup>§</sup>	4	CH 226 Organic Chemistry II or 328 Physical Chemistry II <i>and</i> 338 Physical Chemistry Laboratory II <sup>§</sup>	4
CH 438 Advanced Inorganic Chemistry (or SC/MA Elective) <sup>3, §</sup>	4-3	CH 204 Quantitative Analysis or 314 Instrumental Methods <i>and</i> 315 Analysis Laboratory <sup>§</sup>	4
PS 205 Basic Instrumentation in the Natural Sciences (or Elective) <sup>§</sup>	4-3	CH 324 Biochemistry I (or SC/MA Elective) <sup>3, §</sup>	4-3
Elective	3	Arts or Humanities Elective <sup>4</sup>	3
CH 214 Communication in Chemistry (or in 2nd year) <sup>§</sup>	0-1	Elective	3
	<b>15-14</b>		<b>18-17</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 421 Chemical Synthesis and Examination I	3	CH 422 Chemical Synthesis and Examination II	3
CH 438 Advanced Inorganic Chemistry (or SC/MA Elective) <sup>3, §</sup>	3-4	CH 314 & CH 315 (or Elective)	3-4
PS 205 Basic Instrumentation in the Natural Sciences (or Elective) <sup>§</sup>	3-4	CH 324 Biochemistry I (or SC/MA Elective) <sup>3, §</sup>	3-4
CH 413 Chemistry Seminar	1	PH Elective in Ethics <sup>6</sup>	3
SS Elective <sup>5</sup>	3	Elective	3
	<b>13-15</b>		<b>15-17</b>
Total Credits: 123			

<sup>1</sup> MA 241 **OR** IS 121 **OR** EG 112 **OR** EG 110

<sup>2</sup> EN 112 or EN 204 may be substituted for one semester of EN 201 - EN 202.

<sup>3</sup> Recommended SC/MA courses: CH 439; MA 223 or MA 310; PS 232, PS 354

<sup>4</sup> An Arts or Humanities course. Use the Arts and Humanities list for this requirement.

<sup>5</sup> Social Science Elective; may enroll in any course in Sociology, Economics, Psychology or Political Science.

<sup>6</sup> A Philosophy (PH) course in ethics. Use the General Education Ethics list for one of the ethics requirements.

§ This course is offered in alternate years. Both courses listed are required. For the years these courses are offered, see Course Descriptions.

## B.S. in Biochemistry - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA 107 Precalculus Mathematics	4	MA 121 Calculus I	4
BI 101 Principles of Biology I	4	BI 102 Principles of Biology II	4
	<b>15</b>		<b>15</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 225 Organic Chemistry I	4	CH 226 Organic Chemistry II	4
PS 201 General Physics I <sup>1</sup>	4	PS 202 General Physics II <sup>1</sup>	4
EN 201 World Literature I <sup>2</sup>	3	CH 324 Biochemistry I or 204 Quantitative Analysis <sup>§</sup>	4
BI 202 Genetics	4	MA 122 Calculus II	4
CH 214 Communication in Chemistry (or in 3rd year) <sup>§</sup>	1-0		
	<b>16-15</b>		<b>16</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 327 Physical Chemistry I (or Elective) <sup>§</sup>	4-3	CH 328 Physical Chemistry II or 324 Biochemistry I <sup>§</sup>	3-4
CH 325 Biochemistry II (or Elective) <sup>§</sup>	4-3	CH 204 Quantitative Analysis or 314 Instrumental Methods <b>and</b> 315 Analysis Laboratory <sup>§</sup>	4
BI 306 Cell Biology (or HI Elective (except HI 209)) <sup>§</sup>	4-3	EN 202 World Literature II <sup>2</sup>	3
SS Elective <sup>3</sup>	3	BI 304 Physiology (or Elective) <sup>5, §</sup>	4-3
PH Elective in Ethics <sup>4</sup>		Elective or in 4th year	3-0
CH 214 Communication in Chemistry (or in 2nd year) <sup>§</sup>	0-1		
	<b>15-13</b>		<b>17-14</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 327 Physical Chemistry I (or Elective) <sup>§</sup>	3-4	CH 328 Physical Chemistry II (or Elective) <sup>§</sup>	3
CH 325 Biochemistry II (or Elective) <sup>§</sup>	3-4	CH 314 & CH 315 (or Elective) <sup>§</sup>	4-3
BI 306 Cell Biology (or HI Elective (except HI 209)) <sup>§</sup>	3-4	BI 304 Physiology (or Elective) <sup>§</sup>	3-4
CH 413 Chemistry Seminar <sup>§</sup>	1	CH 422 Chemical Synthesis and Examination II	3
Arts or Humanities Elective <sup>6</sup>	3	Elective or in 3rd year	0-3
	<b>13-16</b>		<b>13-16</b>
Total Credits: 120			

- § This course is offered in alternate years. Both courses listed are required. For the years these courses are offered, see Course Descriptions.
- 1 PS 211 - PS 212 may be substituted for PS 201 - PS 202.
- 2 EN 112 or EN 204 may be substituted for one semester of EN 201 - EN 202.
- 3 Social Science Elective; may enroll in any course in Sociology, Economics, Psychology or Political Science.
- 4 A Philosophy (PH) course in ethics. Use the General Education Ethics list for one of the ethics requirements.
- 5 Recommended Science courses as electives: CH 438.
- 6 An Arts or Humanities course. Use the Arts and Humanities list for this requirement.

## Chemistry Minor

For award of a minor in chemistry students must complete six chemistry courses (of three or more credits), four of which must be above the 100 level. The chemistry minor is not available to those majoring in biochemistry or chemistry.

## Chinese

Associate Professor Xiaoping Song (Program Director), Assistant Professor Xingbo Li, Adjunct Faculty Xiaolin Feng.

The Chinese program at Norwich is designed to give students a thorough mastery of speaking, aural comprehension, and reading and writing skills in Mandarin and a solid understanding of the culture and civilization of China. All Chinese majors are required to combine their study at Norwich with a semester of study in an approved program in China or Taiwan, thus enabling them to experience language immersion and gain additional insights into the Chinese culture and people.

### B.A. in Chinese Major - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	EC/PY/Hi/SO/CJ or PO Elective (At least one of the EC/PY/Hi/So/CJ or PO electives must be in a discipline other than History (HI). Also, CJ 102 and 301 are excluded.	3
CN 111 Beginning Chinese I	6	EN 102 Composition and Literature II	3
Elective	3	Math Elective (excluding MA 005, MA 103)	3
Math Elective (excluding MA 005, MA 103)	3	CN 112 Beginning Chinese II	6
	<b>15</b>		<b>15</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 201 World Literature I	3	EN 202 World Literature II	3
CN 205 Intermediate Chinese I	3	CN 206 Intermediate Chinese II	3
PH Elective (Satisfies the General Education ethics requirement. Eligible courses include PH 303, 322, 323, 324, and 350.	3	Lab Science Elective	4
Lab Science Elective	4	East Asian History Elective	3
Elective	3	Elective	3
	<b>16</b>		<b>16</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CN 301 Advanced Chinese I	3	CN 302 Advanced Chinese II	3
CN 321 Chinese Literature, Culture and Society I 1911-1949	3	EC/PY/Hi/SO/CJ or PO Elective (At least one of the EC/PY/Hi/So/CJ or PO electives must be in a discipline other than History (HI). Also, CJ 102 and 301 are excluded.)	3
East Asian History Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	CN 322 Chinese Literature, Culture and Society II 1949-Present	3
	<b>15</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
Study Abroad		CN 3XX Chinese Elective	3
CN 3XX Advanced Chinese Elective	3	CN 415 Capstone	3
CN 3XX Advanced Chinese Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3		
	<b>15</b>		<b>15</b>
Total Credits: 122			

Students are required to participate in a study abroad program, normally during the fall semester of the junior or senior year, in China or Taiwan. Students are also encouraged to attend summer programs abroad in Chinese language and culture.

ROTC as required are in addition to the above requirements. (Up to six credits of ROTC coursework -- see designated ROTC course list in the university catalog -- may be counted toward degree completion.)

## Chinese Minor

Consists of six courses completed with a grade of C or higher.

CN 205	Intermediate Chinese I	3
CN 206	Intermediate Chinese II	3
Four additional courses numbered CN 301 or higher.		12
Total Credits		18

## Civil Engineering

Charles A. Dana Professors M. Puddicombe and G. Wight; Professors T. Descoteaux and E. Schmeckpeper (Chair); Associate Professors M. Kelley and A. Sevi; Assistant Professors N. Al-Aubaidy, T. Kulkarni, J. Patterson, and M. Tefe.

### Mission

#### The Mission of the Civil and Environmental Engineering Program:

- Prepare students to excel in civil engineering and related fields.
- Make clear to students that above all else, the Civil Engineering profession is committed to bettering the world.
- Provide fundamental, laboratory-oriented (BSCE level only), hands-on education in the civil engineering field.
- Foster creativity, critical thinking, and problem solving abilities and motivate students to consider the environmental consequences of their work.
- Enable students to be leaders in their profession, community, nation, and the world.

Civil engineering, the oldest branch of the engineering profession, utilizes knowledge of mathematics and science, while applying judgment, to design economic means for improving the well-being of humanity: by providing designs for community living, industry, and transportation; and by designing structures for the use of humankind. One of the rare historical records of civil engineering within academia is contained in the first catalogue of this university, dated August 1821. Among the description of offerings to students in 1820 was . . . "Civil Engineering, including the construction of roads, canals, locks and bridges." This institution was thus the first private school in the United States where students were taught engineering as a separate



branch of education. Two of its earliest alumni, Alfred W. Craven and Moncure Robinson, were prominent in the formation of the American Society of Civil Engineers in 1852.

During the first two years, students learn the fundamental mathematical and scientific principles essential for engineering analysis and design. Principles of the design process are introduced in the first engineering courses and continually emphasized and practiced in the subsequent engineering courses. The last two years of the curriculum are devoted to providing a sound grounding in five major civil engineering sub-disciplines: water resources, structural, environmental, geotechnical, and construction. The design experience is culminated in the senior year with a major design project. Because laboratory experience is deemed essential to learning, participatory laboratories reinforce principles learned in lectures and permit students to learn through inquiry. To this end, laboratory sections are kept small and require student participation. Use of the computer for both analysis and design is an integral part of the curriculum and the department maintains a computer laboratory for the exclusive use of civil engineering students. Software required for all courses and additional software for student inquiry is available.

The Norwich Civil Engineering graduate from this program is able to manage varying job demands and requirements and will be capable of adapting to rapidly changing technology. The graduate is also well prepared for further formal study in graduate school where a student can specialize in a civil engineering sub-discipline. The Civil Engineering curriculum is accredited by:

Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>

415 N. Charles Street

Baltimore, MD 21201

Telephone: (410) 347-7700

The curriculum is also strengthened by activities of the Norwich student chapters of the American Society of Civil Engineers, Chi Epsilon, Tau Beta Pi, and the Society of American Military Engineers.

## B.S. in Civil Engineering - Curriculum Map

<b>Freshman</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EG 109 Introduction to Engineering I	3	EG 110 Introduction to Engineering II	3
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
MA 121 Calculus I	4	MA 122 Calculus II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
		General Education Elective	3
	<b>14</b>		<b>17</b>
<b>Sophomore</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CE 211 Surveying	3	CE 214 Site Development and Engineering	4
CE 264 Specifications and Estimating	1	EG 202 Engineering Mechanics (Statics,Dynamics)	3
EG 201 Engineering Mechanics (Statics, Dynamics)	3	EG 206 Thermodynamics I	3
MA 223 Calculus III	4	MA 224 Differential Equations	4
PS 211 University Physics I	4	Science Elective *	3
General Education Elective	3		
	<b>18</b>		<b>17</b>
<b>Junior</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
AC 201 Introduction to Accounting and Financial World	3	CE 322 Fluid Mechanics Laboratory	1
CE 321 Materials Laboratory	1	CE 328 Soil Mechanics	4
CE 336 Introduction to Transportation Engineering	3	CE 332 Engineering Hydrology	3
CE 421 Sanitary Engineering	4	CE 348 Structural Analysis	3
EG 301 Mechanics of Materials	3	CE 422 Water and Wastewater Treatment	3
EG 303 Fluid Mechanics	3	EN 204 Professional and Technical Writing	3
	<b>17</b>		<b>17</b>

<b>Senior</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CE 419 Foundation Engineering	3	CE 444 Reinforced Concrete Design	3
CE 442 Design of Metal Structures	3	CE 480 Senior Design	3
CE 460 Construction Management	3	General Education Elective	3
CE 475 Senior Project Planning	1	General Education Elective	3
EE 315 Electrical Energy Systems	3	Science Elective *	4
EG 044 Conference	0		
EG 450 Professional Issues	3		
	<b>16</b>		<b>16</b>
Total Credits: 132			

An undergraduate student, who has completed all degree requirements except for attaining a 2.00 average, must take at least 50 percent of all subsequent course work in technical material (subject to approval by the School Director).

All Civil Engineering majors are required to take the Fundamentals of Engineering (F.E.) exam, administered by the State of Vermont or other state, to receive the BSCE degree.

\*Science Electives: BI 101, BI 102, BI 220, BI 275, BI 405, ES 270, GL 110, GL 111, GL 156, GL 253, GL 255, GL 257, GL 262, GL 265, ID 110, PS 212. Must include at least one science course that is in an area other than chemistry or physics.

## Physical Education--Coaching

Program Coordinator: Elizabeth Wuorinen

Associate Professor Elizabeth Wuorinen, Assistant Professor Thomas Roberge, Instructor Tanjian Liang

### Minor in Physical Education: Coaching

Physical Education majors can declare a Concentration in Coaching.

The concentration or minor is designed to meet proposed national standards preparation in coaching for elementary through high school level. The primary goals are to teach coaching fundamentals, injury prevention, health awareness, motor skill development, adolescent behavior, and youth leadership skills.

### Physical Education: Coaching Minor

Physical Education majors can declare a Concentration in Coaching.

The concentration or minor is designed to meet proposed national standards preparation in coaching for elementary through high school level. The primary goals are to teach coaching fundamentals, injury prevention, health awareness, motor skill development, adolescent behavior, and youth leadership skills. The following courses are required:

All courses must be passed with a grade of C or higher.

PE 161	Physical Fitness & Wellness Assessment	3
PE 305	Motor Development Activities II	4
PE 355	Coaching:Leadership in Sports	3
PE 432	Organization and Administration in Physical Education	3
<b>Two courses from the following list:</b>		<b>7-8</b>
PE 223	Motor Skills Development I	3
PE 341	Instructional Strategies for Physical Education in Elementary School	4
PE 342	Instructional Strategies for Physical Education in Middle-Secondary School	4
PE 371	Physiology of Exercise	4
SM 220	Care and Prevention of Athletic Injuries	4
PY 324	Adolescent Psychology	3-4
Total Credits		42-44

## Communications

Professors Narain Batra, Kenneth Bush, William Estill; Adjunct Faculty Doug Smith

Because the communications professional must develop creative as well as technical skills, Communications offers a career-oriented curriculum that also emphasizes the liberal arts and sciences. Along with fundamental courses in writing, speech, literature, psychology, mathematics, the natural and social sciences, and fine arts, the Communications curriculum provides advanced writing, editing, and production experience in print and electronic media, using the student newspaper (*The Norwich Guidon*), the student radio station (WNUB-FM), and the student video magazine (*Our American Journey*) as practical workshops. The senior year, with its Communications Seminar and off-campus internships, guides the student into the world of the communications professional.

### B.S. in Communications - Curriculum Map

To graduate with a major in Communications, the student must earn the grade of C or higher in EN 101, EN 102, , and all required CM courses.

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	PY Elective	3
EN 112 Public Speaking	3	EN 102 Composition and Literature II	3
MA (excluding MA 005 or MA 103 or MA 160)	3-4	MA (excluding MA 005 or MA 103 or MA 160)	3-4
CM 109 Introduction to Mass Media	3	CM 271 Television Production	4
		CM 261 Interpersonal Communications	3
	<b>12-13</b>		<b>16-17</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 201 World Literature I	3	CM 208 Journalism II: Advanced News Gathering and Design	3
CM 207 Journalism I: News Gathering	3	CM 351 Radio Production or 491 Media Composer Techniques	3
CM 211 Broadcasting Techniques	3	EN 202 World Literature II	3
HI Elective	3	HI/PO/SO Elective	3
IS Elective (excluding IS 120)	3	MG 101 Introduction to Business, AC 205 Principles of Accounting-Financial, or EC 201 Principles of Economics (Macro)	3
	<b>15</b>		<b>15</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CM 209 Broadcast Writing	3	CM 303 Advertising	3
MU/FA/SA/PH Elective (SA 107 does not fulfill this requirement)	3	PY Elective	3
Laboratory Science Elective	4	Laboratory Science Elective	4
Elective	3	Film, theater, or TV criticism elective (CM 335; EN 239, EN 240, EN 241, EN 307, EN 308, EN 310, EN 333, EN 334)	3
Elective	3	Elective	3
	<b>16</b>		<b>16</b>

Fourth Year			
Fall	Credits	Spring	Credits
CM 436 Communications Law and Ethics	3	CM 408 Communications Internship	3
SA 107 Introduction to Photography (or CM 270, 391, 392, 393, 491, 492, 494, 495)	3	CM 407 Senior Communications Seminar	3
Literature Elective	3	Literature Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	<b>15</b>		<b>15</b>
Total Credits: 120-122			

## Communications Minor

Consists of six courses completed with a grade of C or higher

CM 109	Introduction to Mass Media	3
CM 207	Journalism I: News Gathering	3
four additional courses numbered CM 208 or higher		12
Total Credits		18

## Computer Crime & Forensics

Professor Kabay; Associate Professors Blythe and Stephenson; Assistant Professor Hansen; Lecturers Almagambetov and Bovee; Adjunct Instructor Rowley.

Students seeking a minor in Computer Crime and Forensics must obtain the approval of the School Director and complete each of the required courses with a grade of C or higher.

### Computer Crime and Forensics Minor

The following courses are prerequisites to the courses required by this minor.

CJ 101	Introduction to Criminal Justice	3
CJ 102	Substantive Criminal Law	3
IS 130	Introduction to Computing	3

Students must complete all of the six courses listed below, each with a grade of C or higher.

CJ 301	Criminal Procedure	3
IS 131	Computer Programming	3
IS 228	Introduction to Data Structures	3
IS 340	Information Systems Security Assurance I	3
CJ 341	Cyber Law and Cyber Crime	3
CJ 442	Introduction to Computer Forensics	4
Total Credits		19

## Computer Information Systems Concentration--Management Major

Professor Kabay; Associate Professors Blythe and Stephenson; Assistant Professor Hansen; Lecturers Almagambetov and Bovee; Adjunct Instructor Rowley.

The concentration in Computer Information Systems (CIS) is designed to equip any major with the necessary skills to understand the complexity of today's corporate computing environment. Within the concentration, students will be able to understand the complexities of a computer programming language as well as the many issues surrounding computer security, information assurance, software engineering, and networked systems. The requirements for the concentration include one year of programming classes, a course in the management of information assurance, and one offering of software engineering. This broad look at information systems equips all students in the concentration with skills essential to understanding key concepts in computing environments. The goal of this concentration is to arm students with a rich appreciation and knowledge of the information systems world.



It is also the aim of this concentration to augment the any major course of study, thus augmenting their major course of study with a solid mastery of computer system concepts, issues, and skills.

After completion of the concentration, students are able to:

- Understand programming language syntax and logic in order to create software solutions to business problems.
- Understand information assurance and computer security concepts and strategies that are necessary in securing data and networks in today's security-conscious world.
- Understand information systems in the context of their type of business or industry.

### Computer Information Systems (CIS) Concentration Courses

IS 130	Introduction to Computing	3
IS 131	Computer Programming	3
IS 301	Software Engineering I	3
IS 342	Management of Information Assurance	3
Major/Concentration Elective		3
Major/Concentration Elective		3
Total Credits		18

### Major/Concentration Electives -- Choose two from the following list:

AC		
MG		
IS		
EC		
FN		
QM		
CP		
MA 240	Introduction to Number Theory and Cryptology	3
MA 318	Cryptology	3
MA 370	Introduction to Operations Research	3
CJ 341	Cyber Law and Cyber Crime	3
CJ 442	Introduction to Computer Forensics	4
PY 210	Psychology of Leadership	3
AS 311	Air Force Leadership Studies	3
AS 312	Air Force Leadership Studies	3
AS 411	National Security Affairs/Preparation for Active Duty	3
AS 412	National Security Affairs/Preparation for Active Duty	3
MS 311	Military Science III	3
MS 312	Military Science III	3
MS 411	Military Science IV	3
MS 412	Military Science IV	3
NS 321	Naval Ship Systems I	3
NS 342	Small Unit Leadership Skills	2
NS 421	Naval Operations and Seamanship	3
NS 422	Leadership and Ethics	3
Modern Foreign Languages		

### Computer Information Systems Minor

(Not open to students with a major in Computer Science or Computer Security or Information Assurance).

Students seeking a minor in Computer Information Systems must obtain the approval of the School Director and must complete all of the six courses listed below, each with a grade of C or higher.

IS 130	Introduction to Computing	3
IS 131	Computer Programming	3

IS 221	G.U.I. Programming <sup>1</sup>	3
IS 228	Introduction to Data Structures	3
IS 240	Database Management	3
<b>One of the following:</b>		<b>3</b>
IS 301	Software Engineering I	3
IS 353	Business Programming Languages	3
IS 406	Special Topics in Computer Science	3
IS 460	Data Communications and Networks (changing to IS 260)	3
Total Credits		18

<sup>1</sup> IS 120 or IS 121 may be substituted for IS 221.

## Computer Science

Professor Kabay; Associate Professors Blythe and Stephenson; Assistant Professor Hansen; Lecturers Almagambetov and Bovee; Adjunct Instructor Rowley.

The program focuses on the design and development in computational environments, as well as the underlying theoretical foundations that make these environments operate efficiently, reliably, and securely. Our graduates integrate knowledge from other disciplines such as management, economics, mathematics, and engineering and enter into organizations with a broad functional and enterprise perspective.

The Bachelor of Science program in Computer Science provides students with a solid foundation for a wide range of career fields and for entry into graduate degree programs. This intense and challenging program provides extensive preparation in data structures, algorithms, and mathematics leading to advanced courses in computer architecture, operating systems, software engineering, computer networking, information security, and information management. The graduates of this program have the in-depth knowledge of hardware, software, and applications required to perform complex tradeoff analyses at the hardware and software level. The technical studies in this program, combined with thoughtful selection of electives in the humanities and social sciences, prepare the graduate to be a future leader in our progressive, information-based society.

Each student has an individually assigned faculty adviser from their very first day on campus. The faculty adviser assists in the development of an individualized academic program designed to meet the student's career goals. The student and the faculty adviser work together keeping the student's individualized program on track through the four years at Norwich. Committed to strong ties between the classroom, the computer labs, and the real world, this program focuses extensively on the application of classroom work to solving real world computer design and application problems.

### B.S. in Computer Science - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
EN 101 Composition and Literature I	3	General Education-History Elective	3
MA 107 Precalculus Mathematics	4	EN 102 Composition and Literature II	3
IS 130 Introduction to Computing	3	MA 121 Calculus I	4
IS 100 Foundations of CSIA	3	IS 131 Computer Programming	3
		General Education-Arts & Humanities Elective	3
	<b>13</b>		<b>16</b>
Second Year			
Fall	Credits	Spring	Credits
EN 203 Advanced Composition	3	IS 240 Database Management	3
MA 122 Calculus II	4	EE 325 Computer Architecture and Operating Systems	3
IS 228 Introduction to Data Structures	3	QM 213 Business and Economic Statistics I	3
General Education-Lab Science Elective 1	4	General Education-Lab Science Elective 2	4
EE 215 Fundamentals of Digital Design	4	Major/Concentration-Economics Elective	3
	<b>18</b>		<b>16</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EE 321 Embedded Systems	4	IS 460 Data Communications and Networks	3
IS 301 Software Engineering I	3	Elective Course	3
MA 306 Discrete Mathematics	3	MA 380 Theory of Computation	3
Major/Concentration-Business Elective	3	Major/Concentration-IS Elective	3
Elective Course	3	Major/Concentration-Engineering Elective	3
	<b>16</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CS Capstone/Research/Internship	3	CS Capstone/Research/Internship	3
Major/Concentration-Ethics Elective	3	EE 411 Infrastructure Control Systems	4
Major/Concentration-Literature Elective	3	Major/Concentration-Mathematics Elective	3
Major/Concentration-IS Elective	3	Major/Concentration-IS Elective	3
Elective Course	3	Elective Course	3
	<b>15</b>		<b>16</b>
Total Credits: 125			

**Major/Concentration-Economics Elective: choose one of the following:**

EC 201	Principles of Economics (Macro)	3
EC 202	Principles of Economics (Micro)	3

**Major/Concentration-Business Elective: choose one of the following:**

MG 101	Introduction to Business	3
MG 309	Management of Organizations	3
MG 310	Production/Operations Management	3
MG 341	Business Law I	3

**Major/Concentration-Engineering Elective: choose one of the following:**

EG 109	Introduction to Engineering I	3
EG 203	Materials Science	3
EG 206	Thermodynamics I	3
EE 204	Electrical Circuits I	3
EE 315	Electrical Energy Systems	3

**Major/Concentration-IS Elective:**

Any IS course numbered 301 or above	3
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**Major/Concentration-Mathematics Elective: choose one of the following:**

MA 223	Calculus III	4
MA 224	Differential Equations	4
MA 240	Introduction to Number Theory and Cryptology	3
MA 241	Mathematical Computation and Modeling	3
MA 309	Algebraic Structures	3
MA 421	Number Theory	3

**Major/Concentration-Ethics Elective: choose one of the following:**

PH 303	Survey of Ethics	3
PH 322	Business Ethics	3

## Computer Security & Information Assurance

Professor Kabay; Associate Professors Blythe and Stephenson; Assistant Professor Hansen; Lecturers Almagambetov and Bovee; Adjunct Instructor Rowley.

### Center of Academic Excellence in Information Assurance Education

Since 2001, Norwich University has been designated a Center of Academic Excellence in Information Assurance Education by the National Security Agency of the United States of America. This designation is in recognition of Norwich's significant contribution in meeting the national demand for information assurance education, developing a growing number of professionals with information assurance expertise and ultimately contributing to the protection of the national information infrastructure. Norwich University has met the criteria for measuring the depth and maturity of established programs in the field of information assurance.

This degree requires a base of study in the Liberal Arts, Mathematics, the sciences, Information Systems, and Computer Programming fundamentals. It also provides flexibility for specialized study in such fields as computer forensics, information warfare, and advanced information security.

The Information Assurance program focuses on enabling our graduates to analyze requirements for and implement measures to protect information confidentiality, control, integrity, authenticity, availability and utility and to maintain their technical and managerial competence in the face of ever-changing requirements and technology. Our students will integrate knowledge from other disciplines within the school: economics, management, computer information systems and computer science, to enter into organizations with both a functional and enterprise perspective.

Graduates will be prepared to participate with computer security professionals in industry, government, military and academic environments. They will have developed a thorough commitment to a multidisciplinary perspective, fully aware at all times that technology must be integrated with human factors for success in defending information resources. They will be ready for the next phase of their continuing and perpetual education in a constantly changing field.

The academic goal for a graduate is to address the evolving nature of the social fabric of this country as it becomes more technologically driven. The program will pay special attention to individual privacy rights and how privacy rights are affected by the increasingly interconnected banks of information about individuals. As global business continues to develop, graduates will be provided with differing perspectives on information security and with a set of ethical decision-making principles for deciding how best to implement computer security in various environments.

During the spring semester of their sophomore year, CSIA majors will be required to select a concentration. CSIA majors will have the option to choose from one of three concentrations:

- Forensics;
- Information Warfare; or
- Advanced Information Security.

Graduates will have entry-level ability to participate in information systems security assurance planning, procedures and practices. At a minimum, graduates will be expected to meet the standards as established by the National Security Telecommunications and Information Systems Security Committee (NSTISSC) for Information Systems Security Professionals.

### B.S. Computer Security & Information Assurance - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
EN 101 Composition and Literature I	3	IS 131 Computer Programming	3
IS 130 Introduction to Computing	3	General Education-Lab Science Elective 1	4
IS 100 Foundations of CSIA	3	General Education-History Elective	3
MA 107 Precalculus Mathematics	4	EN 102 Composition and Literature II	3
		General Education-Arts & Humanities Elective	3
	<b>13</b>		<b>16</b>
Second Year			
Fall	Credits	Spring	Credits
PY 211 Introduction to Psychology	3	IS 240 Database Management	3
MG 341 Business Law I	3	IS 260 Data Communications and Network	3
CJ 341 Cyber Law and Cyber Crime	3	MA 318 Cryptology	3
IS 228 Introduction to Data Structures	3	MG 346 Business Law II	3
MA 240 Introduction to Number Theory and Cryptology	3	QM 213 Business and Economic Statistics I	3
	<b>15</b>		<b>15</b>

Third Year			
Fall	Credits	Spring	Credits
IS 340 Information Systems Security Assurance I	3	IS 302 Software Engineering II	3
MG 309 Management of Organizations	3	MG 351 Organizational Behavior	3
EN 112 Public Speaking	3	Major/Concentration Elective	3
IS 301 Software Engineering I	3	IS 342 Management of Information Assurance	3
Major/Concentration Elective	3	EN 204 Professional and Technical Writing	3
	<b>15</b>		<b>15</b>
Fourth Year			
Fall	Credits	Spring	Credits
IS 455 Contemporary Issues in Computer Science	3	EC 201 Principles of Economics (Macro)	3
Major/Concentration Elective	3	IS456	3
Major/Concentration Elective	3	Major/Concentration Elective	3
General Education-Lab Science Elective 2	4	Major/Concentration Elective	3
Elective Course	3	General Education-Literature Elective	3
	<b>16</b>		<b>15</b>
Total Credits: 120			

## Computer Security & Information Assurance Concentrations

### Forensics Concentration

CJ 421	Comparative Criminal Justice Systems	3
IS 311	Network Forensics	3
IS 312	Malware Forensics	3
IS 411	Cyber Investigation	3

#### Major/Concentration Electives - Choose two of the following

EE 325	Computer Architecture and Operating Systems	3
IS 300	Management Information Systems	3
IS 330	Ethics in Computing & Technology	3
IS 370	Introduction to Information Warfare	3
IS 380	Offensive Information Operations	3
IS 406	Special Topics in Computer Science	3
IS 407	Politics of Cyberspace	3
IS 410	Computing Internship	3
IS 440	Software Engineering III	3
PO 333	American Foreign Policy	3
PY 234	Forensic Psychology	3

### Advanced Information Security Concentration

CJ 442	Introduction to Computer Forensics	4
EE 325	Computer Architecture and Operating Systems	3
IS 440	Software Engineering III	3

#### Major/Concentration Electives - Choose two of the following

IS 300	Management Information Systems	3
IS 311	Network Forensics	3
IS 312	Malware Forensics	3
IS 330	Ethics in Computing & Technology	3
IS 370	Introduction to Information Warfare	3
IS 380	Offensive Information Operations	3



IS 406	Special Topics in Computer Science	3
IS 407	Politics of Cyberspace	3
IS 410	Computing Internship	3
IS 411	Cyber Investigation	3
PY 234	Forensic Psychology	3

## Construction Management

Charles A. Dana Professors M. Puddicombe and G. Wight; Professors T. Descoteaux and E. Schmeckpeper (Chair); Associate Professors M. Kelley and A. Sevi; Assistant Professors N. Al-Aubaidy, T. Kulkarni, J. Patterson, and M. Tefe.

In any given construction project the disciplines of architecture, engineering and management converge. Recognizing this fact is a student's first step towards becoming a real-world leader in the fields of project and construction management. The second step is taken by enrolling in Norwich University's Construction Management degree program, where students learn the foundational skills necessary to take projects from the conceptual stage straight through to the grand opening ceremony.

Construction Management students are taught to assess, strategize and execute projects from an interdisciplinary approach in which facets of architecture, engineering and management are taken into account. Along with business, engineering and architecture courses, students are required to take Construction Management courses specifically designed to prepare students for situations they may encounter while on the job site and in the office. Additionally, core studies include courses in the humanities, social sciences, mathematics and sciences. Upon completion of the program, students are awarded the Bachelor of Science in Construction Management, are prepared to sit for the Associated Constructors (AC) and/or the Construction Management in Training Exams (CMIT), and have a foundational understanding of:

- pre-construction, design, and construction management;
- project life-cycle and sustainability;
- safety, injury prevention, and regulatory compliance;
- law, contract documents, and dispute prevention and resolution;
- materials and methods of construction;
- finance and accounting principles;
- planning and scheduling;
- quantity takeoff and cost estimating;
- delivery methods;
- leadership;
- business and communication skills

The B.S. Construction Management curriculum is designed to be accredited by the Applied Science Accreditation Commission (ASAC) of ABET, <http://www.abet.org>, 415 N. Charles Street, Baltimore, MD, 21201, 1.410.347.7700.

- Note: The application for accreditation of the B.S. Construction Management program will be submitted to ABET in 2015.

### B.S. in Construction Management - Curriculum Map

Freshman			
Fall	Credits	Spring	Credits
AP 111 Fundamentals of Architecture	4	EM 101 Introduction to Construction Project Management	3
EG 109 Introduction to Engineering I	3	MG 101 Introduction to Business	3
MA 107 Precalculus Mathematics (or higher)	4	PS 201 General Physics I	4
EN 101 Composition and Literature I	3	MA 121 Calculus I (or MA108)	4
		EN 102 Composition and Literature II	3
	<b>14</b>		<b>17</b>

<b>Sophomore</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
AP 225 Introduction to Passive Environmental Systems	3	AC 205 Principles of Accounting-Financial	4
CH 103 General Chemistry I	4	AP 325 Materials, Construction, and Design	3
CE 211 Surveying	3	CE 214 Site Development and Engineering	4
CE 264 Specifications and Estimating	1	EM 302 Supply Chain Management	3
EC 202 Principles of Economics (Micro)	3	QM 213 Business and Economic Statistics I (or MA232)	3
EN 204 Professional and Technical Writing	3		
	<b>17</b>		<b>17</b>
<b>Junior</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
AC 201 Introduction to Accounting and Financial World	3	AP 328 Active Building Systems II	3
AP 327 Active Building Systems I	3	CE 457 Wood, Steel, and Concrete Structures	4
CE 336 Introduction to Transportation Engineering	3	EM 320 Construction Productivity	3
CE 351 Statics and Mechanics of Materials	4	EM 399 Safety	3
CE 460 Construction Management	3	General Education Elective	3
	<b>16</b>		<b>16</b>
<b>Senior</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CE 321 Materials Laboratory	1	EM 402 Construction Management Practices	3
CE 458 Structural Issues for Construction	3	CE 499 Applied Soils and Foundations	4
EM 301 Project Management	3	MG 310 Production/Operations Management	3
EM 401 Pre-Construction Management	3	MG 351 Organizational Behavior	3
MG 341 Business Law I	3	General Education Elective	3
General Education Elective	3		
	<b>16</b>		<b>16</b>
Total Credits: 129			

## Construction Management Minor

Engineering majors may elect this minor.

Students must complete all of the following courses with a grade of "C" or better.

<b>a. Two courses from the following list:</b>	<b>6-8</b>
AP 225 Introduction to Passive Environmental Systems & AP 325 and Materials, Construction, and Design	6
CE 211 Surveying & CE 214 and Site Development and Engineering	7
Two 300 and/or 400 level Civil Engineering courses	6-8
Two 300 and/or 400 level Electrical Engineering courses	6-8
Two 300 and/or 400 level Mechanical Engineering courses	6-8
Two Architectural Design courses	6-10
Two 300 and/or 400 level Computer Science courses	6-8
Two 300 and/or 400 level Science courses	6-8
<b>Four courses from the following list:</b>	<b>12-13</b>
AC 201 Introduction to Accounting and Financial World or AC 205 Principles of Accounting-Financial	3-4
CE 460 Construction Management	3

EM 301	Project Management	3
MG 310	Production/Operations Management	3
EM 302	Supply Chain Management	3
Total Credits		18-21

## Criminal Justice

Charles A. Dana Professor Stanley Shernock (Director); Professors William Clements and Penny Shtull; Associate Professor Aimee Vieira; Assistant Professors Elizabeth Gurian, Min Li, Emily Meyer, W. Travis Morris, Johannes Wheeldon; Lecturers: Anne Buttimer, David Orrick; Adjunct Faculty: B. Allison Crowson, Kristin Chandler, Ben Maniscalco, Max Schlueter

### Criminal Justice

To provide career preparation for students expecting to work in the criminal justice field, or related fields, the program offers internships, career counseling, and pre-law advising; and incorporates into the curriculum case analyses, police and court observations, field trips, simulations, and guest lectures by practitioners. Internships and work-study opportunities are also available at the Crime Research Group (CRG), which is currently affiliated with the School of Justice Studies and Sociology at Norwich University. The CRG, one of only seven state criminal justice statistical analysis centers affiliated with a university, is responsible for information dissemination, statistical analysis, and planning in criminal justice for the State of Vermont.

Students accepted into the Criminal Justice Program in Good Standing, upon entrance to Norwich University, must have a minimum combined 1350 score on the new SAT exam and a 2.5 or higher, grade point average (on a 4.00 point scale) in high school academic work.

A minor in Computer Crime and Forensics (p. 54) is available. Students seeking a minor in Computer Crime and Forensics must obtain the approval of the School Director and complete each of the required courses with a grade of C or higher. The following courses are prerequisites to the courses required by this minor.

- CJ 101 Introduction to Criminal Justice 3
- CJ 102 Substantive Criminal Law 3
- IS 130 Introduction to Computing 3

### B.A. in Criminal Justice - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
CJ 101 Introduction to Criminal Justice (grade of C or higher required)	3	EN 102 Composition and Literature II	3
EN 101 Composition and Literature I	3	Math Elective (excludes MA 005 & MA 103)	3
Foreign Language (or Lab Science & Sociology: preferably SO 201 or SO 202; excludes SO 209 & SO 214)	7-6	CJ 102 Substantive Criminal Law (grade of C or higher required)	3
		Foreign Language (or Lab Science & Psychology)	7-6
	<b>13-12</b>		<b>16-15</b>
Second Year			
Fall	Credits	Spring	Credits
EN 201 World Literature I	3	CJ 201 Criminology (grade of C or higher required)	3
Lab Science & Sociology: preferably SO 201 or SO 202; excludes SO 209 & SO 214; (or Foreign Language if not taken freshman year)	7-6	EN 202 World Literature II	3
CJ 209 Methods of Social Science Research	4	Lab Science & Psychology (or Foreign Language if not taken freshman year)	7-6
MA 232 Elementary Statistics (sections for CJ majors)	3	History Elective (preferably HI 121, HI 122, HI 235, HI 236)	3
	<b>17-16</b>		<b>16-15</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CJ 308 The Police (grade of C or higher required)	3	CJ 310 The Courts (grade of C or higher required)	3
CJ 301 Criminal Procedure (grade of C or higher required)	3	IS 399 Test Course (Cyber Criminalistics)	3
Political Science Elective (preferably PO 313, PO 314, PO 330, PO 331 or with HI/PO Chair approval PO 101, PO 105, PO 106; excludes PO 321 & PO 324)	3	Humanities Elective	3
PH 324 Criminal Justice Ethics	3	Free Elective	3
SO 214 Racial and Cultural Minorities	3	CJ 312 Corrections (grade of C or higher required)	3
	<b>15</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CJ Elective (grade of C or higher required)	3	CJ 410 Senior Seminar (grade of C or higher required)	3
PO 321 U.S. Constitutional Law (or Free Elective if taking PO 324 in spring)	3	PO 324 Civil Liberties (or Free Elective only if PO 321 taken in fall)	3
Humanities Elective (Literature Course)	3	CJ Elective (grade of C or higher required)	3
Humanities Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	<b>15</b>		<b>15</b>
Total Credits: 122-118			

**NOTE:** In addition to the above, members of the Corps of Cadets are required to complete an ROTC course each semester through the third year.

### **Criminal Justice Minor**

For the minor in Criminal Justice, the student must complete six courses (18 degree credits) with a grade of C or higher that must include:

CJ 101	Introduction to Criminal Justice	3
CJ 102	Substantive Criminal Law	3
CJ 201	Criminology	3
Select two of the following:		6
CJ 308	The Police	3
CJ 310	The Courts	3
CJ 312	Corrections	3
One CJ Elective Course (excludes CJ 209)		3
Total Credits		18

### **Economics**

Charles A. Dana Professor Puddicombe; Professors Kabay and Mohaghegh; Associate Professors Benabess, Blythe, Jolley and Yandow; Assistant Professor Chung; Lecturer Pomeroy; Adjunct Instructors Alcorn, Faulkner, Fogg, Merolli, Rowley, Seipel and Verret.

The minor in Economics is intended to provide a general introduction to the field and provides non-business majors with an understanding of key finance concepts. Students seeking a minor in Economics must obtain the approval of the School Director and complete each of the required courses with a grade of C or higher.

## Economics Minor

Students seeking a minor in Economics must obtain the approval of the School Director and must complete all of the six courses listed below, each with a grade of C or higher.

EC 201	Principles of Economics (Macro)	3
EC 202	Principles of Economics (Micro)	3
<b>Two of the following:</b>		<b>6</b>
EC 310	Money and Banking	3
EC 301	Intermediate Price Theory	3
EC 302	National Income Analysis	3
EC 406	Public Finance	3
Two additional courses numbered 300 or above in Economics (EC), Finance (FN) or Quantitative Methods (QM).		6
Total Credits		18

## Education

Program Director: Associate Professor Diane Byrne; Adjunct Professor Timothy Crowley

The BS in Education is designed to lead to recommendation for licensure for students who complete the program. The BS in Education requires all students to have a double major. Those choosing elementary education may major in mathematics or any of the Liberal arts and science areas that are offered at Norwich University. Those who choose secondary education must major in Mathematics.

Successful completion of this major demands a high degree of commitment on the student's part. In some instances, this may require an extra semester. However, if the double major is started in a student's freshman year, requirements for both degrees can be completed in four years. All education majors are required to have an overall GPA of 3.0 in both majors before being placed in Student Teaching and before graduation. In addition, all education majors are required to take the PRAXIS Core Academic Skills for Educators test & the PRAXIS II Content Tests. All students are required to take the PRAXIS Core Academic Skills for Educators test before the end of their sophomore year or 60 credits. All students are required to take the PRAXIS II Content Tests in the spring of their junior year before their completion of 90 credits. Both PRAXIS tests are to be passed with results received by the Director of Education Teacher Licensure prior to placement in Student Teaching. Other licensure requirements, such as the licensure portfolio, are articulated in the Education Teacher Licensure Student Handbook. Education Teacher Licensure has a reciprocity agreement with 50 states of the United States. This allows you to teach in other states with your Vermont Teacher License up to two years. More information on our reciprocity agreement can be found in the Education Teacher Licensure Student Handbook.

The BS in Education Teacher Licensure requires 120 credits for elementary and secondary tracks.

### B.S. in Education/Elementary Teacher Licensure - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
ED 104 Foundations of Education	3	PY 220 Developmental Psychology	3
PY 211 Introduction to Psychology	3	EN 102 Composition and Literature II	3
HI Elective (excludes HI 209)	3	MA 161 Mathematics for Elementary School Teachers II	3
MA 160 Mathematics for Elementary School Teachers I	3	Elective	3
EN 101 Composition and Literature I	3	Elective	3
	<b>15</b>		<b>15</b>
Second Year			
Fall	Credits	Spring	Credits
ED 234 Learning and Teaching Strategies	4	ED 315 Special Needs Child	3
Literature Course (required for all degrees)	3	Elective	3
Lab Science	4	Lab Science	4
Elective	3	Elective	3
Elective	3	Arts & Humanities Course (required for all degrees)	3
	<b>17</b>		<b>16</b>



<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 360 Teaching Mathematics at the Elementary - Middle School Level (or Elective; offered every other fall in even numbered years. MA 161 prerequisite for MA 360)	3	Elective	3
Elective	3	ED 351 Methods of Teaching Science to Elementary Students	3
PY 352 Learning and Memory	4	Elective	3
ED 360 Language Arts and Teaching Reading in the Elementary School	4	Ethics Course (Required for all degrees)	3
Elective	3	Elective	3
	<b>17</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ED 432 Curriculum and Methods of the Elementary School	4	ED 425 Student Teaching	12
Four Electives	12		
	<b>16</b>		<b>12</b>
Total Credits: 123			

The B.S. in Education secondary requires students to major in Mathematics.

## **B.S. in Education/Secondary Teacher Licensure - Curriculum Map**

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ED 104 Foundations of Education	3	PY 220 Developmental Psychology	3
HI Elective (excludes HI 209)	3	EN 102 Composition and Literature II	3
PY 211 Introduction to Psychology	3	MA Elective	3-4
Elective	3	Elective	3
EN 101 Composition and Literature I	3	Elective	3
	<b>15</b>		<b>15-16</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ED 234 Learning and Teaching Strategies	4	EN 202 World Literature II	3
EN 201 World Literature I	3	Arts & Humanities (Required for all degrees)	3
PY 324 Adolescent Psychology	3-4	Lab Science	4
Lab Science	4	Elective	3
Elective	3	Elective	
	<b>17-18</b>		<b>13</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PY 352 Learning and Memory	4	ED 363 Reading and Writing in the Content Area	4
Elective	3	Ethics (Required for all degrees)	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	<b>16</b>		<b>16</b>

Fourth Year			
Fall	Credits	Spring	Credits
ED 368 Curriculum & Methods in Secondary Subjects	4	ED 425 Student Teaching	12
Four Electives	12		
	<b>16</b>		<b>12</b>
Total Credits: 120-122			

## The Fifth-Year Program

For those with degrees in appropriate fields, an opportunity to become a candidate for licensure is provided through a “fifth-year” program. These students are non-matriculating students. Each candidate’s course work and experience are evaluated and a program of study is recommended. Typically, for candidates without education or psychology courses, the program takes 1-1/2 – 2 years to complete. Because of course sequencing, a candidate with some of the required courses must commit to a minimum of one year. Candidates must meet the same requirements for licensure as those students enrolled in the Education Major.

## The Portfolio

All licensure candidates are required to complete a portfolio. Development of the portfolio begins in your sophomore year and is continued in subsequent courses. Substantial progress toward completion must be demonstrated before the student is admitted to student teaching. This means that Entries 1-4 need to be completed and assessed prior to Student Teaching Placement. The development of your portfolio and its process is discussed in further detail in your Portfolio Handbook.

## Praxis Tests

In order to be recommended for licensure, candidates must achieve a passing score on the Praxis Core Academic Skills for Educators and the PRAXIS II Content Tests. These tests are discussed in detail with Education students during their individual advising times.

All students are required to pass PRAXIS I Core Academic Skills for Educators test and the Praxis II Content tests prior to placement in ED 425 Student Teaching.

## Elementary Education Minor

The student will complete the following courses:

ED 234	Learning and Teaching Strategies	4
PY 220	Developmental Psychology	3
ED 315	Special Needs Child	3
<b>And three of the following four courses:</b>		<b>9-11</b>
ED 432	Curriculum and Methods of the Elementary School	4
ED 351	Methods of Teaching Science to Elementary Students	3
ED 360	Language Arts and Teaching Reading in the Elementary School	4
MA 360	Teaching Mathematics at the Elementary - Middle School Level	3
Total Credits		19-21

## Secondary Education Minor

ED 234	Learning and Teaching Strategies	4
PY 220	Developmental Psychology	3
ED 315	Special Needs Child	3
ED 363	Reading and Writing in the Content Area	4
ED 368	Curriculum & Methods in Secondary Subjects	4
PY 324	Adolescent Psychology	3,4
Total Credits		21-22

## Electrical & Computer Engineering

Professors S. Fitzhugh and R. Lessard; Associate Professors J. Beneat and M. Prairie (Chair), Lecturer D. Feinauer.

## **The Mission of the Electrical and Computer Engineering Department:**

To prepare students for the profession of Electrical and Computer Engineering – to enable them to solve problems of substance through the application of fundamental principles, disciplined practices and modern methods – to instill the humility of contribution to ventures larger than themselves, and the courage to lead others in the pursuit of such ventures – to inspire an ethic of service to all mankind in the context of a global community – and finally, to instill a lifelong thirst for the knowledge of their craft.

## **Graduates of the Electrical and Computer Engineering program will:**

- Attain respect for competence in the skills of engineering practice by solving problems and leading others in the pursuit of solutions.
- Effectively communicate the results of their work.
- Work professionally in team environments to design electrical and computer systems.
- Pursue professional development through life-long learning to better serve in an evolving global society.
- Demonstrate initiative and perform leadership roles in an ethical manner.
- Perceive the impact of their professional decisions on society.

## **Students in the Electrical and Computer Engineering programs will demonstrate an ability to:**

- Apply knowledge of advanced mathematics, chemistry, physics, and engineering.
- Identify, formulate, and solve electrical engineering problems.
- Design and conduct experiments, as well as to analyze and interpret data.
- Apply the techniques, skills, and modern engineering test equipment and software applications necessary for engineering practice.
- Communicate effectively through written and verbal means.
- Contribute to multidisciplinary / multicultural teams.
- Recognize the need to engage in life-long learning.
- Demonstrate the leadership competencies of self-awareness, self-management, social-awareness, and relationship management.
- Demonstrate an understanding of professional and ethical responsibility.
- Design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability.
- Appreciate the impact of engineering solutions in a global, economic, environmental, and societal context.
- Demonstrate knowledge of contemporary issues.

The Electrical and Computer Engineering curriculum is accredited by:

Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>  
 415 N. Charles Street  
 Baltimore, MD 21201  
 Telephone: (410) 347-7700

The Electrical and Computer Engineering programs are designed to allow graduates the option of beginning a career in either the military or civilian life immediately upon graduation, or furthering their education in graduate school. Studies are designed to give the broad background necessary to apply electrical and computer engineering principles and methods to solve problems in an ever increasing range of applications. During the first two years, students receive intensive instruction in mathematics and basic physical sciences as well as fundamental principles and techniques of engineering. Students are introduced to the basic tools and problem solving techniques they will use throughout their career. The final two years are spent in a laboratory intensive environment. In the third year, students begin to apply their knowledge solving discipline-specific engineering problems. Project based courses begin to develop the ability to apply knowledge in open-ended problems. In the fourth year, more focused courses cover a broad spectrum of electrical and computer engineering topics. A completely open-ended design experience, where students can exercise creativity solving current engineering problems, spans the senior year. Designing, building, testing, and evaluating projects in such application areas as instrumentation and data acquisition, computer network control, SCADA systems security, robotics, wireless communication, and machinery controls is typical of this experience. Constraints such as economics, safety, reliability, aesthetics, ethics, and social impact are considered. This experience builds upon the fundamental concepts of mathematics, basic sciences, the humanities and social sciences, engineering topics, and communication skills developed earlier in the undergraduate experience. The design team experience allows close coordination with an individual faculty member. The scope of the project is designed to match the requirements of practice within the electrical and computer engineering discipline.

## B.S. in Electrical and Computer Engineering - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EG 109 Introduction to Engineering I	3	EG 110 Introduction to Engineering II	3
CH 103 General Chemistry I	4	EE 200 Engineering Programming	3
MA 121 Calculus I	4	MA 122 Calculus II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
		General Education Elective	3
	<b>14</b>		<b>16</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EE 215 Fundamentals of Digital Design	4	EE 356 Electrical Circuits II	3
EE 204 Electrical Circuits I	3	EG 206 Thermodynamics I	3
MA 223 Calculus III	4	MA 224 Differential Equations	4
PS 211 University Physics I	4	PS 212 University Physics II	4
General Education Elective	3		
	<b>18</b>		<b>14</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EE 321 Embedded Systems	4	EE 303 Electromagnetic Field Theory I	3
EE 350 Linear Systems	3	EE 325 Computer Architecture and Operating Systems	3
EE 357 Electronics I	3	EE 366 Electronics II	4
EE 359 Electrical Engineering Laboratory	1	EE 373 Electrical Energy Conversion	4
MA 306 Discrete Mathematics	3	EN 204 Professional and Technical Writing	3
General Education Elective	3		
	<b>17</b>		<b>17</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EE 491 Electrical System Design I	3	EE 411 Infrastructure Control Systems	4
EE 478 Control Systems	3	EE 459 Power Systems Analysis	3
MA 311 Statistical Methodology	3	EE 486 Digital Signal Processing	3
EE 463 Communication Systems	4	EE 487 Digital Signal Processing Lab	1
EG 450 Professional Issues	3	EE 494 Electrical System Design II	3
		General Education Elective	3
	<b>16</b>		<b>17</b>
Total Credits: 129			

An undergraduate student, who has completed all degree requirements except for attaining a 2.00 average, must take at least 50 percent of all subsequent course work in technical material (subject to approval by the Director of the David Crawford School of Engineering).

## Engineering Science

For a minor in Engineering Science a student must complete six engineering courses at the 200 level or above, each with a grade of C or higher, in a program approved by the Director of the David Crawford School of Engineering.

Each student's program must include an applied engineering experience (laboratory or practicum session). Prerequisites will be handled on an individual basis. Construction Management majors may elect this minor. Students who are engineering majors may not elect a minor in another engineering discipline.

### Engineering Science Minor

- Each student's program must include an applied engineering experience (laboratory or practicum session). Prerequisites will be handled on an individual basis.
- Construction Management majors may elect this minor.
- Students who are engineering majors may not elect a minor in another engineering discipline.

For a minor in Engineering Science a student must complete six engineering courses at the 200 level or above, each with a grade of C or higher, in a program approved by the Director of the David Crawford School of Engineering.

Choose course from the following Engineering subjects

CE

EE

EG

ME

## English

Professors Helen Caudill, Patricia Ferreira, Andrew Knauf, Daniel Lane, Jonathan Walters; Associate Professors F. Brett Cox, Carl Martin, Kathleen McDonald (Chair), and Lea Williams; Assistant Professors Dalyn Luedtke, Kyle Pivetti, Sean Prentiss, Amy Woodbury Tease; Adjunct Faculty Jeanne Beckwith, Kate Donley, Gina Logan, Eileen Murray, Priscilla Morin Ollier, Robert Piasecki, L. Dan Richards, Melanie Schultz, Karen Stewart.

Courses are offered in literature, theater, and film, which provide a broad humanistic background, and in writing and speech, which provide practical skills. The composition and literature sequence emphasizes writing, reading, and critical thinking skills; students also receive instruction in the forms of discourse and literary genres. The world literature sequence, required of all Bachelor of Arts students, examines world texts in their historical and cultural contexts. A broad range of elective offerings, open to students of all academic disciplines, provides examination of traditional periods and authors as well as emerging literary forms. Specialty courses also include literature of the developing world, of leadership, of American culture and ethnicity, and of the military. A variety of writing courses, both technical and creative, introduces and strengthens rhetorical skill.

Because the English major demands that its students write and speak clearly and precisely about historical and contemporary ideas, it provides a solid basis for many professions and occupations, including law, medicine, teaching, communications, business and government, graduate study, and military service. In addition, many students find that the English major provides excellent preparation for post-graduate study in a variety of fields.

### B.A. in English - Required Courses

Students must complete: The student must earn a grade of C or higher in all of these courses, except EN 101/EN 107 or EN 102/EN 108, in one of which a grade of D may be earned.

EN 101 or EN 107	Composition and Literature I Composition and Literature for Foreign Nationals I	3
EN 102 or EN 108	Composition and Literature II Composition and Literature for Foreign Nationals II	3
EN 201	World Literature I	3
EN 202	World Literature II	3
Minimum of thirteen English courses above EN 202		39

#### Required courses above EN 202:

EN 225	Survey of British Literature I	3
EN 226	Survey of British Literature II	3
EN 227	Survey of American Literature I	3
EN 228	Survey of American Literature II	3
EN 203 or EN 204 or EN 274	Advanced Composition Professional and Technical Writing Introduction to Creative Writing	3



EN 333 or EN 334 or EN 373 Major Author	The Plays of Shakespeare I The Plays of Shakespeare II	3
One course in American Literature EN 390		3
One course in British Literature EN 370		3
EN 450	Senior Seminar	3
Four additional English courses numbered above EN 202, three of which must be above 299.		12

*EN 101* (p. 69) and *EN 102* are prerequisites for all English courses numbered above *EN 200*. Although *EN 101* (p. 69) and *EN 102* (p. 69) are normally taken during the first year, those with satisfactory scores on the Advanced Placement Examination of the College Entrance Examination Board may petition to receive credit or to substitute other courses for the *EN 101/102* requirements.

## Teacher Licensure

English majors may elect to seek licensure by completing education courses and a semester of student teaching as described in the Teacher Education section. Students should begin planning in their freshman year to fit education requirements into their major.

ROTC Courses as required are in addition to the above requirements.

- Please note that EN 450 is usually taught only in the fall semester.
- A student must either pass or receive **department authorized** waiver for both EN 101 or EN 107 and EN 102 or EN 108, before registering for any **English class above EN 112**

## B.A. in English - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
EN 101 Composition and Literature I or 107 Composition and Literature for Foreign Nationals I	3	EN 102 Composition and Literature II or 108 Composition and Literature for Foreign Nationals II	3
CN/FR/GR/SP Modern Foreign Language (Modern Language credit is determined in accordance with department placement.)	6	CN/FR/GR/SP Modern Foreign Language (Modern language credit is determined in accordance with department placement.)	6
HI Elective (excluding HI 209)	3	EC/PY/HI/SO or PO Elective (At least one of these must be in a discipline other than History.	
Elective	3	Elective	3
		Elective	3
	<b>15</b>		<b>15</b>
Second Year			
Fall	Credits	Spring	Credits
EN 201 World Literature I	3	EN 202 World Literature II	3
EN 225 Survey of British Literature I	3	EN 226 Survey of British Literature II	3
EN 282 Literary Methods	3	MA Elective (excluding MA 005, MA 103, MA 160)	3-4
PH/FA/ML/ Elective	3	Elective	3
MA Elective (excluding MA 005, MA 103, MA 160)	3-4	Elective	3
	<b>15-16</b>		<b>15-16</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 227 Survey of American Literature I	3	EN 228 Survey of American Literature II	3
EN 333 The Plays of Shakespeare I or 334 The Plays of Shakespeare II	3	EN 350 History of the English Language	3
or EN 373 Major Author		EN 370 Topics in British Literature	3
EN 390 Topics in American Literature	3	Lab Science Elective	4
Lab Science Elective	4	Elective	3
Elective	3		
	<b>16</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 203 Advanced Composition, 204 Professional and Technical Writing, or 306 Creative Writing	3	EN Elective (above 299)	3
EN 450 Senior Seminar	3	EN Elective (above 299)	3
EN Elective (above EN 202)	3	HI/SO or PO Elective (At least one of the EC/PY/HI/SO/PO electives must be in a discipline other than History (HI)).	3
EN Elective (above EN 299)	3	Elective	3
EC/PY/HI/SO or PO elective (at least one course must be in a discipline other than History.)	3	Elective	3
	<b>15</b>		<b>15</b>
Total Credits: 122-124			

ROTC courses as required are in addition to the above requirements.

## English Minor

Many students who major in disciplines other than English but who share a love and respect for language and literature pursue the academic minor in English. This versatile and popular program encourages students to draw from the department's range of resources in writing, literature, film, and theater, tailoring a program to their special interests. For example, students primarily interested in developing their potential to write well might choose a minor consisting of Advanced Composition, Professional and Technical Writing, Creative Writing, and a course emphasizing the critical analysis of literature. Students who enjoy literature, film, or theater can find ample opportunities among the department's regular offerings to develop competencies in these areas. For the English minor, the student must complete, with a grade of C or higher, six courses:

EN 201	World Literature I	3
EN 202	World Literature II	3
EN 282	Literary Methods	3
Three additional English courses numbered above EN 202, one of which must be above 299.		9
Total Credits		18

## Environmental Science

Charles A. Dana Professor Westerman; Charles A. Dana Professor Dunn (Chair); Assistant Professor Koteas; Lecturer Grigg

Students in the Environmental Science degree program take full advantage of Norwich University's location in the middle of the Green Mountain State, where we are ideally situated for field studies of our natural environment.

The Bachelor of Science in Environmental Science is an interdisciplinary degree for students with environmental interests and career goals. Environmental Science majors start their curriculum with the development of a firm base in the sciences and mathematics. Each student develops an area of specialization by selecting a Concentration from one of two Options. Selection of an Option I Concentration leads to a heavier emphasis in science and engineering, whereas selection of an Option II Concentration results in a stronger emphasis in the social sciences, humanities and business.

The program emphasizes experiential learning through field studies and outdoor education. Courses include real projects and original research participation. The program is enriched through department field trips across New England, eastern Canada, and the western United States. All

Environmental Science majors take a pair of capstone courses involving an original research project and a seminar designed to synthesize their education and tie scientific thought to issues in society.

The Department of Earth and Environmental Sciences is equipped for analysis of ground and surface water, soil, sediment, and rock. Equipment enables terrestrial and lake coring, collection of hydro-geochemical data, determination of sediment characteristics, subsurface studies, and more. In addition, majors have access to facilities in their departments of Concentration.

The ten selected Environmental Science Concentrations provide an education that is rigorous and makes graduates widely marketable within industry, graduate education, and the military.

## B. S. in Environmental Science – Curriculum Map For Those Pursuing Option I

Students electing Environmental Biology, Environmental Chemistry, Environmental Geology, Environmental Engineering, or Climate Science as the Concentration will share a common curriculum as upperclassmen that draws heavily from the sciences. Graduates in this Option will have broad interdisciplinary training with a strong science background. Their strength will be in this breadth as well as in the specific focus in which they concentrate their studies.

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA 107 Precalculus Mathematics	4	MA 108 Applied Calculus <sup>2</sup>	4
BI 101 Principles of Biology I <sup>1</sup>	4	BI 102 Principles of Biology II <sup>1</sup>	4
GL 110 Introduction to Geology	4	GL 111 Oceanography	4
	<b>15</b>		<b>15</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
PH 323 Environmental Ethics (or Arts & Humanities Elective)	3	MA 232 Elementary Statistics	3
ES 251 Sophomores Seminar Environmental Science	1	Concentration Elective	4
Concentration Elective	4	Literature Elective (or ES 130)	3
ES 270 Fundamentals of Environmental Science (or Elective) <sup>3</sup>	4-3	Elective <sup>3</sup>	3-4
	<b>16-15</b>		<b>17-18</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PS 201 General Physics I	4	PS 202 General Physics II	4
EC 201 Principles of Economics (Macro) or 202 Principles of Economics (Micro)	3	ES 130 Introduction to Environmental Law (or Literature Elective)	3
Elective (or ES 270) <sup>3</sup>	3-4	Concentration Elective	3-4
Arts & Humanities Elective (or PH 323)	3	Elective <sup>3</sup>	4-3
Concentration Elective	3-4		
	<b>16-18</b>		<b>14</b>

Fourth Year			
Fall	Credits	Spring	Credits
ES 450 Directed Study in Environmental Science	4	ES 451 Environmental Seminar	3
BI 405 Ecology	4	History Elective <sup>4</sup>	3
GL 255 Hydrogeology	3	Concentration Elective	3-4
Concentration Elective	3-4	Elective <sup>3</sup>	4-3
	<b>14-15</b>		<b>13</b>
Total Credits: 120-123			

1 EnvCH and EnvEG concentrations students take CH 103 and CH 104 as freshmen, and BI 101 and BI 102 in the second year.

2 Or equivalent, especially if needed as a prerequisite for Concentration courses.

3 Can be used out of sequence and to take more than one concentration elective concurrently.

4 Except HI 209 Historical Methods.

## Available Concentrations – Option I

### Environmental Biology

BI 275	Environmental Biology	4
BI 316	Plant Taxonomy	4
or BI 351	Dendrology and Silvics	
BI 326	Natural History of the Vertebrates	4
or BI 424	Woodland Ecology and Management	
BI 220	Introductory Microbiology	4
or BI 240	Environmental and Food Microbiology	
GL 261	Field Geology	4
CH elective: CH204 or above, 3-4 cr. options only		3-4
Total Credits		23-24

### Environmental Geology

GL 253	Geomorphology	4
GL 257	Sedimentation	4
GL 261	Field Geology	4
GL 263	Mineralogy	4
GL 2XX Elective or EG 203 Materials Science		3-4
CH elective: CH204 or above, 3-4 cr. options only		3-4
Total Credits		22-24

### Environmental Chemistry

CH 204	Quantitative Analysis	4
CH 205	Survey of Organic Chemistry	4
GL 263	Mineralogy	4
BI 240	Environmental and Food Microbiology	4
<b>Two of the following:</b>		4-7
GL 261	Field Geology	4
CH 314	Instrumental Methods	3-1
or CH 315	Analysis Laboratory	
EG 203	Materials Science	3
Total Credits		20-23

## Environmental Engineering

EG 109	Introduction to Engineering I	3
CE 211	Surveying	3
EG 203	Materials Science	3
AP 221	Site Development and Design	3
GL 253	Geomorphology	4
<b>One of the following:</b>		<b>3-4</b>
GL 261	Field Geology	4
BI 275	Environmental Biology	4
MA 241	Mathematical Computation and Modeling	3
CH elective: CH 204 or above, 3-4 cr. options only		3-4
Total Credits		19-20

## Climate Science

CH elective: (CH 204 Quant. Analysis recommended) (must be CH 204 or above, 3-4 cr. options only)		3-4
GL 265	Glacial Geology and Paleoclimate	4
GL 253	Geomorphology	4
PS 207	Meteorology and Climatology	4
MA 241	Mathematical Computation and Modeling	3
<b>One of the following:</b>		<b>3</b>
PO 215	International Relations	3
PO 305	Geopolitics (recommended)	3
PO 415	International Law	3
Total Credits		21-22

## For those pursuing Option II

Students pursuing Concentrations in Environmental Policy and Management, Environmental Law and Protection, Environmental Writing, Green Design, or Education share a curriculum during their last three years that has a strong emphasis on social sciences, business, and humanities with less emphasis in the pure sciences. These students will be prepared to enter careers in which social responsibility toward the environment is emphasized.

First Year			
Fall	Credits	Spring	Credits
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA 107 Precalculus Mathematics	4	MA 108 Applied Calculus	4
BI 101 Principles of Biology I	4	BI 102 Principles of Biology II	4
GL 110 Introduction to Geology	4	GL 111 Oceanography	4
	<b>15</b>		<b>15</b>
Second Year			
Fall	Credits	Spring	Credits
PH 323 Environmental Ethics or EN 203 Advanced Composition	3	PY 211 Introduction to Psychology	3
ES 251 Sophomores Seminar Environmental Science	1	Literature Elective (or ES 130)	3
PO Elective 1 <sup>1</sup>	3	PO Elective 2 <sup>1</sup>	3
Concentration Elective	4-3	MA 232 Elementary Statistics	3
ES 270 Fundamentals of Environmental Science (or EC 201 or EC 202)	3-4	Concentration Elective	3-4
	<b>14</b>		<b>15-16</b>



<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH XXX Chemistry Elective	4	GL 253 Geomorphology (or Elective) <sup>2</sup>	4-3
EC 201 Principles of Economics (Macro), 202 Principles of Economics (Micro), or ES 270 Fundamentals of Environmental Science	3-4	ES 130 Introduction to Environmental Law (or Literature Elective)	3
SO 201 Introduction to Sociology	3	Concentration Elective	3
EN 203 Advanced Composition or PH 323 Environmental Ethics	3	History Elective <sup>3</sup>	3
Concentration Elective	3	Elective <sup>2</sup>	3-4
	<b>16-17</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
ES 450 Directed Study in Environmental Science	4	ES 451 Environmental Seminar	3
BI 405 Ecology	4	Concentration Elective	3
Concentration Elective	3	Elective (or GL 253) <sup>2</sup>	3-4
Arts & Humanities Elective	3	Elective <sup>2</sup>	3-4
		Elective <sup>2</sup>	3-4
	<b>14</b>		<b>15-18</b>
Total Credits: 120-125			

<sup>1</sup> Selected from PO 105 American Politics, PO 215 International Relations and PO 305 Geopolitics; Green Design concentration students take EG 109 Introduction to Engineering I and EG 110 Introduction to Engineering II.

<sup>2</sup> Can be used out of sequence and to take more than on concentration elective concurrently.

<sup>3</sup> Except HI 209 Historical Methods.

## Available Concentrations – Option II

### Environmental Policy and Management

MG 101	Introduction to Business	3
IS 120	Business Applications & Problem Solving Techniques	3
PO 314	The Legislative Process	3
PO 321	U.S. Constitutional Law	3
MG 309	Management of Organizations	3
MG 341	Business Law I	3
Total Credits		18

### Environmental Law and Protection

CJ 101	Introduction to Criminal Justice	3
CJ 102	Substantive Criminal Law	3
CJ 402	Law and Society	3
<b>Two of the following three:</b>		<b>6</b>
PO 321	U.S. Constitutional Law	3
PO 314	The Legislative Process	3
PO 331	State and Local Politics	3
SO 202	Problems of Modern Society	3
Total Credits		18

## Environmental Writing

EN Elective <sup>1</sup>		3
EN 251	Literature of the Sea	3
EN 320	Literature of the Developing World	3
EN 274	Introduction to Creative Writing	3
CM 109	Introduction to Mass Media	3
CM 209	Broadcast Writing	3
Total Credits		18

<sup>1</sup> English elective approved by the Environmental Science Program.

## Green Design

AP 111	Fundamentals of Architecture	4
AP 118	Fundamentals of Architecture II	4
AP 221	Site Development and Design	3
AP 225	Introduction to Passive Environmental Systems	3
AP 325	Materials, Construction, and Design	3
<b>One of the following three:</b>		3
FA 201	History/Theory of Architecture I	3
FA 202	History/Theory of Architecture II	3
FA 308	History/Theory of Architectural III	3
Total Credits		20

## Education <sup>1</sup>

PY 220	Developmental Psychology	3
ED 234	Learning and Teaching Strategies	4
ED 315	Special Needs Child	3
ED 351	Methods of Teaching Science to Elementary Students	3
ED 360	Language Arts and Teaching Reading in the Elementary School	4
MA 360	Teaching Mathematics at the Elementary - Middle School Level	3
Total Credits		20

<sup>1</sup> For Education concentration students seeking licensure, electives must be used to take PY 352 Learning and Memory and ED 425 Student Teaching, and ED 104 Foundations of Education must be taken as an overload.

## Finance

Charles A. Dana Professor Puddicombe; Professors Kabay and Mohagheh; Associate Professors Benabess, Blythe, Jolley and Yandow; Assistant Professor Chung; Lecturer Pomeroy; Adjunct Instructors Alcorn, Faulkner, Fogg, Merolli, Rowley, Seipel and Verret.

Students seeking a minor in Finance must obtain the approval of the School Director and complete each of the required courses with a grade of C or higher.

### Finance Minor

Students must complete all of the six courses listed below, each with a grade of C or higher.

FN 311	Corporate Finance	3
FN 407	Corporate Finance II	3
FN 412	Investments	3
EC 310	Money and Banking	3
<b>Any two of the following:</b>		6
AC 335	Intermediate Accounting I	3

AC 336	Intermediate Accounting II	3
AC 419	Taxation I	3
AC 442	Advanced Accounting	4
EC 406	Public Finance	3
EC 419	International Economics	3
MG 319	International Dimensions of Business	3
Total Credits		18

## Financial Economics Concentration--Management Major

Charles A. Dana Professor Puddicombe; Professors Kabay and Mohaghegh; Associate Professors Benabess, Blythe, Jolley and Yandow; Assistant Professor Chung; Lecturer Pomeroy; Adjunct Instructors Alcorn, Faulkner, Fogg, Merolli, Rowley, Seipel and Verret.

The offering of Bachelor of Science in Management with a concentration in Financial Economics at Norwich has stemmed from managers' increasing awareness that applied economic analysis can provide assistance in planning, decision making, and problem solving. The business cycle, globalization, fiscal, monetary and trade policies of government can have a major impact on the functioning of any organization. Financial economists are able to analyze these developments in terms of their probable impact on demand for commodities, prices, costs of production, competitive pressures, financial conditions and other important matters.

Economic analysis also influences decisions in diverse areas such as health-care services, the use of natural resources and other social and environmental issues. In fact, there may not be a policy decision that cannot be analyzed by using economic methodology. Students in this concentration should expect employment as analysts and managers in legal and financial services as well as government organizations.

### Financial Economics Concentration Courses

EC 419	International Economics	3
FN 407	Corporate Finance II	3
FN 412	Investments	3
QM 370	Quantitative Methods for Marketing & Finance	3
Major/Concentration Elective		
Major/Concentration Elective		

### Major/Concentration Electives -- Choose two from the following list:

AC		
MG		
IS		
EC		
FN		
QM		
CP		
MA 240	Introduction to Number Theory and Cryptology	3
MA 318	Cryptology	3
MA 370	Introduction to Operations Research	3
CJ 341	Cyber Law and Cyber Crime	3
CJ 442	Introduction to Computer Forensics	4
PY 210	Psychology of Leadership	3
AS 311	Air Force Leadership Studies	3
AS 312	Air Force Leadership Studies	3
AS 411	National Security Affairs/Preparation for Active Duty	3
AS 412	National Security Affairs/Preparation for Active Duty	3
MS 311	Military Science III	3
MS 312	Military Science III	3
MS 411	Military Science IV	3
MS 412	Military Science IV	3
NS 321	Naval Ship Systems I	3
NS 342	Small Unit Leadership Skills	2

NS 421	Naval Operations and Seamanship	3
NS 422	Leadership and Ethics	3
Modern Foreign Languages		

## French

Professor Frances Chevalier (Program Director and Department Chair), Adjunct Faculty Priscilla Morin Ollier.

The French program at Norwich is designed to give students a thorough mastery of speaking, aural comprehension, and reading and writing skills in French and to produce cultural literacy in the fascinating and complex francophone world. Norwich maintains a student exchange program with the renowned French military academy, l'Ecole Speciale Militaire de Saint-Cyr. Both civilian and corps students with a distinguished GPA and advanced proficiency in French may apply to participate in the program.

### French Minor

Consists of six courses completed with a grade of C or higher.

FR 205	Intermediate French I	3
FR 206	Intermediate French II	3
Four additional courses numbered FR 311 or higher		12
Total Credits		18

## Geology

Charles A. Dana Professor Westerman; Charles A. Dana Professor Dunn (Chair); Assistant Professor Koteas; Lecturer Grigg

Norwich University, in the middle of the Green Mountain State, is ideally situated for direct and field intensive studies of our natural environment. The Bachelor of Science in Geology degree program is designed to take advantage of our physical location. Courses are presented by faculty who are both respected teachers and active researchers in New England, Europe, and the western U.S.

The Geology degree provides a broad background in the physical sciences with a strong focus on geology and its pivotal role in understanding our environment. In addition, students often use free electives to develop an additional specialization. Graduates in Geology are prepared for a variety of possible careers in industry, consulting, state and federal surveys, the military, and teaching, or to enter graduate school.

The program emphasizes experiential learning through field studies and outdoor education. Courses include real projects and original research participation. The program is enriched through department field trips across New England, eastern Canada, and the western United States. All Geology majors take a pair of capstone courses involving an original research project and a seminar designed to synthesize their education and tie scientific thought to issues in society.

The department is equipped for analysis of ground and surface water, soil, sediment, and rock. Equipment enables terrestrial and lake coring, collection of hydro-geochemical data, determination of sediment characteristics, subsurface studies, geological mapping, and more.

Analytical tools include X-ray diffractometer, scanning electron microscope, and inductively coupled plasma spectrophotometer. We also have a range of geophysical exploration equipment, including a gravity meter, seismograph, magnetometer, and ground penetrating radar.

All Geology courses except GL 251, GL 260, GL 450, and GL 451 are designed to meet the General Education requirements by providing a basic level of literacy in current scientific knowledge and theories, and developing an appreciation of the natural world.

### B. S. in Geology – Curriculum Map

First Year			
Fall	Credits	Spring	Credits
GL 110 Introduction to Geology	4	GL 156 Introduction to Earth Evolution	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA 107 Precalculus Mathematics	4	MA 108 Applied Calculus	4
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
	<b>15</b>		<b>15</b>

<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
GL 2XX Elective <sup>1</sup>	4	GL 2XX Elective <sup>1</sup>	4
EN 201 World Literature I	3	EN 202 World Literature II	3
PS 201 General Physics I	4	PS 202 General Physics II	4
Social Science Elective	3	Arts & Humanities Elective	3
Elective	3-4	Elective	3-4
GL 251 Sophomore Seminar in Geology	1		
	<b>18-19</b>		<b>17-18</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
GL 2XX Elective <sup>1</sup>	4	GL 2XX Elective <sup>1</sup>	3-4
Tech Elective <sup>2</sup>	3-4	Tech Elective <sup>2</sup>	3-4
History Elective <sup>3</sup>	3	Ethics Elective <sup>4</sup>	3
MA 232 Elementary Statistics	3	Elective	3-4
Elective	3-4	Elective	3-4
	<b>16-18</b>		<b>15-19</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
GL 2XX Elective <sup>1</sup>	3-4	GL 2XX Elective <sup>1</sup>	4
GL 450 Directed Study in Geology	4	GL 451 Geology Seminar	3
Tech Elective <sup>2</sup>	3-4	Tech Elective <sup>2</sup>	3-4
Elective	3-4	Elective	3-4
Elective	3-4	Elective	3-4
	<b>16-20</b>		<b>16-19</b>
Total Credits: 128-143			

<sup>1</sup> These six electives must include Sedimentation (GL 257), Structural Geology (GL 262), and Mineralogy (GL 263).

<sup>2</sup> Technical Electives for this degree include Science, Mathematics (above MA 103 College Algebra I), Engineering or Information Systems (above IS 120 Business Applications & Problem Solving Techniques) courses.

<sup>3</sup> Except HI 209 Historical Methods.

<sup>4</sup> PH 323 Environmental Ethics strongly recommended.

## Geology Minor

Students must complete six geology courses with at least four at the 200 level or higher.

18-24

## German

Professor David Ward (Program Director); Adjunct Faculty Trina Young.

The German program at Norwich is designed to give students a thorough mastery of speaking, aural comprehension, and reading and writing skills in German and a solid background in German literature and culture. Norwich maintains a student exchange program with the German military university, die Universität der Bundeswehr. Both civilian and corps students with a distinguished GPA and advanced proficiency in German may apply to participate in the program.

### German Minor

Consists of six courses completed with a grade of C or higher.

GR 205	Intermediate German I	3
GR 206	Intermediate German II	3
Four additional courses numbered GR 321 or higher		12
Total Credits		18

## Physical Education--Health

Program Coordinator: Elizabeth Wuorinen

Associate Professor Elizabeth Wuorinen, Assistant Professor Thomas Roberge, Instructor Tanjian Liang

### Minor in Physical Education: Health

Physical Education majors can declare a Concentration in Health.

This concentration or minor is designed to add depth and breadth to a student's education in health and wellness, develop healthy lifelong patterns, and increase the marketability of graduates. Students must complete:

All courses must be passed with a grade of C or higher.

### Licensure in Health Education

Physical Education majors seeking Licensure in Health Education must take:

#### Health Minor

PE 161	Physical Fitness & Wellness Assessment	3
PE 260	Personal and Community Health	3
BI 253	Foods and Nutrition	4
<b>Select three of the following:</b>		<b>9-12</b>
BI 220	Introductory Microbiology	4
BI 240	Environmental and Food Microbiology	4
BI 330	Immunology	4
BI 364	Pathophysiology in Sports Medicine	4
PE 261	Foundations in Health Education	4
PE 365	Kinesiology	4
PE 371	Physiology of Exercise	4
SM 220	Care and Prevention of Athletic Injuries	4
SO 320	Drugs and Society	3
PY 211	Introduction to Psychology	3
PY 220	Developmental Psychology	3
PY 324	Adolescent Psychology	3-4
Total Credits		19-22

## History

Program Coordinator: Emily Gray

Charles A. Dana Professors Gary Lord and Reina Pennington; Professors Rowland Brucken, Christine McCann, and Thomas Taylor; Associate Professors Emily Gray and Steven Sodergren; Assistant Professor Miri Kim; Adjunct Faculty Raymond Zirblis.

It is the mission of the History Department to instill and foster, in the spirit of free inquiry and intellectual exchange: 1) An understanding of the influence of political, economic, social and cultural forces on past and contemporary events; institutions and peoples; 2) The critical skills necessary to research and create substantive papers and oral presentations; 3) The ability to comprehend, compare, and evaluate competing explanations of past and present subjects, using reason and evidence to guide such inquiry; 4) The opportunity to experience learning outside of the classroom through internships, independent study, study abroad programs and participation in academic clubs and honor societies; and 5) The values, ethics and reasoned judgment necessary to be active, compassionate and useful citizens of the local community, nation and the world.

### Honors in History

Students with a grade point average of 3.0 or better, and who meet all university and departmental curricular requirements, and have grades averaging 3.2 or better in courses in their major will be, at the end of their junior year, eligible to become candidates for the history or political science major with honors. Students who have not met these standards may be invited to candidacy by the department. Six hours of credit will be assigned, normally



three hours each semester. A successful defense of an honors paper must be conducted and a minimum grade of 3.5 must be earned for the student's registration in an Honors Course to appear on the transcript. For further guidance, see the History and Political Science Department's Honors Thesis Guidelines.

## Pre-Law Training

The Association of American Law Schools identifies the following as the major objectives to be sought in an undergraduate pre-law curriculum:

1. comprehension and expression in words;
2. critical understanding of the human institutions and values with which the law deals;
3. creative power in thinking.

These goals can best be approached by an undergraduate curriculum in which the social sciences and English play the leading part. One of the leading American law schools advises college students preparing to study law: "The importance of history in a pre-legal program cannot be over emphasized"; and of political science: "This subject also is one with which the lawyer must be well-acquainted and it, too, is a natural college major for pre-law students." Accounting (for which mathematics is a prerequisite) is also strongly recommended by law schools.

## Requirements for History Major

History majors must complete at least 36 credits in History (HI) and PO 202 and PO 105 with a grade of "C", or higher. All history majors are required to complete 12 History courses including the distribution requirements and HI 121 or HI 122; HI 209, HI 3XX Colloquium in History (see Course Selections (p.      )), Capstone Seminar, HI 430, HI 431 , HI 432, or HI 433 with a grade of "C" or higher. (HI 430 HI 431, HI 432, and HI 433 may count in the distribution requirements.) History majors may not count more than five 100 and 200 level courses, including HI 209 – Historical Methods – towards their major. Additionally, majors are required to pass EC 201 or EC 202.

## Distribution area requirements

Courses taken to meet the distribution area requirements must be numbered 300 or higher.

United States - 1 course  
 Modern European – 1 course  
 Pre-Modern (prior to 1600 C.E.) - 1 course  
 Non-Western – 1 course

## B.A. in History – Curriculum Map

First Year			
Fall	Credits	Spring	Credits
HI 1XX or Higher	3	Modern Language	6
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
PO 105 American Politics	3	Elective	3
Modern Language	6	HI 121 American History Survey I or 122 American History Survey II	3
	<b>15</b>		<b>15</b>
Second Year			
Fall	Credits	Spring	Credits
HI 2XX or higher	3	EN 202 World Literature II	3
EN 201 World Literature I	3	Math Elective (except MA 103)	3
Math Elective (except MA 103)	3	HI 2XX or higher	3
HI 209 Historical Methods	3	PO 202 Introduction to Comparative Politics	3
Arts or Humanities Elective	3	Arts or Humanities Elective	3
	<b>15</b>		<b>15</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EC 201 Principles of Economics (Macro) or 202 Principles of Economics (Micro)	3	HI 3XX History Elective	3
HI 3XX History Colloquium (HI 303, 304, 319, 322, 333, 335, 340, 345, 355)	3	Arts or Humanities Elective	3
HI 3XX History Elective	3	Lab Science Elective	4
PH Ethics Elective	3	Elective	3
Lab Science Elective	4	HI 3XX History Elective	3
	<b>16</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
HI 43X Capstone Seminar	3	HI 3XX	3
HI 3XX	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	<b>15</b>		<b>15</b>
Total Credits: 122			

## Course Prerequisites

100 level open to Freshmen only, except by permission of department chair.

200 level not open to Freshmen without instructor's permission.

300 level for mainly Juniors and Seniors, need to have completed a 200-level History course with a grade of C or higher, otherwise by written permission of instructor.

400 level open only by permission.

## History Minor

For the History minor, the student must complete, with a grade of C or higher, six history courses (HI), at least two of which must be 300 level courses, one of the 300 level courses must be a colloquium.

HI 2XX	3
HI Elecive	3
HI Elective	3
HI Elective	3
HI Elective	3
History Colloquium	3
<b>Total Credits</b>	<b>18</b>

## Health Sciences

- [Catalog Home >](#)
- [Residential Programs Catalog \(p. 3\) >](#)
- [College of Science and Mathematics](#)

Associate Professor Eduardo Hernandez, ATC (Chair) ; Lecturer and Program Director James Murdock, ATC ; Lecturer and Clinical Coordinator Jennie Kruger, ATC .and Lecturer Gregory Jancaitis, ATC

Health Sciences program at Norwich University is in the Department of Sports Medicine. The Health Sciences program provides students an in-depth science background, and an introduction to the health care field.

A core curriculum through freshman and sophomore years provides the students with a sound understanding of liberal arts, biology, chemistry, mathematics, physics, assessment, care and prevention.

The Health Science program incorporates hands-on experience in professional settings, with opportunities for internships and other community based learning.

The Health Sciences program prepares students to meet the entrance requirements of graduate programs in areas such as physical therapy, occupational therapy, physician's assistant, medicine, public health, exercise sciences, biomechanics, and hospital administration.

§ Courses must be taken in order presented and passed with a grade of "C" or higher before progressing in the program.

## B.S. in Health Sciences - Curriculum Map

SM 426 (<https://currentcatalog.norwich.edu/residentialprogramscatalog/collegeofscienceandmathematics/athletictrainingandsportsmedicine>) Internship may be taken by qualified students during the junior or senior year in place of two or four free electives.

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI 101 Principles of Biology I	4	EN 102 Composition and Literature II	3
EN 101 Composition and Literature I	3	MA 107 Precalculus Mathematics	4
MA 232 Elementary Statistics	3	BI 102 Principles of Biology II	4
SM 136 Emergency Care, Injury/Illness <sup>§</sup>	3	SM 139 Health Science Research Methods <sup>§</sup>	2
SM 138 Introduction to Sports Medicine <sup>§</sup>	3	PE 161 Physical Fitness & Wellness Assessment <sup>§</sup>	3
	<b>16</b>		<b>16</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI 215 Human Anatomy and Physiology <sup>§</sup>	4	BI 216 Human Anatomy and Physiology <sup>§</sup>	4
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
PY 211 Introduction to Psychology	3	SM 210 Assessment of Injury and Illness <sup>§</sup>	4
PE 260 Personal and Community Health <sup>§</sup>	3	SM 220 Care and Prevention of Athletic Injuries <sup>§</sup>	4
Literature Elective	3		
	<b>17</b>		<b>16</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PE 365 Kinesiology <sup>§</sup>	4	PE 371 Physiology of Exercise <sup>§</sup>	4
SM 420 Therapeutic Modalities <sup>§</sup>	4	PS 202 General Physics II	4
BI 364 Pathophysiology in Sports Medicine (or Biology Elective)	4	Free Elective	3-4
PS 201 General Physics I	4	SM 422 Therapeutic Exercise <sup>§</sup>	4
		CH 205 Survey of Organic Chemistry (or Free Elective)	4
	<b>16</b>		<b>19-20</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI 364 Pathophysiology in Sports Medicine (or Biology Elective)	3-4	SM 440 Evidence-Based Sports Med <sup>§</sup>	3
SM 439 Leadership & Management in Sports Medicine	3	CH 205 Survey of Organic Chemistry (or Free Elective)	3-4
History Elective	3	Humanities Elective	3
Free Elective	3-4	Free Elective	3-4
Free Elective	3-4	Free Elective <sup>§</sup>	3-4
	<b>15-18</b>		<b>15-18</b>
Total Credits: 130-137			

## Information Assurance

Professor Kabay; Associate Professors Blythe and Stephenson; Assistant Professor Hansen; Lecturers Almagambetov and Bovee; Adjunct Instructor Rowley.

Students seeking a minor in Information Assurance must obtain the approval of the School Director and complete each of the required courses with a grade of C or higher.

### Information Assurance Minor

Students must complete all of the six courses listed below, each with a grade of C or higher.

IS 340	Information Systems Security Assurance I	3
IS 342	Management of Information Assurance	3
IS 460	Data Communications and Networks (changing to IS 260)	3
CJ 442	Introduction to Computer Forensics	4
IS 406	Special Topics in Computer Science <sup>1</sup>	3
CP 337 Operating Systems		3
Total Credits		19

<sup>1</sup> The required course is IS406 Special Topics in Computer Science: Network Security.

## International Studies

Program Coordinator: Yangmo Ku

This multidisciplinary program is for students desiring a flexible curriculum with an international focus. Students take courses in International Studies, Political Science, History, Economics, and Modern Languages. This program provides a solid basis for graduate studies or careers in government service, international agencies, multinational corporations, non-profit organizations, law, or the military.

### Honors in History or Political Science

International Studies majors are eligible for Honors in History or Honors in Political Science as seniors if they meet departmental prerequisites.

### Program Requirements

In addition to the Bachelor of Arts and General Education requirements, all International Studies (IS) majors are required to complete:

IN 101	Introduction to International Studies	3
IN 410	Seminar in International Studies	3
PO 105	American Politics	3
PO 202	Introduction to Comparative Politics	3
PO 215	International Relations	3
HI 108	The History of Civilization II	3
EC 201	Principles of Economics (Macro)	3
EC 202	Principles of Economics (Micro)	3
Two history electives		6
EC 419	International Economics	3

IS majors must select also four Area Studies courses, two in political science and two in history. The political science options are: PO 310, PO 320, PO 340, and PO 348. The history options include any history course in this catalogue designated as European or Non-Western, as well as HI 338 and HI 339 (U.S. Diplomatic History).

International Studies [IS] students must spend at least one semester in a study abroad program (normally in the junior or senior year), and take all courses abroad in a foreign language studied at Norwich, with the exception of Chinese where content courses can be taken in English. Study abroad can also include a pre-approved credit-bearing internship.

At least one of their 300 level modern language courses will be taken abroad and transferred to Norwich.

IS students must have a minimum cumulative 2.50 GPA at the end of their Sophomore year, and maintain that average or higher through the time of their application for study abroad.

The study abroad requirement must be fulfilled prior to taking IN 410, the International Studies Senior Seminar capstone course.

Student will be required to leave the IS program if they fail to have the minimum cumulative 2.50 GPA at the end of their sophomore year. A decision to require a student to leave the IS program shall be made by a majority vote of the IS Faculty Advisory Board with the concurrence of the History and Political Science Department Chair. The student must then find another major if he/she wishes to remain at Norwich University.

Exceptions to any of these provisions may be petitioned to and approved by a majority vote of the IS Faculty Advisory Board. The decision of the Board may be appealed to the Dean of the College of Liberal Arts and the Committee on Academic Standing and Degrees. The final decision shall be communicated to the Office of the Registrar.

International students in the IS program have the option to pursue a program of study specifically designed for them; this option can include an off-campus experience within the U.S. (e.g. Washington, DC Semester program).

For an IS major to graduate, the following courses must be completed with a grade of C or higher: IN 101, IN 410, PO 105, PO 202, PO 215, Modern Language 205 and 206, EC 201, EC 202.

## B.A. International Studies - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
HI 108 The History of Civilization II	3	PO 105 American Politics	3
IN 101 Introduction to International Studies	3	Modern Language 112 (Languages other than Chinese, French, Spanish, or German may be used to satisfy the language requirement with the approval of the Modern Languages Department. To satisfy the study abroad requirement, students will study in a Chinese, French, Spanish, or German speaking country unless a substitute language has been approved by the Modern Languages Department.)	6
Modern Language 111 (Languages other than Chinese, French, Spanish, or German may be used to satisfy the language requirement with the approval of the Modern Languages Department. To satisfy the study abroad requirement, students will study in a Chinese, French, Spanish, or German speaking country unless a substitute language has been approved by the Modern Languages Department.)	6	Math Elective	3
	<b>15</b>		<b>15</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 201 World Literature I	3	EN 202 World Literature II	3
EC 201 Principles of Economics (Macro)	3	EC 202 Principles of Economics (Micro)	3
Modern Language 205 (Languages other than Chinese, French, Spanish, or German may be used to satisfy the language requirement with the approval of the Modern Languages Department. To satisfy the study abroad requirement, students will study in a Chinese, French, Spanish, or German speaking country unless a substitute language has been approved by the Modern Languages Department.)	3	Modern Language 206 (Languages other than Chinese, French, Spanish, or German may be used to satisfy the language requirement with the approval of the Modern Languages Department. To satisfy the study abroad requirement, students will study in a Chinese, French, Spanish, or German speaking country unless a substitute language has been approved by the Modern Languages Department.)	3
Math Elective	3	PH Elective (Must satisfy the General Education ethics requirement.)	3
PO 215 International Relations	3	PO 202 Introduction to Comparative Politics	3
	<b>15</b>		<b>15</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
Study Abroad		Humanities Elective	3
Elective	3	COMP. PO./Hist. Elective (Comparative Politics or History Elective chosen as follows: two courses from PO 310, PO 320, PO 340, or PO 348 and two History courses at the 200-level (HI 201, HI 202, HI 211, HI 212, HI 214, HI 218, HI 223, HI 224, HI 227, HI 235, or HI 236) and two History courses at the 300-level (HI 303, HI 304, HI 315, HI 317, HI 319, HI 321, HI 322, HI 326, HI 329, HI 338, HI 339, HI 371, HI 372, and HI 373.)	3
Elective	3	Lab Science	4
Elective	3	Modern Language (300 level)( Languages other than Chinese, French, Spanish, or German may be used to satisfy the language requirement with the approval of the Modern Languages Department. To satisfy the study abroad requirement, students will study in a Chinese, French, Spanish, or German speaking country unless a substitute language has been approved by the Modern Languages Department.)	3
Modern Language (300 level) (Languages other than Chinese, French, Spanish, or German may be used to satisfy the language requirement with the approval of the Modern Languages Department. To satisfy the study abroad requirement, students will study in a Chinese, French, Spanish, or German speaking country unless a substitute language has been approved by the Modern Languages Department.)	3	Elective	3
Elective	3		
	<b>15</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
Humanities Elective	3	Humanities Elective	3
EC 419 International Economics	3	Elective	3
Lab Science	4	History Elective	3
COMP. PO./Hist. Elective (Comparative Politics or History Elective chosen as follows: two courses from PO 310, PO 320, PO 340, or PO 348 and two History courses at the 200-level (HI 201, HI 202, HI 211, HI 212, HI 214, HI 218, HI 223, HI 224, HI 227, HI 235, or HI 236) and two History courses at the 300-level (HI 303, HI 304, HI 315, HI 317, HI 319, HI 321, HI 322, HI 326, HI 329, HI 338, HI 339, HI 371, HI 372, and HI 373.)	3	COMP. PO./Hist Elective (Comparative Politics or History Elective chosen as follows: two courses from PO 310, PO 320, PO 340, or PO 348 and two History courses at the 200-level (HI 201, HI 202, HI 211, HI 212, HI 214, HI 218, HI 223, HI 224, HI 227, HI 235, or HI 236) and two History courses at the 300-level (HI 303, HI 304, HI 315, HI 317, HI 319, HI 321, HI 322, HI 326, HI 329, HI 338, HI 339, HI 371, HI 372, and HI 373.)	3
COMP. PO./Hist. Elective (Comparative Politics or History Elective chosen as follows: two courses from PO 310, PO 320, PO 340, or PO 348 and two History courses at the 200-level (HI 201, HI 202, HI 211, HI 212, HI 214, HI 218, HI 223, HI 224, HI 227, HI 235, or HI 236) and two History courses at the 300-level (HI 303, HI 304, HI 315, HI 317, HI 319, HI 321, HI 322, HI 326, HI 329, HI 338, HI 339, HI 371, HI 372, and HI 373.)	3	IN 410 Seminar in International Studies	3
	<b>16</b>		<b>15</b>
Total Credits: 122			



## Leadership Concentration--Management Major

Charles A. Dana Professor Puddicombe; Professors Kabay and Mohaghegh; Associate Professors Benabess, Blythe, Jolley and Yandow; Assistant Professor Chung; Lecturer Pomeroy; Adjunct Instructors Alcorn, Faulkner, Fogg, Merolli, Rowley, Seipel and Verret.

The Bachelor of Science in Management with a concentration in Leadership is a program that enacts the Guiding Values of Norwich University. "We are dedicated to learning, emphasizing teamwork, leadership, creativity, and critical thinking." The program, while centered in the School of Business and Management, draws from humanities and psychology to produce graduates who meet societies pressing need for leaders. Graduates will understand not only the role of the leader but, also just as important, the role of those who are led. In today's increasingly complex world one can neither go it alone nor lead by fiat. Successful managers must understand the complex requirements of people and organizations. Regardless of whether the student is planning to enter the civilian or the military world, the concentration in leadership will give the students the tools to succeed.

### Leadership Concentration Courses

PY 210	Psychology of Leadership	3
MG 351	Organizational Behavior	3
MG 408	Human Resources Management	3
MG 409	Organizational Leadership	3
<b>Major/Concentration-Leadership Electives - Choose two of the following</b>		<b>5-6</b>
CM 436	Communications Law and Ethics	3
EG 450	Professional Issues	3
EN 244	The Literature of Leadership	3
PH 303	Survey of Ethics	3
PH 305	Foundations of Western Thought II: The Middle Ages	3
PH 324	Criminal Justice Ethics	3
PH 350	Medical Ethics	3
PO 303	Political Philosophy	3
AS 311	Air Force Leadership Studies	3
AS 312	Air Force Leadership Studies	3
AS 411	National Security Affairs/Preparation for Active Duty	3
AS 412	National Security Affairs/Preparation for Active Duty	3
MS 311	Military Science III	3
MS 312	Military Science III	3
MS 411	Military Science IV	3
MS 412	Military Science IV	3
NS 321	Naval Ship Systems I	3
NS 342	Small Unit Leadership Skills	2
NS 421	Naval Operations and Seamanship	3
NS 422	Leadership and Ethics	3
Total Credits		17-18

### Leadership Minor

The Leadership Minor is a multidisciplinary opportunity for interested students to expand their knowledge and experience in leadership via an informally guided, multidisciplinary journey of academic exploration and discovery that builds on the premise that leadership development is a core mission of Norwich University. The minor will focus on building an understanding of self and others as members of teams. Taken as a whole the minor will enhance development of knowledge and skills essential in the 21st century including the role of the team member, teamwork, critical thinking, ethical decision making, mental agility, communications (both oral and written), planning, self-awareness including self-assessment, self-reflection and self-regulation, and reflection on ethical standards of conduct in the professional world.

- The NU Leadership minor is open to students of all academic majors.
- All minor courses must be completed with a grade of C or higher to earn the minor.
- It is most beneficial if the student selects the minor prior to the start of her or his junior year to allow maximum time for personal assessment, reflection, growth and development.
- All students in the minor will have the opportunity for informal coaching and mentoring by a member of the multidisciplinary Leadership Minor Committee and will have the opportunity to attend and participate in optional leadership development activities.

MG 351	Organizational Behavior	3
PY 210	Psychology of Leadership	3
<b>Minor-Ethics Elective <sup>1</sup></b>		<b>3</b>
<b>Minor Elective Courses: choose two of the following: <sup>2</sup></b>		<b>6</b>
AP 222	Human Issues in Design	3
CM 261	Interpersonal Communications	3
EN 112	Public Speaking	3
EN 244	The Literature of Leadership	3
MG 309	Management of Organizations	3
PH 340	Philosophy of Non-Violence	3
PO 312	The Presidency	3
PY 211	Introduction to Psychology	3
PY 236	Cross-Cultural Psychology	3
PY 240	Introduction to Social Psychology	3
SO 201	Introduction to Sociology	3
SO 202	Problems of Modern Society	3
AS 311	Air Force Leadership Studies	3
AS 312	Air Force Leadership Studies	3
MS 311	Military Science III	3
MS 312	Military Science III	3
NS 221	Leadership and Management	3
<b>Minor-Integrating Experience Elective: choose one of the following:</b>		<b>3</b>
MG 409	Organizational Leadership	3
EG 450	Professional Issues	3
NR 404	Nursing Leadership	3
SM 439	Leadership & Management in Sports Medicine	3
AS 412	National Security Affairs/Preparation for Active Duty	3
MS 411	Military Science IV	3
MS 412	Military Science IV	3
NS 422	Leadership and Ethics	3
Total Credits		18

<sup>1</sup> Any course meeting the NU General Education Ethics Requirement

<sup>2</sup> The two courses selected must be from two different disciplines outside of the student's major.

## Management

Charles A. Dana Professor Puddicombe; Professors Kabay and Mohaghegh; Associate Professors Benabess, Blythe, Jolley, Stephenson, and Yandow; Assistant Professors Chung, Hansen; Lecturers Almagambetov, Bovee, and Pomeroy; Adjunct Instructors Alcorn, Faulkner, Fogg, Merolli, Rowley, Seipel, and Verret.

The Management program focuses on the management functions: planning, organization, leadership and control. Our students will integrate knowledge from other disciplines within the school (accounting, economics and computer information systems), to enter into organizations with both a functional and an enterprise perspective.

The Management program is directed toward instilling in each student the ability to identify opportunities, define objectives, organize information, utilize scarce resources, and evaluate results. The breadth of required courses and the opportunity to pursue a number of elective courses in such fields as organizational behavior, information systems, marketing, economics, human resources, and finance enables the student to match his or her interests with degree requirements.

This relatively flexible program is particularly suited to preparing students for leadership and management positions in for-profit and not-for-profit businesses, governmental organizations, and military organizations. It can be tailored to provide an excellent educational base for budding entrepreneurs planning to start their own businesses, for students who will take on managerial responsibilities in a family, for those aspiring to succeed in the corporate world, for young men and women seeking the combination of leadership and management skills necessary for a successful military career, as well as preparation for the management challenges inherent in the international arena and in the growing services industry.

This degree requires a base of study in the Liberal Arts, Mathematics, the Sciences, Information Systems, and Economics, and also provides flexibility for specialized study in such fields as Computer Information Systems, Leadership, Financial Economics, Marketing, and Sports Management. Norwich management students benefit from a unique leadership laboratory and are offered the opportunity for summer internships in a wide variety of organizations.

During the spring semester of their sophomore year, management majors will be required to select a concentration. Management majors will have the option to choose from one of four concentrations: Computer Information Systems (p. 54), Financial Economics (p. 77), Leadership (p. 87), Marketing (p. 90), or Sports Management (p. 113).

## B.S. in Management - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	EC 106 The Structure and Operation of the World Economy <sup>1</sup>	3
IS 120 Business Applications & Problem Solving Techniques	3	General Education-Lab Science Elective 1	4
MG 101 Introduction to Business <sup>1</sup>	3	MA 108 Applied Calculus	4
MA 107 Precalculus Mathematics <sup>2</sup>	4	EN 102 Composition and Literature II	3
		General Education-History Elective	3
	<b>13</b>		<b>17</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EC 202 Principles of Economics (Micro) <sup>3</sup>	3	AC 206 Principles of Accounting-Managerial <sup>3</sup>	4
MA 212 Finite Mathematics	3	EC 201 Principles of Economics (Macro) <sup>3</sup>	3
AC 205 Principles of Accounting-Financial <sup>3</sup>	4	EN 204 Professional and Technical Writing	3
EN 112 Public Speaking	3	MG 309 Management of Organizations	3
General Education-Lab Science Elective 2	4	QM 213 Business and Economic Statistics I	3
	<b>17</b>		<b>16</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MG 310 Production/Operations Management	3	EC 310 Money and Banking	3
MG 314 Marketing Management	3	Major/Concentration Elective	3
FN 311 Corporate Finance	3	Major/Concentration Elective	3
PH 322 Business Ethics	3	General Education-Literature Elective	3
IS 300 Management Information Systems	3	General Education-Arts & Humanities Elective	3
	<b>15</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MG 341 Business Law I	3	MG 449 Administrative Policy and Strategy	3
Major/Concentration Elective	3	Major/Concentration Elective	3
Major/Concentration Elective	3	Major/Concentration Elective	3
Elective Course	3	Elective Course	3
MG 319 International Dimensions of Business	3	Elective Course	3
	<b>15</b>		<b>15</b>
Total Credits: 123			

<sup>1</sup> Must be taken first year. Upper level students without credit for these courses will substitute with an Elective Course from a School of Business & Management subject area. This must be done via a petition.

<sup>2</sup> If MA 103 is required by Placement Test results, a grade of C or higher is required in MA 103 prior to taking MA 107.

<sup>3</sup> AC 205, AC 206, EC 201, EC 202 require a grade of C or higher.

Management majors must choose one of the following concentrations during the spring semester of their sophomore year: Computer Information Systems (p. 54), Financial Economics (p. 77), Leadership (p. 87), Marketing (p. 90), or Sports Management (p. 113).

Upper-level National Service courses are included in all Management Major/Concentration Electives.

## Marketing Concentration--Management Major

Charles A. Dana Professor Puddicombe; Professors Kabay and Mohagheg; Associate Professors Benabess, Blythe, Jolley and Yandow; Assistant Professor Chung; Lecturer Pomeroy; Adjunct Instructors Alcorn, Faulkner, Fogg, Merolli, Rowley, Seipel and Verret.

The Business and Management concentration in Marketing prepares students for careers in the dynamic and exciting fields of brand management, advertising, marketing research, and new product development. Five critical courses make up the concentration: Advanced Marketing Strategy, Consumer Behavior, Integrated Marketing Communications, Applied Marketing Research, and Advanced Quantitative Analysis for Business Decisions.

Students successfully completing this degree will be qualified to develop strategic marketing plans, articulate the financial and market impacts associated with implementing the plan, and apply statistical decision theory and market research data to support the plan.

Students will use marketing simulation, case studies, and real-world projects to create a challenging experiential learning environment using contemporary marketing concepts from the top marketing thought-leaders of today.

### Marketing Concentration Courses

MG 411	Consumer Behavior	3
MG 441	Integrated Marketing Communications	3
MG 416	Advanced Marketing	3
QM 370	Quantitative Methods for Marketing & Finance	3
Major/Concentration Elective		3
Major/Concentration Elective		3
<b>Total Credits</b>		<b>18</b>

### Major/Concentration Electives -- Choose two from the following list:

AC		
MG		
IS		
EC		
FN		
QM		
CP		
MA 240	Introduction to Number Theory and Cryptology	3
MA 318	Cryptology	3
MA 370	Introduction to Operations Research	3
CJ 341	Cyber Law and Cyber Crime	3
CJ 442	Introduction to Computer Forensics	4
PY 210	Psychology of Leadership	3
AS 311	Air Force Leadership Studies	3
AS 312	Air Force Leadership Studies	3
AS 411	National Security Affairs/Preparation for Active Duty	3
AS 412	National Security Affairs/Preparation for Active Duty	3
MS 311	Military Science III	3
MS 312	Military Science III	3
MS 411	Military Science IV	3
MS 412	Military Science IV	3
NS 321	Naval Ship Systems I	3
NS 342	Small Unit Leadership Skills	2
NS 421	Naval Operations and Seamanship	3

NS 422	Leadership and Ethics	3
Modern Foreign Languages		

## Marketing Minor

Students seeking a minor in Marketing must obtain the approval of the School Director and must complete all of the six courses listed below, each with a grade of C or higher.

MG 314	Marketing Management	3
MG 416	Advanced Marketing	3
MG 441	Integrated Marketing Communications	3
PY 211	Introduction to Psychology	3
<b>Any two of the following courses:</b>		<b>6</b>
AC 441	Cost Accounting	3
MG 319	International Dimensions of Business	3
MG 448	Small Business Strategies	3
MG 450	Internship in Management	3
QM 317	Business and Economic Statistics II	3
Total Credits		18

## Mathematics

Professors Cathy Frey, Gerard LaVarnway, Robert Poodiack (Chair) and Ernest True; Associate Professors Christine Latulippe, Jocelyn Latulippe, Daniel McQuillan, Darlene Olsen, Jeffrey Olson, and Waclaw Timoszyk; Assistant Professor Sean Kramer; Lecturers Min Ku and Elizabeth Mathai; Adjuncts Elisabeth Gambler, Steven Grindle, Jared Krogsrud, and Carol Rogers.

The Mathematics Department offers a four-year program leading to the Bachelor of Science degree in Mathematics. The courses offered are intended to:

1. prepare mathematics majors for graduate work in mathematics or careers in computer science, engineering, industry, business, actuary science, or teaching;
2. support the curricula in all disciplines, and
3. supply the students with the mathematics courses necessary to qualify for teacher licensure.

Courses required of the mathematics major are listed in the following pages. Mathematics majors must obtain grades of "C" or higher in at least three of the four courses MA 121, MA 122, MA 223, MA 224 and in at least six math courses at the 300-400 level, other than MA 360. Courses listed in the third year and fourth year of the program as math electives are taken at the 300-400 level.

## B.S. in Mathematics - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
MA 121 Calculus I	4	MA 122 Calculus II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
Lab Science Elective	4	Lab Science Elective	4
Elective	3	MA 241 Mathematical Computation and Modeling	3
	<b>14</b>		<b>14</b>

<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 223 Calculus III	4	MA 224 Differential Equations	4
MA 306 Discrete Mathematics	3	MA 310 Linear Algebra	3
EN 201 World Literature I	3	EN 202 World Literature II	3
General Education Elective	3	General Education Elective <sup>1</sup>	3
PS 211 University Physics I	4	PS 212 University Physics II	4
		MA 250 Communication in Mathematics	1
	<b>17</b>		<b>18</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 303 Advanced Calculus I or 309 Algebraic Structures <sup>2</sup>	3	MA 304 Advanced Calculus II or 312 Statistical Methodology II <sup>3</sup>	3
MA 311 Statistical Methodology	3	MA Elective	3
General Education Elective <sup>1</sup>	3	General Education Elective <sup>1</sup>	3
Elective	3	Elective	3
Elective	3	MA Elective	3
	<b>15</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 309 Algebraic Structures or 303 Advanced Calculus I	3	MA Elective	3
MA 411 Senior Seminars	3	MA Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	<b>15</b>		<b>15</b>
Total Credits: 123			

<sup>1</sup> The four required general education electives are:

1. a course in History (except HI 209).
2. a Social Science Elective.
3. a course in Ethics, either PH 303 or PH 350.
4. a Humanities Elective.

<sup>2</sup> MA 303 and MA 309 alternate as fall semester courses; both courses are required. For year these courses are offered See Course Descriptions.

<sup>3</sup> MA 304 and MA 312 alternate as spring semester courses; one of the two courses is required.

## B.S. in Mathematics - Actuarial Concentration - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 121 Calculus I	4	MA 122 Calculus II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
Lab Science Elective	4	Lab Science Elective	4
General Education Elective <sup>1</sup>	3	MA 241 Mathematical Computation and Modeling	3
	<b>14</b>		<b>14</b>



<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 223 Calculus III	4	MA 224 Differential Equations	4
MA 306 Discrete Mathematics	3	MA 310 Linear Algebra	3
EN 201 World Literature I	3	EN 202 World Literature II	3
EC 201 Principles of Economics (Macro)	3	EC 202 Principles of Economics (Micro)	3
PS 211 University Physics I	4	PS 212 University Physics II	4
		MA 250 Communication in Mathematics	1
	<b>17</b>		<b>18</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 303 Advanced Calculus I or 309 Algebraic Structures <sup>2</sup>	3	MA 312 Statistical Methodology II	3
MA 311 Statistical Methodology	3	MA Elective	3
MA 212 Finite Mathematics	3	General Education Elective <sup>1</sup>	3
General Education Elective <sup>1</sup>	3	Elective	3
Elective	3	MA Elective	3
	<b>15</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 309 Algebraic Structures or 303 Advanced Calculus I <sup>2</sup>	3	MA 321 Financial Mathematics	3
MA 411 Senior Seminars	3	MA Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	<b>15</b>		<b>15</b>
Total Credits: 123			

<sup>1</sup> The three required general education electives are:

1. a course in History (except HI 209).
2. a course in Ethics, either PH 303 or PH 350.
3. a Humanities Elective.

<sup>2</sup> MA 303 and MA 309 alternate as fall semester courses; both courses are required. For years these courses are offered See Course Descriptions.

The required courses for the Actuarial Concentration are (to be completed with a grade of "C" or higher); EC 201, EC 202, MA 212, MA 311, MA 312, and MA 321.

A grade of "B-" or higher is required in EC 201, EC 202, MA 311, and MA 312 to meet the Society of Actuaries Validation by Educational Experience requirement.

## **B.S. in Mathematics (leading to teacher certification) - Curriculum Map**

(meeting requirements for Teacher Licensure - grades 7-12 mathematics teacher)

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 121 Calculus I	4	MA 122 Calculus II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
Lab Science Elective	4	Lab Science Elective	4
PY 211 Introduction to Psychology	3	MA 241 Mathematical Computation and Modeling	3
ED 104 Foundations of Education	3	ED 104 Foundations of Education	3
	<b>17</b>		<b>17</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 223 Calculus III	4	MA 224 Differential Equations	4
MA 306 Discrete Mathematics	3	MA 310 Linear Algebra	3
EN 201 World Literature I	3	EN 202 World Literature II	3
ED 234 Learning and Teaching Strategies	4	PY 220 Developmental Psychology	3
PS 211 University Physics I	4	PS 212 University Physics II	4
		MA 250 Communication in Mathematics	1
	<b>18</b>		<b>18</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 303 Advanced Calculus I or 309 Algebraic Structures <sup>1</sup>	3	MA 304 Advanced Calculus II or 312 Statistical Methodology II <sup>2</sup>	3
MA 311 Statistical Methodology	3	MA Elective	3
MA Elective	3	MA Elective	3
Elective (HI or PH or MA 360)	3	HU Elect, if program inc MA 360	3
PY 324 Adolescent Psychology	3-4	ED 363 Reading and Writing in the Content Area	4
		ED 315 Special Needs Child	3
	<b>15-16</b>		<b>19</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 309 Algebraic Structures or 303 Advanced Calculus I <sup>1</sup>	3	ED 425 Student Teaching	12
MA 411 Senior Seminars	3		
MA Elective	3		
Elective (HI or PH or MA 360)			
HU Elective			
ED 368 Curriculum & Methods in Secondary Subjects	4		
	<b>13</b>		<b>12</b>
Total Credits: 129-130			

<sup>1</sup> MA 303 and MA 309 alternate as fall semester courses; both courses are required. For years these courses are offered, see Course Descriptions.

<sup>2</sup> MA 304 and MA 312 alternate as spring semester courses; one of the two courses is required.

## Mathematics Minor

Students must complete six courses of 3 or more credits each in mathematics (MA) above of MA 121 (at least three at the 300-400 level) with a grade of C or higher. Students are invited to design their own programs so as to blend these courses with their academic majors, with the advice of the Mathematics Department. 18-24

## Mechanical Engineering

Professor D. Wallace; Associate Professors R. Friend and J. Mountain (Chair); Assistant Professor K. Supan; Lecturer M. Rolland; Visiting Assistant Professor B. Bradke.

### The Mission of the Mechanical Engineering Department is to:

- Prepare students to excel in mechanical engineering and related fields.
- Provide modern, fundamental, practice-oriented education in the mechanical engineering field.
- Foster creativity and critical thinking in problem solving and motivate students to consider the societal consequences of their work.
- Enable students to be leaders in their profession, community, and the nation.

### Graduates of the Mechanical Engineering program will:

- Apply engineering principles and modern tools to conceive and implement engineering solutions.
- Hold positions of progressive responsibility leading teams in a variety of mechanical engineering fields including: energy conversion and transfer, materials and manufacturing, and mechanical systems design.
- Work as professionals in industrial, military, government, and academic settings while maintaining a high awareness and responsibility regarding ethical, safety, environmental, social, economic, and global issues.
- Work effectively as a team member and lead multidisciplinary teams.
- Design components, systems or processes in the mechanical engineering field and effectively communicate those designs through verbal and written means.
- Have a positive outlook on the engineering profession and maintain an ongoing intellectual curiosity while actively engaged in continuing education throughout life.

Mechanical engineering, the broadest of the engineering professions, provides an opportunity for a wide range and variety of services, work, and interests. The mechanical engineer deals with the conversion of energy, the design of machines, the instrumentation and control of processes, and the control of machines and the environment. Conventional fields of interest are transportation (automobiles, aircraft, urban and mass transit); machines and systems for electrical power production from coal, oil, and gas; heating and air conditioning of buildings; and the complex machinery and methods of making steel, plastics, paper products, etc. Today the mechanical engineer is directly involved in new and challenging fields such as computer-aided design and manufacturing (CAD/CAM); artificial body organs and devices (bioengineering); nuclear power generation; applications of electronics to the control of machines and to laboratory instruments; aerospace (spacecraft and rockets); and the control of environmental pollution for automobiles and industry. The diversity of opportunities for the mechanical engineer and the extensive overlap of interests with the other engineering and scientific disciplines demand that the undergraduate education be broad rather than specialized and that it provide a thorough grounding in all of the engineering fundamentals. The curriculum is a carefully structured blend of theory and the practical aspects of engineering. Engineering applications are emphasized in the junior and senior years with three semesters of design. The diversity of the curriculum is also apparent in the senior projects courses where assignments range from the design, construction, and testing of a water quality measuring submarine to the investigation of robotics manufacturing techniques for the compact disc industry. Since three-fourths of the curriculum's technical content consists of a foundation of engineering theory, the graduate is uniquely prepared to attack the technical challenges of the future and solve the new engineering problems of society. The graduate is well prepared for direct employment in the engineering profession or for further formal education in graduate school.

### The Mechanical Engineering curriculum is accredited by:

Engineering Accreditation Commission (EAC) of ABET, <http://www.abet.org>  
 415 N. Charles Street  
 Baltimore, MD 21201  
 Telephone (410) 347-7700

## B.S. in Mechanical Engineering - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
EG 109 Introduction to Engineering I	3	EG 110 Introduction to Engineering II	3
MA 121 Calculus I	4	MA 122 Calculus II	4
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
		General Education Elective	3
	<b>14</b>		<b>17</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EE 204 Electrical Circuits I	3	EE 240 Electrical Concepts and Applications	3
EG 201 Engineering Mechanics (Statics, Dynamics)	3	EG 202 Engineering Mechanics (Statics,Dynamics)	3
ME 211 Mechanical Engineer Tools I	2	EG 206 Thermodynamics I	3
MA 223 Calculus III	4	MA 224 Differential Equations	4
PS 211 University Physics I	4	PS 212 University Physics II	4
	<b>16</b>		<b>17</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EG 203 Materials Science	3	EG 303 Fluid Mechanics	3
EG 301 Mechanics of Materials	3	ME 356 Manufacturing Processes	4
ME 307 Thermodynamics II	3	ME 368 Design of Machine Elements	3
ME 311 Mechanical Engineering Tools II	2	ME 370 Mechanical Systems Design	3
ME 363 Kinematic and Kinetic Sythesis	3	ME 382 Mechanical Engineering Laboratory II	1
ME 381 Mechanical Engineering Laborator I	2	General Education Elective	3
	<b>16</b>		<b>17</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EE 321 Embedded Systems	4	ME 468 Mechanical Engineering Design II	3
ME 435 Mechanical Control Systems	3	EG 043 Conference	0
ME 465 Heat Transfer	3	ME Elective	3
ME 467 Mechanical Engineering Design I	3	Math/Science/Engineering Elective <sup>1</sup>	3
ME 487 Mechanical Engineering Laboratory III	2	General Education Elective	3
EG 044 Conference	0	General Education Elective	3
General Education Elective	3		
	<b>18</b>		<b>15</b>
Total Credits: 130			

An undergraduate student, who has completed all degree requirements except for attaining a 2.00 average, must take at least 50 percent of all subsequent course work in technical material (subject to approval by the Director of the David Crawford School of Engineering).

For the Mechanical Engineering Program, a fifth General Education Elective is required and is an additional course from any one of the four previously mentioned general education categories.

<sup>1</sup> The following courses are approved Math/Science/Engineering Electives: CE348, CH205, CH225, CH327, EE303, EE325, EE357, MA241, MA306, MA309, MA310, MA370, MA407, PS232, PS331, PS363, PS423, PS441, and any ME 400 level course not specifically listed as a degree requirement.

Two different ME490 courses covering different topics can be used to satisfy the ME elective and the Math/Science/Engineering elective. Other 200 level (or higher) 3+ credit courses offered by College of Science and Mathematics or the David Crawford School of Engineering may be approved subject to completion of the course prerequisites and a positive recommendation from the student's academic advisor and the Mechanical Engineering department chair.

## Music

Adjunct Professors Alison Cerutti, Todd Edwards, and Iain MacHarg.

Music offers courses in music appreciation and history, as well as instruction and performance opportunities for singing and instrumental work.

**Note. Students can earn no more than one, three credit free elective course, by combining three of the same one credit music courses.**

## Neuroscience

Professors William Barnard and Lauren Howard; Associate Professors Scott Page (Chair), Karen Hinkle and Elizabeth Wuorinen; Assistant Professors Megan Doczi and Harry Christman; Lecturer Virginia Kunkel.

### Minor in Neuroscience

A concentration for Biology or Psychology majors; a minor for other students.

The minor is designed to give students the opportunity to explore this emerging field and prepare them for graduate programs and potential careers in the Neurosciences.

All courses must be passed with a C or higher.

### Neuroscience Minor

[A concentration for Biology and Psychology majors.]

All courses must be passed with a C or higher.

The minor is designed to give students the opportunity to explore this emerging field and prepare them for graduate programs and potential careers in the Neurosciences.

<b>Required Courses:</b>		<b>15</b>
BI 215	Human Anatomy and Physiology	4
BI 370	Introduction to Neuroscience	4
PY 230	Biopsychology	3
PY 344	Cognition	4
<b>One additional biology course:</b> <sup>1</sup>		<b>4</b>
BI 302	Embryology	4
or BI 304	Physiology	
<b>One additional psychology course:</b> <sup>1</sup>		<b>3-4</b>
PY 212	Abnormal Psychology	3
PY 220	Developmental Psychology	3
PY 263	Perception	3
PY 352	Learning and Memory	4
Total Credits		22-23

<sup>1</sup> Students may also choose the following two chemistry courses: CH 324, CH 325, in lieu of the additional biology/psychology courses, however this option requires these additional prerequisites: CH 103-CH 104, and either CH 205, CH 226 or concurrent enrollment in CH 226.

## Nursing

Director: Dr. Sharon I. Richie

Assistant Professors Healy and Lapierre; Lecturers Hardy, Kiernan, Marchewka, Pitcher and Woods.

### Accreditation

The BSN Program is accredited by the Commission on Collegiate Nursing Education (CCNE) (<http://www.aacn.nche.edu/ccne-accreditation/accredited-programs>) One Dupont Circle, NW, Suite 530, Washington, DC 20036, (202)-887-8476 and approved by the Vermont State Board of Nursing (<http://vtprofessionals.org/opr1/nurses>), Office of Professional Regulations, 89 Main Street 3rd Floor, Montpelier, VT 05520-2482, (802) 828-2396.

## Mission

The mission of Norwich University's Baccalaureate Nursing Program is to educate qualified nurses to serve individuals and communities throughout the life cycle in health promotion and disease management. Through educational excellence, this program challenges students to respond to the complex system of health care in order to ensure optimum quality and value inpatient care.

## Philosophy

Nursing at Norwich University is grounded in core essentials of baccalaureate education and predicated on the profession's ideals to meet the needs of a complex, dynamic healthcare environment. Inherent in professional practice are the emerging trends in population health, patient care technology, and cultural diversity. The Faculty believes that through direct patient care and simulated clinical experience students will acquire the knowledge base to ensure optimum health outcomes for our patients, families and communities.

The Faculty further believes that teaching and learning evolves, through a seamless progression, in competency based nursing practice. Graduates become proficient in patient centered care with emphasis on quality improvement methods and patient safety. The responsibility of the professional nurse is complex, requiring expertise in leadership, communication and teamwork.

## Program Objectives

1. Integrates knowledge derived from nursing science, health related sciences, and humanities when designing and providing patient-centered care.
2. Provides patient centered care in which the dignity, spirituality, and rights of the individual family and community are respected.
3. Promotes the profession's obligation to legal, ethical and moral standards.
4. Leads based on the values of commitment, collaboration, critical thinking and creativity.
5. Employs informatics to communicate, manage knowledge, mitigate error, and support decision-making.
6. Communicate effectively in a manner that fosters respectful and collaborative decision making, thus enhancing patient satisfaction and health outcomes.
7. Integrate political awareness, critical thinking, social justice and participation in the policy process with professional role behavior.
8. Use the best current evidence coupled with clinical reasoning to minimize risk and improve quality and safety of patient care.
9. Values the pursuit of practice excellence, lifelong learning, and professional engagement to foster professional growth and development.

## Overview

The Nursing Department offers a four-year program leading to the Bachelor of Science in Nursing and eligibility to take the National Council Licensure Examination for Registered Nurses (NCLEX-RN). (<https://www.ncsbn.org/nclex.htm>) The first year of the BSN program is dedicated to courses in the Humanities, Sciences, Social Sciences and 2 foundation courses in Nursing. The clinical experience begins in the spring of the sophomore year and continues through the remainder of the program. By graduation students will have practiced in a variety of settings, including hospitals, community/home health agencies, schools and clinics. Well equipped, modern, simulation laboratories provide on-campus learning labs for skill acquisition and health assessment practice. Morning, evening, and weekend hours are utilized for the clinical experience. Students will take a pre-NCLEX exam in their senior year to determine readiness for NCLEX exams. Students are required to purchase student uniforms. Students are responsible for their own transportation to and from clinical agencies. Nursing majors must have current "American Heart Association Health Care Provider ([http://www.heart.org/HEARTORG/CPRandECC/CPR\\_UCM\\_001118\\_SubHomePage.jsp](http://www.heart.org/HEARTORG/CPRandECC/CPR_UCM_001118_SubHomePage.jsp))" certification in cardiopulmonary resuscitation (CPR) upon entering the sophomore year and through all subsequent nursing courses.

## Admission standards

In addition to the university General Admission Requirements (p. 30), nursing applicants must:

- Complete 4 years of high school (HS) math including Algebra, Geometry and Trig
- Complete 3 years of HS science including biology and Chemistry
- Transfer college level science courses current within 5 years
- Online science courses are not transferable
- College level GPA must be at a minimum of 3.0
- Transfer students must submit a letter of reference form the Chairperson/Dean of the transferring school prior to acceptance.
- Background screening is a requirement for admission and condition of both acceptance and progression in nursing
- Students must also submit to intermittent background screening as required by clinical agencies. A criminal record deemed to be of consequence or the habitual intemperate use or addiction to habit forming substances precludes enrollment in the Program.

## Progression and Graduation

A minimum grade of C+ is required in all nursing courses. C grades are required in BI 215, BI 216, BI 220, CH 111 and CH 102 to progress within the program. In order to progress, students must meet the criteria for academic progression as stated in the Norwich University 2012 Academic Regulations. Upon successful completion of the program, the graduate is awarded the Bachelor of Science Nursing degree.



Each state's Board of Nursing has the sole authority to grant graduates the privilege of taking the NCLEX-RN examination; therefore, students are directed to refer to the state in which they plan to practice for specific legal requirements. An applicant may be required to submit additional documentation and could be denied the privilege of sitting for the NCLEX-RN examination subject to the particular state's regulation

## B.S. in Nursing - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	MA 232 Elementary Statistics	3
BI 215 Human Anatomy and Physiology	4	EN 102 Composition and Literature II	3
NR 104 Focus on Nursing	3	NR 105 Promoting Healthy Individuals	3
PY 211 Introduction to Psychology	3	BI 216 Human Anatomy and Physiology	4
HI Elective	3	CH 101 Introduction to General Chemistry	4
	<b>16</b>		<b>17</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
MA 235 Clinical Mathematical Methods	3	BI 220 Introductory Microbiology	4
NR 206 Health Assessment	3	NR 215 Client, Psy/Mental Health Prob (Grade of C+ or higher required)	3
NR 204 Nursing Informatics	1	NR 215L Client, Psy/Mental Health Prob (Grade of Satisfactory Required)	2
SO 216 Soc of Health, Wellness & Med	3	NR 225 Evidenced - Based Practice	3
CH 102 Introduction to Organic and Biochemistry	4	NR 219 Simulations Clinical Practice	2
PY 220 Developmental Psychology	3		
	<b>17</b>		<b>14</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
NR 316 Care of the Adult 1 (Grade of C+ or higher required)	3	NR 351 Family Centered Nursing	1
NR 316L Care of the Adult 1 (Satisfactory grade required)	3	Literature Elective <sup>2</sup>	3
PH 350 Medical Ethics	3	NR 331L Care of Women-Childbearing Family Prac (Grade of Satisfactory Required)	1
NR 314 Tech Innovations Clinical Nsr	1	NR 321 Nursing Leadership	3
NR 399 Pathopharmacology for Nursing	1-4	NR 331 Care of Women and Childbearing Family (Grade of C+ required)	3
SO 316 Aging in Society	3	NR 341 Care of Children&Child Rearing (Grade of C+ or higher required)	3
		NR 341L Care of Children&Child Rearing (Grade of satisfactory required) <sup>1</sup>	2
	<b>14-17</b>		<b>16</b>

Fourth Year			
Fall	Credits	Spring	Credits
NR 416 Care of the Adult II (Grade of C+ or higher required)	4	NR 421 Coordinator of Care (Grade of C+ or higher required)	3
NR 416L Care of Adult II (Satisfactory grade required)	4	NR 421L Coordinator of Care Practicum (Grade of satisfactory required) <sup>1</sup>	4
NR 420 Care at End of Life	2	NR 431 Promoting Health in Communities (Grade of C+ or higher required)	3
MG 360 Health Economics & Policy	3	NR 431L Promoting Health in Communities: Clinical Practicum (Satisfactory grade required)	2
Humanities/Arts Elective <sup>3</sup>	3	NR 441 Nursing Capstone	4
	<b>16</b>		<b>16</b>
Total Credits: 126-129			

## Philosophy

Philip A. Gauss Professor Robert McKay, Professor Hubert Maultsby, Adjunct Professor William Ketterer.

The program in philosophy provides an encounter with the major concepts of Western thought in both historical and contemporary perspectives. Eastern ideas and attitudes are related at crucial points of intersection.

The minor in philosophy provides a chance to engage in open-ended, critical thinking about basic ideas in ethics, politics, religion and science, both in relation to current debates, and as they have developed since the beginnings of philosophy in ancient Greece.

### Philosophy Minor

For the philosophy minor, the student must complete, with a grade of C or higher, six courses:

PH 210	Foundations of Western Thought I: The Ancient World	3
Five additional philosophy courses		15
Total Credits		18

## Physics

Professor: Rahmathullah Syed; Associate Professor Richard Hyde (Chair); Assistant Professors: Robert Knapik and Arthur Pallone; Lecturer Elisabeth Atems

Norwich University offers the Bachelor of Science in Physics to students desiring a strong background in basic physics. This curriculum prepares students for work in industry and government, for graduate work in physics and other physical sciences, or for a military career.

The Bachelor of Science curriculum requires 129-degree credits for graduation. Six hours of approved ROTC courses may be included in degree credits. Many advanced physics courses have designated courses as prerequisites.

### B. S. in Physics - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA 121 Calculus I	4	MA 122 Calculus II	4
CH 103 General Chemistry I	4	CH 104 General Chemistry II	4
PS 107 Introductory Solar System Astronomy (or Free Elective)	3	PS 110 Physics of Continuous Media	3
	<b>14</b>		<b>14</b>

<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 201 World Literature I	3	EN 202 World Literature II	3
MA 223 Calculus III	4	MA 224 Differential Equations	4
PS 211 University Physics I	4	PS 212 University Physics II	4
PS 205 Basic Instrumentation in the Natural Sciences (or Free Elective) <sup>§</sup>	4-3	History Elective	3
Ethics Elective	3	Social Science Elective	3
	<b>18-17</b>		<b>17</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
Mathmatics Elective	3	Mathematics Elective	3
PS 331 Mechanics or 354 Thermodynamics <sup>§</sup>	4	PS 332 Mechanics II or 363 Optics <sup>§</sup>	4
PS 441 Modern Physics I or 423 Electricity and Magnetism I <sup>§</sup>	4	PS 442 Modern Physics II or 424 Electricity and Magnetism II <sup>§</sup>	4
PS 205 Basic Instrumentation in the Natural Sciences (or Free Elective) <sup>§</sup>	3-4	Free Electives (2)	6
Free Elective	3		
	<b>17-18</b>		<b>17</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PS 354 Thermodynamics or 331 Mechanics <sup>§</sup>	4	PS 363 Optics or 332 Mechanics II <sup>§</sup>	4
PS 423 Electricity and Magnetism I or 441 Modern Physics I <sup>§</sup>	4	PS 424 Electricity and Magnetism II or 442 Modern Physics II <sup>§</sup>	4
PS 461 Senior Project I	1	PS 462 Senior Project II	1
PS 451 Seminar I	1	PS 452 Seminar II	1
Free Electives (2)	6	Free Electives (2)	6
	<b>16</b>		<b>16</b>
Total Credits: 129			

§ This course is offered in alternate years. Both courses listed are required. For the years these courses are offered, see Course Descriptions.

### Physics Minor

PS 211	University Physics I	4
PS 212	University Physics II	4

In addition to the above students must complete 4 physics courses , two of these must be above 300. 10

## Physical Education Teacher Education and Exercise Science

Program Coordinator: Elizabeth Wuorinen

Associate Professor Elizabeth Wuorinen, Assistant Professor Thomas Roberge, Instructor Tanjian Liang

### Physical Education and Exercise Science

A degree in Physical Education emphasizes principles, problems and procedures for the improvement of individual and community health. The program provides an introduction to the Physical Education profession, and includes historical and philosophical implications and modern trends in program design with an emphasis on the study of the human body. Professional ethics, client privacy and liability issues are stressed throughout the program. Our students learn to design, revise and analyze exercise programs, how to coach team sports and group activities, and how to identify and implement exercise programs for a range of individuals, from athletes to disabled people.

The Physical Education students have access to the facilities and equipment of the Department of Biology and Physical Education. There are various courses designed to develop the students' interest in both pedagogy and the fitness related fields. The Physical Education Major offers two options, **Teacher Education** and **Exercise Science**:

## Teacher Education

The courses in the Teacher Education option are designed to prepare students for teaching Physical Education in both elementary and secondary schools. The Teacher Education option is committed to a standards-based approach in the development of beginning educators.

Student goals for the Teacher Education option include, but not limited to:

- The ability to organize, develop, implement, and evaluate a physical education program (this includes Pre-K-12 curriculum, as well as planning athletic and health fitness programs)
- Recognizing and incorporating safe programs and facilities, such as risk management and liability considerations within school-based programs.
- Development and implementation of assessment plans consistent with national and/or state standards.
- Knowledge in the area of accommodations for physical education programs to meet the needs of all individuals.

Each student choosing to become a teacher is responsible for developing a portfolio for licensure. The portfolio is constructed throughout the tenure of the undergraduate experience thus demonstrating individual learning and growth to become proficient Vermont State regulations and standards for teacher preparation.

## Exercise Science

The courses in the Exercise Science option are designed to prepare the student for nationally recognized certifications, such as the American College of Sports Medicine (ACSM) and National Strength and Conditioning Association (NSCA). There are courses available to engage the student in practical experiences in a range of venues from outdoor education to fitness facilities, as well as research opportunities.

An undergraduate degree in Physical Education Exercise Science option may also serve toward continued education in graduate school in exercise physiology or related area. Students also enter specialized programs leading to careers in strength and conditioning, outdoor leadership, recreation, cardiac or pulmonary rehabilitation, nutrition, and clinical research.

## B.S. in Physical Education-Teacher Education - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
BI 101 Principles of Biology I	4	PY 220 Developmental Psychology	3
MA 1XX	3-4	PE 265 Lifelong Motor Development	3
PE 161 Physical Fitness & Wellness Assessment	3	PE 107 Foundations of Physical Education	3
PY 211 Introduction to Psychology	3	BI/CH/GL/PS Elective	3
	<b>16-17</b>		<b>15</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI 215 Human Anatomy and Physiology	4	BI 216 Human Anatomy and Physiology	4
MA 232 Elementary Statistics	3	BI 253 Foods and Nutrition	4
PE 223 Motor Skills Development I	3	PE 305 Motor Development Activities II	4
PE 260 Personal and Community Health	3	PE 342 Instructional Strategies for Physical Education in Middle-Secondary School	4
PE 341 Instructional Strategies for Physical Education in Elementary School	4		
	<b>17</b>		<b>16</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PE 355 Coaching:Leadership in Sports	3	PE 371 Physiology of Exercise	4
PE 365 Kinesiology	4	PE 373 Activities and Programs for the Disabled and Aging	3
Literative General Education Elective	3	PE 432 Organization and Administration in Physical Education	3
PE 306 Outdoor Physical Education I	3	PE 307 Outdoor Physical Education II	3
HI 1XX	3	Humanities General Education Elective (EN 206 or higher excluding 240,241, 242; FA; MU 101; CM 109, 261, 335; CN; Lanugage above 112 or PH)	3
	<b>16</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
SM 136 Emergency Care, Injury/Illness	3	ED 425 Student Teaching (PETE students must have a 2.0 GPA and passed Praxis II to enroll in ED 425)	12
PE 406 Readings in Physical Education	3	Free Elective	3-4
Biology Elective above 200	4		
Humanities General Education Elective	3		
Free Elective	3-6		
	<b>16-19</b>		<b>15-16</b>
Total Credits: 127-132			

## Physical Education: Exercise Science Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
MA Elective Precalc recommended)	3	MA 232 Elementary Statistics	3
BI 101 Principles of Biology I	4	PE 265 Lifelong Motor Development	3
PE 161 Physical Fitness & Wellness Assessment	3	PE 107 Foundations of Physical Education	3
PE 260 Personal and Community Health	3	BI/CH/PS Elective	4
	<b>16</b>		<b>16</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
BI 215 Human Anatomy and Physiology	4	BI 253 Foods and Nutrition	4
CH 102 Introduction to Organic and Biochemistry	4	Literature Elective	3
PE 261 Foundations in Health Education	4	BI 216 Human Anatomy and Physiology	4
PE 306 Outdoor Physical Education I	3	PE 307 Outdoor Physical Education II	3
		PY 211 Introduction to Psychology	3
	<b>15</b>		<b>17</b>

Third Year			
Fall	Credits	Spring	Credits
PE 355 Coaching:Leadership in Sports	3	PE 371 Physiology of Exercise	4
PE 365 Kinesiology	4	PE 432 Organization and Administration in Physical Education	3
PE 333 Management Sports Facilities	3	BI 364 Pathophysiology in Sports Medicine	4
PS 201 General Physics I	4	History Elective	3
		Humanities Elective <sup>1</sup>	3
	<b>14</b>		<b>17</b>
Fourth Year			
Fall	Credits	Spring	Credits
BI 401 Senior Seminar	3	PE 426 Internship or Free Electives	12
PE 441 Advanced Exercise Physiology and Prescription	4		
PE 450 Exercise Testing and Electrocardiography	4		
Free Elective (BI 440 suggested)	4		
	<b>15</b>		<b>12</b>
Total Credits: 122			

1 • Humanities: English above 206 (except 240-242), Communications 109, 216, 335, 436, Fine Arts, Music 101, Modern Language above 112, or Philosophy

- All PE/BI courses toward the degree requirement must be a **C or higher**
- All sciences must be taken as lab sciences (4 credit courses)
- **Certification in First Aid & CPR is also required for graduation**
- ROTC coursework requires additional content each semester, senior year being optional
- Transfer credits require permission of the Registrar. Credit transfers; not grade.
- Business minors available
- Biology minors available
- CH 111 is required if there is no high school chemistry on the transcript

## Political Science

Program Coordinator: Jason F.Jagemann

Professor Andrea Talentino; Associate Professors Michael Andrew and Jason Jagemann; Assistant Professors Yangmo Ku and Megan Rimmel; Adjunct Faculty Austin Gray, Dart Thalman, Kevin Ryan.

### Mission Statement

The mission of the Political Science program is to emphasize the objectives of the liberal arts, which are to help the student cultivate powers of analysis and exposition in reading, writing, and communication; to expand the student's intellectual horizons; and to increase the student's knowledge and curiosity. The program explores the realm of politics; its vocabulary, its principal concepts and strategies, its ethics, and its expedencies. To do so, the program encourages students to appreciate and understand theories about government and politics, as well as the methods of the discipline.

### Honors Program in History or Political Science

Students with a grade point average of 3.0 or better, and who meet all university and departmental curricular requirements, and have grades averaging 3.2 or better in courses in their major will be, at the end of their junior year, eligible to become candidates for the history or political science major with honors. Students who have not met these standards may be invited to candidacy by the department. Six hours of credit will be assigned, normally three hours each semester. A successful defense of an honors paper must be conducted and a minimum grade of 3.5 must be earned for the student's registration in an Honors Course to appear on the transcript. For further guidance, see the History and Political Science Department's Honors Thesis Guidelines.

### Pre-Law Training

The Association of American Law Schools identifies the following as the major objectives to be sought in an undergraduate pre-law curriculum:



1. comprehension and expression in words;
2. critical understanding of the human institutions and values with which the law deals;
3. creative power in thinking.

These goals can best be approached by an undergraduate curriculum in which the social sciences and English play the leading part. One of the leading American law schools advises college students preparing to study law: "The importance of history in a pre-legal program cannot be over emphasized"; and of political science: "This subject also is one with which the lawyer must be well-acquainted and it, too, is a natural college major for pre-law students." Accounting (for which mathematics is a prerequisite) is also strongly recommended by law schools.

## Internships

The Political Science Program has a strong record of supervising internships for students throughout Vermont and in Washington, DC. The intent of the internship is to provide students with opportunities to apply their classroom learning and to enhance their academic program through practical experience. Students find internships as an invaluable experience through which they can explore potential careers and examine the links between the theory and practice of politics and government.

Norwich University also maintains an institutional affiliation with **The Washington Semester Program (WSP)**, which is the oldest, most prestigious, and well-known experiential education program in the world. This is a dynamic program that takes you outside of the classroom and into the real world. You *gain experience* and *contacts* to jump-start your *career* and get a taste of professional life while you *experience* the bustling pace of the capital city. Whatever your career interests, the WSP **a number of unique and intensive programs** that will provide you with a learning opportunity that can challenge your mind and change your life.

## B.A. in Political Science - Required Courses

PO 105	American Politics	3
PO 106	Introduction to Public Policy and Administration	3
PO 202	Introduction to Comparative Politics	3
PO 215	International Relations	3
PO 220	Research Methods	3
PO 410	Capstone Seminar in Political Science	3
<b>Group 1 Political Philosophy (Select one course from the group.)</b>		<b>3</b>
PO 303	Political Philosophy	3
PO 330	American Citizenship	3
<b>Group 2 American Politics (Select one course from the group.)</b>		<b>3</b>
PO 312	The Presidency	3
PO 313	Political Parties and Interest Groups	3
PO 314	The Legislative Process	3
PO 315	Public Opinion and Political Behavior	3
PO 321	U.S. Constitutional Law	3
PO 331	State and Local Politics	3
<b>Group 3 Comparative Politics (Select one course from the group.)</b>		<b>3</b>
PO 310	European Politics	3
PO 320	Topics in Area Studies	3
PO 333	American Foreign Policy	3
PO 340	Revolution and Forces of Change	3
PO 348	Asian Politics	3
<b>Group 4 International Relations (Select one course from the group.)</b>		<b>3</b>
PO 301	Special Topics in International Relations	3
PO 305	Geopolitics	3
PO 405	International Organizations	3
PO 415	International Law	3
PO 412	War and Peace	3
<b>Group 5 Free PO Electives</b>		
Upper-Division PO Elective-Must be 300 Level or Higher		
Upper-Division PO Elective-Must be 300 Level or Higher		
<b>Group 6 Area Requirements</b>		
HI 121	American History Survey I (Must be passed with a grade of C or higher.)	3
HI 122	American History Survey II (Must be passed with a grade of C or higher.)	3

HI Elective (non-western) Must be passed with a grade of C or higher.		
EC 201	Principles of Economics (Macro)	3
or EC 202	Principles of Economics (Micro)	
EN 112	Public Speaking	3
MA 232	Elementary Statistics	3
PH Elective (all PH courses except PH 230)		
<b>Group 7 Literature Elective (Select one course from the group.)</b>		
EN 210	Modern Short Story	3
EN 220	Children's Literature	3
EN 225	Survey of British Literature I	3
EN 226	Survey of British Literature II	3
EN 227	Survey of American Literature I	3
EN 228	Survey of American Literature II	3
EN 244	The Literature of Leadership	3
EN 250	Crime in Literature	3
EN 251	Literature of the Sea	3
EN 270	Military Literature	3
EN 333	The Plays of Shakespeare I	3
EN 334	The Plays of Shakespeare II	3
EN 399	Topics in English Studies	3
EN 370	Topics in British Literature	3
EN 390	Topics in American Literature	3
EN 420	Thematic Seminar-Literature	3
EN 373	Major Author	3
EN 450	Senior Seminar	3
FR 321	A Survey of French Literature I	3
FR 322	A Survey of French Literature II	3
FR 327	French Literature of the Twentieth Century I	3
FR 328	French Literature of the Twentieth Century II	3
FR 415	Seminar: Topics in French Literature	3
FR 421	Reading and Research on a Topic in French Literature and Civilization	3
GR 322	Survey of German Lit I: From the Beginnings to 1848	3
GR 324	Survey of German Literature II: 1848 to 1945	3
GR 326	Survey of German Literature III: 1945 to the Present	3
GR 415	Seminar on a Topic in German Literature and Culture	3
GR 421	Reading and Research in German Literature or Civilization	3
SP 321	Introduction to the Literature of Spain I	3
SP 322	Introduction to the Literature of Spain II	3
SP 327	Hispano-American Literature I	3
SP 328	Hispano-American Literature II	3
SP 415	Seminar: Topics in Spanish or Latin-American Literature and Culture	3
SP 421	Reading and Research in Spanish or Latin-American Literature and Culture	3
EN 420 and EN 425 may be designated as literature courses when specified.		

All PO courses taken to satisfy the political science major requirements must be passed with a "C" or better.

## B.A. in Political Science - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	EN 102 Composition and Literature II	3
Modern Language	6	Modern Language	6
PO 105 American Politics	3	PO 106 Introduction to Public Policy and Administration	3
Elective	3	Elective	3
	<b>15</b>		<b>15</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 201 World Literature I	3	EN 202 World Literature II	3
HI 121 American History Survey I	3	HI 122 American History Survey II	3
MA Elective	3	MA 232 Elementary Statistics	3
PO 215 International Relations	3	EC 201 Principles of Economics (Macro) or 202 Principles of Economics (Micro)	3
PO 220 Research Methods	3	PO 202 Introduction to Comparative Politics	3
	<b>15</b>		<b>15</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 112 Public Speaking	3	HI (non-western) Elective	3
Lab Science	4	Lab Science	4
Philosophy Ethics Elective	3	Humanities Elective	3
Political Philosophy Elective	3	American Politics Elective (PO)	3
Elective	3	International Relations Elective (PO)	3
	<b>16</b>		<b>16</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
Humanities Elective	3	EN Literature Elective	3
Elective	3	PO Upper Division Elective	3
Elective	3	PO Upper Division Elective	3
Elective	3	Elective	3
PO Comparative Politics Elective	3	PO 410 Capstone Seminar in Political Science	3
	<b>15</b>		<b>15</b>
Total Credits: 122			

### Course Prerequisites

100 level open to Freshmen only, except by permission of department chair or unless a major requirement for another program or major.

200 level not open to Freshmen without instructor's permission.

300 level typically for upper classmen, otherwise by permission of the instructor.

400 level typically for upper classmen, otherwise by permission of the instructor.

**Topics courses may be repeated for credit as long as a new topic is offered.**

## Pre-Health Professions

### Preprofessional Programs

Preprofessional programs are those in which a student completes college as a prerequisite for admission to a professional school. **Preprofessional programs are career choices, not majors.** Most preprofessional course requirements can be met at any accredited college or university. However, preprofessional advising at Norwich University is one of the strengths of the Preprofessional Program. The university maintains a strong advising program for preprofessional students. The advisor and student will develop a list of appropriate electives along with the major curriculum map and extra-curricular activities. The preprofessional advising program is designed to enhance professional school admission opportunities and facilitate a student's transfer into professional school.

The Preprofessional Program implements structured curricula and specialized advising for numerous career areas. Each curriculum incorporates the courses required by the professional schools into the strong Norwich University liberal arts curriculum. These courses facilitate development of reading, writing, and critical thinking skills that provide the key to successful performance in professional schools and life-long learning. Sound preprofessional advising, the accessibility of the individual advisers, and frequent contact with professional school representatives keep students well informed about the admission requirements and the application process for each program.

### Choosing a Major

#### Preprofessional programs are career choices, not majors.

The majors that successful professional school applicants select are as diverse as the students themselves. Very few professional schools require, or even necessarily prefer, that applicants come from any particular undergraduate major. However, the liberal arts education that students receive at Norwich is an asset to any professional school applicant.

Preprofessional students should major in a subject that they enjoy and are thus more likely to perform well academically. A wise choice of major should take into account (1) what field holds the most interesting career prospects in the event that professional school plans do not materialize, and (2) the fact that majoring in something one enjoys, rather than feels compelled to pursue, is likely to stimulate the superior academic performance that is of utmost importance in professional school admission.

#### Preprofessional Concentration Suggested Majors

- Pre-Medicine Any major is acceptable; Biology and Biochemistry are popular
- Pre-Dentistry Any major is acceptable; Biology and Biochemistry are popular
- Pre-Physician Assistant Any major is acceptable; Biology and Biochemistry are popular
- Pre-Anesthesiologist Assistant Any major is acceptable; Biology and Biochemistry are popular
- Pre-Medical Technology Biology, Biochemistry, or Chemistry
- Pre-Pharmacy Chemistry or Biochemistry
- Pre-Occupational Therapy Health Sciences
- Pre-Physical Therapy Health Sciences or Biology
- Pre-Optometry Biology or chemistry
- Pre-Veterinary Medicine Biology

## Psychology

Charles A Dana Professor Melvin Miller; Professors Carole Bandy, Kevin Fleming (Interim Chair) and Johnnie Stones; Associate Professor Diane Byrne; Assistant Professor Matthew Thomas; Lecturer Mark Stefani; Adjunct Faculty Diane Ravenscroft.

The psychology program at Norwich has been designed to give the student major a broad based foundation in the discipline. Psychology is a scientific enterprise that attempts to articulate principles of human and animal behavior. These principles are formulated within the context of biological, socio-cultural, and environmental factors. Psychology is both a field of scientific inquiry and a professional activity: it shares its subject matter and its methods with the biological and social sciences, while simultaneously sharing some of the same concerns of the arts; namely, human motivation, emotion, aesthetic appreciation and experience, creativity, and the individual's relations to the world and humankind. Students at Norwich may explore the discipline from the experimental, personality/social, the developmental, and/or clinical perspectives. Upper level practica, internships, or field placements that permit the student practical work experience in a special interest area are encouraged.

The course work is designed to offer all students the opportunity to master the basic principles of scientific research and to investigate a wide variety of psychological topics. The program offers the psychology major the widest choice in career opportunities. In the past few years many students at the bachelor's degree level have found stimulating and interesting career opportunities in numerous fields (e.g. Elementary School Teachers, research or lab assistant, personnel administrator, probation and parole officer, newspaper reporter, customs inspector, recreation worker, advertising copywriter, media buyer, vocational rehabilitation). In addition, the program offers the psychology major an excellent preparation for most professional schools (e.g. law, medicine, education, business) and for graduate work in psychology. Students who Major in Psychology may also elect a Concentration in Neuroscience (p. 97) by taking additional courses in the College of Science and Mathematics.

A major in psychology must fulfill the General Education and Bachelor of Arts requirements (p. 26), including the Psychology courses listed in the Curriculum map.

**The following psychology courses with a grade of C or higher:**

PY 211	Introduction to Psychology	3
PY 220	Developmental Psychology	3
PY 313	Experimental Psychology I	3
PY 314	Experimental Psychology II	3
PY 360	History and Systems of Psychology	3
PY 398	Thesis Preparation	3
PY 401	Senior Seminar	3
PY 402	Conference (C or Satisfactory)	0
PY 403	Presentation (C or Satisfactory)	0
PY 498	Senior Thesis (Individual research project required for graduation.)	3

## B.A. in Psychology - Curriculum Map

<b>First Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
EN 101 Composition and Literature I	3	MA 232 Elementary Statistics	3
Modern Language	6	PY 220 Developmental Psychology	3
PY 211 Introduction to Psychology	3	Modern Language	6
Mathematics Elective (excluding MA 103)	3	EN 102 Composition and Literature II	3
	<b>15</b>		<b>15</b>
<b>Second Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PY 240 Introduction to Social Psychology	3	EN 202 World Literature II	3
PY 313 Experimental Psychology I	3	PY 241 Introduction to Personality Theory	3
EN 201 World Literature I	3	PY 263 Perception	3
PY 230 Biopsychology	3	PY 314 Experimental Psychology II	3
BI 101 Principles of Biology I	4	Laboratory Science	4
	<b>16</b>		<b>16</b>
<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
PY 212 Abnormal Psychology or 324 Adolescent Psychology	3	PY 344 Cognition	4
Literature/Humanities Elective	3	History Elective	3
Humanities Elective	3	Humanities Elective	3
Elective	3	Elective	3
Elective	3	PY 398 Thesis Preparation	3
		PY 402 Conference	0
	<b>15</b>		<b>16</b>

Fourth Year			
Fall	Credits	Spring	Credits
PY 360 History and Systems of Psychology	3	PY 401 Senior Seminar	3
PY 498 Senior Thesis	3	PY 403 Presentation	0
Humanities Elective	3	Elective	3
Social Science Elective	3	Elective	3
Elective	3	Elective	3
	<b>15</b>		<b>12</b>
Total Credits: 120			

### Cross-Cultural Psychology Minor

<b>A. Prerequisite</b>		3
PY 211	Introduction to Psychology	3
<b>B. Required Courses</b>		10
PY 236	Cross-Cultural Psychology	3
PY 240	Introduction to Social Psychology	3
PY 344	Cognition	4
<b>C. One of the following:</b>		3-4
PY 241	Introduction to Personality Theory	3
PY 263	Perception	3
PY 321	Organizational Psychology	3
PY 352	Learning and Memory	4
<b>D. Both of the following:</b>		6
SO 212	Cultural Anthropology	3
SO 214	Racial and Cultural Minorities	3
Total Credits		22-23

### Engineering Psychology Minor

<b>A. Prerequisite</b>		3
PY 211	Introduction to Psychology	3
<b>B. Required Courses</b>		10
PY 232	Engineering Psychology	3
PY 344	Cognition	4
PY 350	Environmental Psychology	3
<b>C. One of the following:</b>		3-4
PY 230	Biopsychology	3
PY 263	Perception	3
PY 352	Learning and Memory	4
<b>D. One of the following:</b>		3
PY 220	Developmental Psychology	3
PY 240	Introduction to Social Psychology	3
PY 241	Introduction to Personality Theory	3
PY 321	Organizational Psychology	3
Total Credits		19-20

### Forensic Psychology Minor

<b>A. Prerequisite</b>		3
PY 211	Introduction to Psychology	3
<b>B. Required Courses</b>		6



PY 234	Forensic Psychology	3
PY 355	Psychology and the Law	3
<b>C. Two of the following:</b>		<b>6</b>
PY 212	Abnormal Psychology	3
PY 220	Developmental Psychology	3
PY 240	Introduction to Social Psychology	3
PY 241	Introduction to Personality Theory	3
<b>D. Two of the following:</b>		<b>6-8</b>
PY 230	Biopsychology	3
PY 263	Perception	3
PY 344	Cognition	4
PY 352	Learning and Memory	4
Total Credits		21-23

### Political Psychology Minor

<b>A. Prerequisite</b>		<b>3</b>
PY 211	Introduction to Psychology	3
<b>B. Required Courses</b>		<b>13</b>
PY 238	Political Psychology	3
PY 240	Introduction to Social Psychology	3
PY 344	Cognition	4
PO 105	American Politics	3
<b>C. One of the following:</b>		<b>3</b>
PO 315	Public Opinion and Political Behavior	3
PO 333	American Foreign Policy	3
<b>D. One of the following:</b>		<b>3</b>
CM 304	Principles and Practices of Corporate Communications	3
PY 241	Introduction to Personality Theory	3
Total Credits		22

### Psychology Minor

<b>A. Prerequisite</b>		<b>6</b>
PY 211	Introduction to Psychology	3
PY 313	Experimental Psychology I	3
<b>B. At least two of the following:</b>		<b>6-11</b>
PY 212	Abnormal Psychology	3
PY 230	Biopsychology	3
PY 240	Introduction to Social Psychology	3
PY 241	Introduction to Personality Theory	3
PY 263	Perception	3
PY 344	Cognition	4
PY 352	Learning and Memory	4
<b>D. One course at the 200 level</b>		<b>3</b>
<b>C. One course at the 300 or 400 level</b>		<b>3-4</b>
Total Credits		18-24

### Sociology

Associate Professor Aimee Vieira; Assistant Professor Min Li

The Sociology minor provides students with a distinctive social perspective on the realities of everyday life and the relationships within societies, institutions, organizations, and groups. Students are introduced to methods of social science research and the social, cultural, and political dimensions of domestic and global issues. Students are also exposed to the interstices between sociology and other social and behavioral sciences.

## Sociology Minor

SO 201	Introduction to Sociology	3
SO 202	Problems of Modern Society	3
SO/CJ 209	Methods of Social Science Research (or one of the following social science methodology courses:)	4
HI 209	Historical Methods	3
PO 220	Research Methods	3
PY 313	Experimental Psychology I	3
PY 314	Experimental Psychology II	3
SO 212	Cultural Anthropology	3
or SO 214	Racial and Cultural Minorities	

Two Sociology electives including SO 300 Selected Topics, SO 212 or SO 214 if not taken previously; excludes SO 209/CJ 209. Sociology cross-listed courses (SO 320, SO 402) must be taken under the SO number to apply to the minor. 6

Total Credits 18/19

Criminal Justice majors pursuing a Sociology minor cannot count cross-listed courses other than CJ 209/SO 209 for both the major and minor.

## Spanish

Professor H. Stewart Robertson; Associate Professor Judith Stallings-Ward (Program Director); Assistant Professor Gina Sherriff; Adjunct Faculty Jose Miana.

The Spanish program at Norwich is designed to give students a thorough mastery of speaking, aural comprehension, and reading and writing skills, and a solid grounding in Hispanic literature and culture. All Spanish majors and minors are encouraged to combine their study at Norwich with a summer or semester in an approved overseas program where Spanish is spoken, thus enabling them to experience language immersion and gain additional insights into the Hispanic cultures and peoples.

### B.A. Spanish - Curriculum Map

First Year			
Fall	Credits	Spring	Credits
EN 101 Composition and Literature I	3	Math Elective (excluding 005, 103)	3
HI Elective (excluding HI 109)	3	SP 112 Beginning Spanish II	6
Math Elective (excluding 005, 103)	3	EN 102 Composition and Literature II	3
SP 111 Beginning Spanish I	6	EC/PY/HI/SO or PO Elective (At least one of EC/PY/HI/SO or PO electives must be in a discipline other than History (HI)).	3
	<b>15</b>		<b>15</b>
Second Year			
Fall	Credits	Spring	Credits
PH Elective (Must satisfy the General Education ethics requirement.	3	EN 202 World Literature II	3
Lab Science Elective	4	SP 206 Intermediate Spanish II	3
EN 201 World Literature I	3	Lab Science Elective	4
SP 205 Intermediate Spanish I	3	Elective	3
Elective	3	Humanities Elective	3
	<b>16</b>		<b>16</b>

<b>Third Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
SP 301 Advanced Spanish I	3	Elective	3
EC/PY/HI/SO or PO Elective (At least one of EC/PY/HI/SO or PO electives must be in a discipline other than History (HI).	3	SP Elective	3
Elective	3	SP 302 Advanced Spanish II	3
Humanities Elective	3	EC/PY/HI/SO or PO Elective (At least one of EC/PY/HI/SO or PO electives must be in a discipline other than History (HI).	3
SP Elective	3	Humanities Elective	3
	<b>15</b>		<b>15</b>
<b>Fourth Year</b>			
<b>Fall</b>	<b>Credits</b>	<b>Spring</b>	<b>Credits</b>
Elective	3	Elective	3
EC/PY/HI/SO or PO Elective (At least one of EC/PY/HI/SO or PO electives must be in a discipline other than History (HI).	3	SP Elective	3
Elective	3	Elective	3
SP Elective	3	Elective	3
SP Elective	3	SP 415 Seminar: Topics in Spanish or Latin-American Literature and Culture	3
	<b>15</b>		<b>15</b>
Total Credits: 122			

NOTE: ROTC as required are in addition to the above requirements.

### Spanish Minor

Consists of six courses completed with a grade of C or higher.

SP 205	Intermediate Spanish I	3
SP 206	Intermediate Spanish II	3
Four additional courses numbered SP 301 or higher		12
Total Credits		18

## Sports Management Concentration--Management Major

Associate Professor Jolley, Assistant Professor Roberge, Adjunct Instructor Tanjian Liang

This concentration is designed to add depth and breadth to the Management major offering students an opportunity to develop the knowledge, skill, and disposition needed to work as managers in several sport or recreation positions such as Athletic, Recreation, or Camp Directors; or directors of Sports Facilities or commercial and/or workplace Wellness Programs. Students will take additional coursework in sport leadership, business management, and sport facilities management.

### Sports Management Concentration Courses

MG 441S	Integrated Marketing Communications	3
MG 305	Introduction to Sports Management	3
PE 107	Foundations of Physical Education	3
PE 333	Management Sports Facilities	3
PE 432	Organization and Administration in Physical Education	3
PE 426	Internship	6,12

### Major/Concentration Electives--Choose two from the following list:

AC  
MG

IS		
EC		
FN		
QM		
CP		
MA 240	Introduction to Number Theory and Cryptology	3
MA 318	Cryptology	3
MA 370	Introduction to Operations Research	3
CJ 341	Cyber Law and Cyber Crime	3
CJ 442	Introduction to Computer Forensics	4
PY 210	Psychology of Leadership	3
AS 311	Air Force Leadership Studies	3
AS 312	Air Force Leadership Studies	3
AS 411	National Security Affairs/Preparation for Active Duty	3
AS 412	National Security Affairs/Preparation for Active Duty	3
NS 321	Naval Ship Systems I	3
NS 342	Small Unit Leadership Skills	2
NS 421	Naval Operations and Seamanship	3
NS 422	Leadership and Ethics	3
MS 311	Military Science III	3
MS 312	Military Science III	3
MS 411	Military Science IV	3
MS 412	Military Science IV	3
Modern Foreign Languages		

## Sports Management Minor

Students seeking a minor in Sports Management must obtain the approval of the School Director and must complete all of the six courses listed below, each with a grade of C or higher.

AC 201	Introduction to Accounting and Financial World	3
MG 305	Introduction to Sports Management	3
MG 314	Marketing Management	3
MG 441S	Integrated Marketing Communications	3
PE 333	Management Sports Facilities	3
PE 426	Internship (Sports Management Placement)	6,12
Total Credits		21-27

## Studies in War and Peace

Program Coordinator: Steve Sodergren

The purpose of a BA in Studies in War and Peace (SWAP) is to offer an opportunity to examine the origins and development of military institutions and the impact of those institutions upon the social order. Intellectually, the program is intended to promote critical analysis of phenomena relating to military and diplomatic affairs. Practically, the program is intended to prepare students for a career in government service or for entry into graduate or professional school. This academic program is equally suitable for civilian students or cadets, and aims at providing an interdisciplinary examination of the enduring and close interconnections among military, political, economic, and social institutions. The SWAP program is an extension of the Norwich University tradition of producing educated citizens who are prepared for either military or civilian pursuits, and who are knowledgeable about diplomatic and military affairs.

### B.A. in Studies in War and Peace (SWAP) - Required Courses

#### SWAP CORE COURSES (15 Courses)

All courses except External Elective must be completed with a grade of C or higher.

Two of the following:

HI 107 The History of Civilization I	3
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HI 108	The History of Civilization II	3
HI 121	American History I	3
HI 122	American History Survey II	3
HI 235	Military History I	3
HI 236	Military History II	3
PO 105	American Politics	3
PO 202	Introduction to Comparative Politics	3
or PO 215	International Relations	3
External Elective:		
EN 112	Public Speaking	3
EC 106	The Structure and Operation of the World Economy	3
EC 201	Principles of Economics (Macro)	3
EC 202	Principles of Economics (Micro)	3
SO 201	Introduction to Sociology	3
CM 261	Interpersonal Communications	3
Core Electives: any of the following courses, at least two of which must be a PO and at least one HI:		
HI 322	Colloquium in Early Modern European History	3
HI 334	The Citizen-Soldier in American History	3
HI 338	U.S. Diplomatic History, 1776-1914	3
HI 339	U.S. Diplomatic History, 1914-present	3
HI 341	U.S. Civil War Era, 1848-1877	3
HI 355	Colloquium in Modern Military History	3
HI 371	Nation-Building	3
HI 372	Military History of the United States I, 1775-1902	3
HI 373	Military History of the United States II, 1902-Present	3
HI 3XX: One of the following SWAP designated Colloquium		
HI 303	Colloquium in Ancient History	3
HI 304	Colloquium in Medieval History	3
HI 319	Colloquium in Chinese History	3
HI 322	Colloquium in Early Modern European History	3
HI 333	Colloquium in Early American History	3
HI 340	Colloquium in Twentieth Century United States History	3
HI 345	Colloquium in the History of the Middle East & Northeast Africa	3
HI 355	Colloquium in Modern Military History	3
PO 305	Geopolitics	3
PO 310	European Politics	3
PO 330	American Citizenship	3
PO 333	American Foreign Policy	3
PO 340	Revolution and Forces of Change	3
PO 348	Asian Politics	3
PO 405	International Organizations	3
PO 415	International Law	3
SO 330	Military Sociology	3
International Affairs/Area Studies Electives: Complete any THREE European, Non-Western, or Pre-modern History courses, of which only one may be from the 200-level and at least one must be designated as Pre-modern or Non-Western. (SWAP designed PO 320: Topics in Area Studies courses may also satisfy this requirement.)		
Seminar (choose one of the following; may not be double counted as Capstone for other program.)		
HI 4XX:	SWAP designated HI Seminar	3
IN 410	Seminar in International Studies	3
HI 490	Honors in History I and HI 491 Honors in History II	6
PO 4XX	SWAP designated PO Seminar	3

PO 412	War and Peace	3
PO 490 Honors in Political Science and PO 491 Honors in Political Science		6

## B.A. Studies in War and Peace – Curriculum Map

First Year			
Fall	Credits	Spring	Credits
EN 101 Composition and Literature I	3	Humanities Course	3
PO 105 American Politics	3	EN 102 Composition and Literature II	3
Modern Language	6	undefined	
HI 107 The History of Civilization I	3	Modern Language	6
or HI 121 American History Survey I		HI 108 The History of Civilization II	3
undefined		or HI 122 American History Survey II	
		undefined	
	15		15
Second Year			
Fall	Credits	Spring	Credits
Humanities course	3	EN 202 World Literature II	3
Mathematics (except MA 103)	3	HI 236 Military History II	3
PO 202 Introduction to Comparative Politics	3	Free Elective	3
or PO 215 International Relations		Mathematics (except MA 103)	3
HI 235 Military History I	3	External Elective	3
EN 201 World Literature I	3		
	15		15
Third Year			
Fall	Credits	Spring	Credits
Lab Science	4	Lab Science	4
International Affairs	3	Humanities Elective	3
Free Elective	3	Core Elective	3
Humanities Elective	3	Free Elective	3
Core Elective	3	Free Elective	3
	16		16
Fourth Year			
Fall	Credits	Spring	Credits
Seminar	3	Free Elective	3
Core Elective	3	Core Elective	3
International Affairs	3	International Affairs	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	15		15
Total Credits: 122			

## Writing

The Writing Minor or Concentration exposes students to a plethora of cross-disciplinary writing opportunities. Students will develop the skills necessary for writing in all realms: civic life, employment, graduate school, and beyond. They will increase their creativity and innovation in all writing undertakings.



Students will gain experience in collaboration, problem solving, innovation, and new media literacy. This minor/concentration permits students to document formally their acquisition of these rhetorical skills.

### Writing Concentration and Writing Minor

The writing concentration is offered to English majors who wish to focus their studies on writing. Although the requirements are the same, English majors will pursue a Writing concentration, rather than a Writing minor.

Communications majors who pursue a Writing minor may only use three courses that satisfy both the Communications major and the Writing minor.

Complete the following 200 level courses:

EN 203	Advanced Composition	3
EN 274	Introduction to Creative Writing	3

And ONE of the following 300 level course:

EN 362	Rhetorical Criticism	3
EN 364	Intermediate Creative Writing	3

Plus THREE courses from the following:

EN 204	Professional and Technical Writing	3
EN 272	Veterans' Literature and Writing	3
EN 278	Writing for the Web	3
EN 276	Environmental Writing	3
EN 362 (if not taken above)		
EN 364 (if not taken above)		
CM 207	Journalism I: News Gathering	3
CM 208	Journalism II: Advanced News Gathering and Design	3
CM 209	Broadcast Writing	3
CM 335	Television Criticism	3

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Total Credits		18
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## Course Descriptions

### Accounting (AC)

#### Courses

##### **AC 201 Introduction to Accounting and Financial World 3 Credits**

This course is designed strictly for the non-business major. It is a survey course of accounting and financial concepts, including the basic accounting equation, financial statement structure, financial statement analysis, cost structures (fixed/variable/breakeven analysis/overhead), cost systems, an introduction to basic capital markets, working capital management and present value concepts. Whenever possible the materials used in this class will use the context of the individual student's major area of study or future professional area of employment. 2 lecture hours and 2 laboratory hours.

##### **AC 205 Principles of Accounting-Financial 4 Credits**

An introduction to accounting principles and theory for the sole proprietorship. The recording of business transactions through the accounting cycle, from journalizing, posting, adjusting, and closing entries through work papers and preparation of financial statements, is studied. Related topics include: internal control, receivables and payables, the control of cash transactions, inventories, depreciation, intangible assets, and payroll accounting. Ethical business practices and client privacy issues are stressed throughout all phases of the course.

##### **AC 206 Principles of Accounting-Managerial 4 Credits**

The completion of the study of financial accounting and an introduction to and emphasis on managerial accounting. Topics covered include: partnerships, corporations, earnings per share, dividends, bonds payable, the Statement of Cash Flows, the analysis and interpretation of financial statements, the budgeting process and cost accounting concepts. Protection of proprietary information and information security is reinforced throughout the course. Prerequisite: AC 205.

##### **AC 335 Intermediate Accounting I 3 Credits**

Building on the foundations of Principles of Accounting the course provides a more in-depth study of accounting theory and practice. Beginning with a brief review of the accounting process, the course delves into the conceptual framework for accounting, the accounting standards setting process, and the hierarchy of accounting pronouncements. The course then explores the components of the financial statement package including such issues as the quality of earnings and the measurement and reporting of unusual, infrequent, and non-operating items; the Statement of Cash flows is also studied in depth. Accounting, reporting, and valuation issues surrounding cash, receivables, inventory and long-term assets are also covered including the impairment of tangible and intangible assets. Prerequisite: A grade of "C" or better in AC 205 and AC 206.

##### **AC 336 Intermediate Accounting II 3 Credits**

A continuation of the in-depth study of accounting theory and practice begun in Intermediate Accounting I. The course addresses the valuation, accounting, and reporting of both short and long-term investment securities, current and contingent liabilities, notes and bonds payable, and shareholders' equity. In addition, the accounting for leases, income taxes, pensions, stock-based compensation, earning per share, and accounting changes are also studied. Prerequisite: AC 335 or AC 205 and AC 206 with a grade of "C" or better and permission of the instructor.

##### **AC 419 Taxation I 3 Credits**

Designed to introduce the student to certain elementary tax concepts: tax rate structure, exemptions, deductible versus non-deductible expenses, depreciation basis, capital gains and losses, tax credits, withholding, and computation of the personal income tax. Within the context of the personal income tax, planning considerations will be stressed as well as legal and ethical issues concerning client confidentiality. Prerequisites: AC 205 and AC 206 with a grade of "C" or better.

##### **AC 428 Auditing 3 Credits**

A study of the auditing environment, including legal liability and professional ethics begins with the concept of auditing and the auditing profession. Additional topics concerning the audit process, including internal control, evidence, sampling and EDP auditing and specific audit procedures are examined. In addition the nature and types of auditors' reports are studied. Prerequisites: AC 336 or permission of the instructor. 3 lecture hours.

##### **AC 441 Cost Accounting 3 Credits**

A study of the basic elements of cost accounting concepts and procedures. Emphasis is on how cost data can be used as management tools. Cost behavior and control, cost-volume-profit relationships, job and process costing, activity-based accounting, budgeting and responsibility accounting, flexible budgeting and standards, income effects of alternative costing methods and cost behavior, costs and the decision process, and philosophy and organization of the master budget are analyzed. Prerequisite: AC 206.

##### **AC 442 Advanced Accounting 4 Credits**

An advanced course emphasizing accounting theory and practical applications in selected areas. Such areas include: partnerships, branches, business combinations, consolidated financial statements, segment reporting, forecasts, multinational companies, bankruptcy, and accounting for governmental units and other non-profit entities. Prerequisite: AC 336.

##### **AC 450 Internship in Accounting 3 Credits**

The internship program is designed for students who want to apply their studies by working in a public accounting firm or in private accounting within a business, industry, or public agency. The student will be required to work closely with a faculty supervisor to develop and implement a structured experience tailored to the career goals of the student. Prerequisites: junior or senior standing and written consent of the department chair and internship committee.

### Architecture (AP)

#### Courses

##### **AP 106 Architectural Drafting 3 Credits**

Techniques of architectural drafting are introduced as basic skills used to describe architectural form. The various graphic tools, techniques, and conventions are presented and the rationale behind their use is explained. In addition to the basic graphic constructions and multi-view projections, the methods of developing architectural plans, elevations, and sections are addressed. This course is primarily intended for students who have had little or no prior introduction to mechanical and architectural drafting. One hour of lecture and three 3-hours of studio per week. 1 lecture hour and 3 studio hours.

**AP 111 Fundamentals of Architecture 4 Credits**

An introduction to the basic principles and skills that constitute the discipline of architecture. A series of two and three dimensional graphic exercises is used to cultivate an understanding of architectonics, the intentional arrangement of space and enclosure to communicate human values while also introducing graphic techniques for communicating concepts and solutions. One hour of lecture and three 9-hour studios per week.

**AP 118 Fundamentals of Architecture II 4 Credits**

A continuation of the introduction to the fundamental processes and technologies that constitute the discipline of architecture. This course investigates the design process, explores interactive computer graphics (CAD) as a design tool, and culminates with the application of these principles, processes, and skills to an architectural design problem. One hour of lecture and 9 hours of studio per week. Prerequisite: AP 111.

**AP 211 Architectural Design I 5 Credits**

The first in a sequence of design studio courses introducing the processes, judgment, and communications involved in the synthesis of architectural form. Through a focused series of individual and group projects, the influences of the human and physical contexts on form are explored. One hour of lecture and three 4-hour studios per week. Prerequisite: AP 118. 1 lecture hour and 12 studio hours.

**AP 212 Architectural Design II 5 Credits**

Second in a sequence of design studio courses emphasizing the processes, judgment, and communications involved in the synthesis of architectural form. Through a focused series of individual and/or group projects, the influences of functional requirements on form are explored. One hour of lecture and three 4-hour studios per week. Prerequisite: AP 211. 1 lecture hour and 0 to 12 studio hours.

**AP 221 Site Development and Design 3 Credits**

A course that deals with engineering principles and design considerations involved with site design. Earth shaping, drainage, roadway alignment, parking lot layouts, code requirements and environmental factors are studied prior to and after design changes. Two hours of lecture and one 2-hour studio per week. 2 lecture hours and 2 studio hours.

**AP 222 Human Issues in Design 3 Credits**

An introduction to the psychological, sociological, and physical factors that influence the design of architectural space. The fields of anthropometrics, ergonomics, and proxemics are addressed, as well as considerations for barrier-free environments. Three hours of lecture/discussion per week. 3 lecture hours.

**AP 225 Introduction to Passive Environmental Systems 3 Credits**

Through coordinated lectures and demonstrations, the impacts of environmental energies on architectural form are introduced and explored. Emphasis is given to the processes by which the architect orders light, climate, gravity, and sound responses to achieve building geometry. The course also addresses concepts and strategies for responding to environmental hazards, and designing healthy buildings and green architecture. Three hours of lecture. Prerequisite: AP 118, EG 110 or instructor's permission. 3 lecture hours.

**AP 241 Architectural Delineation 3 Credits**

A studio course in advanced graphic methods. Various rendering techniques, definitive design development, and the principles of construction drawings and architectural detailing are presented and explored through individual projects. One hour of lecture and two 2-hour studios per week. 1 lecture hour and 4 studio hours.

**AP 311 Architectural Design III 5 Credits**

The development of the comprehensive building process as a synthesis of spatial, functional, and contextual concerns with emphases on building systems and materials. Individual and group problems are of a limited and defined scope. One hour of lecture and three 4-hour studios per week. Prerequisites: AP 212 and AP 325. Corequisites: AP 327.

**AP 312 Architectural Design IV 5 Credits**

This fourth course in the design studio sequence continues the development of a comprehensive building design process with problems of complex but limited scope. The synthesis of spatial, functional, and contextual concerns, as directly linked to the understanding and employment of building systems, continues to provide a framework. One 1-hour lecture and three 4-hour studios per week. Prerequisite: AP 311. 1 lecture hour and 12 studio hours.

**AP 325 Materials, Construction, and Design 3 Credits**

An introduction to the processes by which construction materials and systems are evaluated, selected, incorporated, and detailed in building design. Both measurable and immeasurable design responses to environmental energies are explored in soils, concrete, masonry, wood, and metals. Three hours of lecture per week. Prerequisite: AP 225. 3 lecture hours.

**AP 327 Active Building Systems I 3 Credits**

A survey of contemporary mechanical building equipment and systems, including heating, ventilation and air conditioning. Emphasis is placed on comparisons of design parameters, interfaces, and impacts on overall building form. Energy efficiency is addressed. Prerequisites: AP 225 and MA 107. 3 lecture hours.

**AP 328 Active Building Systems II 3 Credits**

A continuation of AP 327, surveying contemporary electrical, lighting, and plumbing equipment and systems. Emphasis is placed on comparisons of design parameters, interfaces, and impacts on overall building form. Energy efficiency and building codes are addressed. Prerequisite: AP 327. 3 lecture hours.

**AP 403 Architectural Seminar in History and Theory 3 Credits**

As both an art and a science, the profession of architecture is continually undergoing change and reassessment. This elective seminar focuses on one or more specific issues and topics regarding the historic and philosophical contexts that influence architecture today. Typically these topics range from the study of specific historic periods or schools of thought regarding design to the diverse trends in current architectural thinking. AP 504 shall require a graduate-level paper or project. This course may be repeated for credit. Three hours of lecture/discussion per week. 3 lecture hours.

**AP 406 Architectural Theory 3 Credits****AP 411 Architectural Design V 5 Credits**

Comprehensive problem-oriented design studio offered to fourth year students by various faculty members. The extension of the comprehensive design proves to include problems of an expanded scope and large scale, including building complexes and urban design. Individual and group problems emphasize the complex relationships of environmental factors, human concerns, and architectural form. This studio is considered the undergraduate capstone course in the undergraduate portion of the Architecture Program. A design portfolio, covering all seven semesters of studio work and including a written paper, is required to be submitted at the completion of this course. Prerequisite: AP 312. 1 lecture hour and 12 studio hours.

**AP 412 Architectural Design VI 5 Credits**

Elective problem-oriented studios offered to fourth year students by various faculty members. The extension of the comprehensive design process to include problems of expanded scope and large scale, including building complexes and urban design. Individual and group problems emphasize the complex interrelationships of environmental factors, human concerns, and architectural form. One hour of lecture and three 4-hour studios per week. Prerequisite: AP 312. 1 lecture hour and 12 studio hours.

**AP 414 Architectural Seminar In Design 3 Credits**

This elective seminar investigates in a non-studio setting one or more specific concepts, issues, or topics related to architectural design and its associated disciplines, such as urban, landscape, interior, and visual design. AP 514 shall require a graduate level paper or project. This course may be repeated for credit. Three hours of lecture/discussion per week. Prerequisite: approval of instructor. Cross listed with AP 520.

**AP 424 Architectural Seminar in Technology 3 Credits**

As both an art and science, the profession of architecture is continually undergoing change and reassessment. This elective seminar focuses on one or more of the specific issues, topics, or skills related to technologies in architecture today. Typically, these specific semester topics range from advanced materials and construction systems to energy-conserving design; from environmental issues to hands-on building experiences. AP520 shall require a graduate-level paper or project. This course may be repeated for credit. Three hours of lecture/discussion per week. Prerequisites: AP114, AP325, or approval of instructor. Cross listed with AP520.

**AP 434 Architectural Seminar in Process 3 Credits**

As both an art and science, the profession of architecture is continually undergoing change and reassessment. This elective seminar focuses on one or more specific topics regarding the current and future practice of architecture: what architects do, and how they do it. Typically, these topics range from design techniques to office management and from specialties within the practice, to the legal environmental, and social forces that influence it. AP 534 seminar shall require a graduate-level paper or project. This course may be repeated for credit. Three hours of lecture/discussion per week. Prerequisite: instructor's approval. Cross listed with AP 534.

**AP 436 Project Delivery and Documentation 4 Credits**

Relationships between the formal methods of project delivery and the architectural office form the basic investigation of this course. The project delivery process and the methods of communication and the documentation involved provide a detail study of typical office procedures. The studio component of this course provides practical experience of the typical project delivery process. Documentation is approached as the fundamental means of architectural communication. This communication is multi-layered acting as a foundation for the means of production of contemporary architecture. Various tools will be utilized ranging from computer aided design to conceptual organization schema in both the practice of typical architectural project delivery and the development of new means of communication and production. Two hours of lecture and four hours of studio per week. 2 lecture and 4 studio hours.

**AP 455 Special Projects in Architecture 1-3 Credit**

An execution of a singular project related to architectural design, history/theory, process, or technology selected by the individual student. The course focuses on in-depth independent research, development, and a formal written and/or graphic presentation of an architecturally-related topic not otherwise covered in course offerings. The student must secure a faculty member who will agree to serve as advisor/evaluator for the project. Limited to Architecture majors who have completed at least the first two years of the curriculum. Hours and credits to be arranged. 1 to 3 lecture hours.

**AP 456 Senior Project 4 Credits****AP 499 Sketching School 3 Credits****AP 499L Advanced Seminar: Sketching 0 Credits**

## Aerospace Studies (AS)

### Courses

**AS 101 The Foundations of the United States Air Force 1 Credit**

Basic introduction to the United States Air Force and Air Force Reserve Officer Training Corps. Topics: mission and organization of the Air Force, officership and professionalism, military customs and courtesies, Air Force opportunities, group leadership problems, and communication skills. Includes: Lecture (1 hour). Students pursuing an Air Force commission must also register for AS101 LL1, which includes 2 hours of Leadership Laboratory and 3 hours of Physical Training, weekly. Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**AS 102 The Foundations of the United States Air Force 1 Credit**

A continuation of AS101, introducing the United States Air Force and Air Force Reserve Officer Training Corps. Topics: mission and organization of the Air force, officership and professionalism, military customs and courtesies, Air Force opportunities, group leadership problems, and communication skills. Prerequisite: AS101 or equivalent with a "C" or better. This requirement may be waived by the Aerospace Studies Instructor. Includes: Lecture (1 hour). Students pursuing an Air Force commission must also register for AS102 LL1, which includes 2 hours of Leadership Laboratory and 3 hours of Physical Training, weekly. Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**AS 201 The Evolution of USAF Air and Space Power 1 Credit**

Focuses on the history of airpower and the military doctrine for its employment. Topics: Air Force heritage, Air Force leaders, general aspects of air and space power, and communication skills. Prerequisite: Must have successfully completed AS101 and AS102 or equivalent with a "C" or better. This requirement may be waived by the Aerospace Studies Instructor. Includes: Lecture (1 hour). Students pursuing an Air Force commission must also register for AS201 LL1, which includes 2 hours of Leadership Laboratory and 3 hours of Physical Training, weekly. Courses Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.



**AS 202 The Evolution of USAF Air and Space Power 1 Credit**

A continuation of AS201 focusing on the history and uses of airpower through the late 20th century and into the 21st century. Topics: Airpower doctrine and strategy, and communication skills. Prerequisite: AS201 or equivalent with a "C" or better. This requirement may be waived by the Aerospace Studies Instructor. Includes: Lecture (1 hour). Students pursuing an Air Force commission must also register for AS202 LL1, which includes 2 hours of Leadership Laboratory and 3 hours of Physical Training, weekly. Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**AS 311 Air Force Leadership Studies 3 Credits**

A study of leadership and management fundamentals, professional knowledge, ethics, and communication skills required of an Air Force officer. Prerequisite: Must pass AS202 or equivalent with a "C" or better. This requirement may be waived by the Aerospace Studies Instructor. Includes: Lecture (3 hours). Students pursuing an Air Force commission must also register for AS311 LL1, which includes 2 hours of Leadership Laboratory and 3 hours of Physical Training, weekly. Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**AS 312 Air Force Leadership Studies 3 Credits**

A continuation of AS311 focusing on leadership and management fundamentals, professional knowledge, ethics, and communication skills. Prerequisite: Must pass AS311 or equivalent with a "C" or better. This requirement may be waived by the Aerospace Studies Instructor. Includes: Lecture (3 hours). Students pursuing an Air Force commission must also register for AS312 LL1, which includes 2 hours of Leadership Laboratory and 3 hours of Physical Training, weekly. Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**AS 411 National Security Affairs/Preparation for Active Duty 3 Credits**

Examines the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Topics: officership as a profession, military justice, civil-military relations, preparation for active duty, and current issues affecting the military profession. Enrollment restricted to students pursuing a commission. Prerequisite: AS312. Includes: Lecture (3 hours). Students must also register for AS411 LL1. Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**AS 412 National Security Affairs/Preparation for Active Duty 3 Credits**

A continuation of AS411 focusing on the national security process, regional studies, advanced leadership ethics, and Air Force doctrine. Topics: officership as a profession, military justice, civil-military relations, preparation for active duty, and current issues affecting the military profession. Enrollment restricted to students pursuing a commission. Prerequisite: AS411. Includes: Lecture (3 hours). Students must also register for AS411 LL1. Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

## Biology (BI)

### Courses

**BI 101 Principles of Biology I 4 Credits**

This course is the prerequisite for all biology courses and satisfies general education laboratory science requirements for both majors and non-majors. This course gives an introduction to biochemistry, cell structure, metabolism, and protein synthesis, as well as human anatomy and physiology. Dissection of living and preserved animals is required. Classroom 3 hours, laboratory 2 hours. Offered fall and spring semesters.

**BI 102 Principles of Biology II 4 Credits**

This course is a prerequisite for most biology courses and satisfies general education laboratory science requirements for both majors and non-majors. This course explores genetics, evolutionary theory, diversity of life on earth, history of life on earth, and ecology. Dissection of preserved animals is required. Classroom 3 hours, laboratory 2 hours. Prerequisite: BI 101 or permission of the instructor. Offered spring semesters.

**BI 122 Concepts in Biology 4 Credits**

A lab science course designed exclusively for non-science majors that aims to give students an appreciation of the major concepts and current topics in biology. Concepts may include cell structures, photosynthesis, cellular respiration, genetics and ecology as well as human anatomy and physiology. Current topics may include stem cell research, nutrition, diseases, steroid abuse, traumatic brain injury, global climate change, and other pertinent issues. The course meets the general education requirement for laboratory science, but cannot be counted towards a biology major or minor. Credit may not be earned for both BI 101 and BI 122. Classroom 3 hours, laboratory 2 hours. Offered spring semesters.

**BI 201 Comparative Vertebrate Anatomy 4 Credits**

A study of the origins, structure and functions of the organ systems of representative vertebrates. An attempt is made to correlate form and function in the evolution of the vertebrates. Classroom 3 hours, laboratory 3 hours. Prerequisites: BI 101, BI 102. Offered fall semesters of odd numbered years.

**BI 202 Genetics 4 Credits**

The physical and chemical basis of inheritance, expression, and interaction of the hereditary units, linkage, and variation. The application of Mendelian principles to plants and animals. Consideration is also given to microbial and viral genetics and genetic engineering. Classroom 3 hours, laboratory 2 hours. Prerequisites: BI 101, BI 102. Offered fall semesters.

**BI 203 Introduction to Scientific Method & Bioscientific Terminology 1 Credit**

An introduction to the philosophy of science, the scientific method and bioscientific terminology. Analysis of data and interpretation of scientific and science-related popular press articles is stressed. Includes exposure to various forms of scientific communication and data collection and analysis. Prepares the student for the rigors of majoring in the biological sciences. Classroom 1 hour. Prerequisites: Sophomore standing, major in Biology.

**BI 215 Human Anatomy and Physiology 4 Credits**

This is the first half of a two semester course exploring human anatomy and physiology. It covers cellular metabolism, tissues, and the following body systems: skeletal, muscle, coelomic, and nervous. Dissection of preserved animals is required. Classroom 3 hours, laboratory 2 hours. Prerequisite: BI 101 or permission of the instructor. Offered fall semesters.

**BI 216 Human Anatomy and Physiology 4 Credits**

This is the second half of a two semester course exploring human anatomy and physiology. It investigates the following body systems: endocrine, digestive, respiratory, circulatory, lymphatic (including the immune response), urinary, and reproductive. Dissection of preserved animals is required. Classroom 3 hours, laboratory 2 hours. Prerequisite: BI 215 or permission of the instructor. Offered spring semesters.

**BI 220 Introductory Microbiology 4 Credits**

A survey of the field of microbiology with emphasis on those microorganisms of medical significance. Fundamentals of microbial structure, physiology and control are considered along with the role of pathogenic organisms in the infectious and disease processes. Laboratory exercises are designed to provide facility in visualizing, staining, culturing, enumerating, isolating, maintaining, and identifying micro organisms. Classroom 3 hours, laboratory 2 hours. Prerequisite: BI 101 or permission of the instructor. Offered spring semesters.

**BI 240 Environmental and Food Microbiology 4 Credits**

A course designed to develop an awareness of the essential role of microbes in maintaining the biosphere and the quality of life of its human inhabitants. The role of microorganisms as degraders, bioremediators and recyclers of essential elements will be presented and reinforced through laboratory exercises. The dependence of humans on microorganisms for health, food transformation, pharmaceutical production and genetic engineering will be explored in lecture and lab. Controversies surrounding the use of biotechnology to produce genetically engineered foods and animals as well as agents for bioterrorism, will be discussed. Classroom 3 hours, laboratory 2 hours. Prerequisites: BI 101, BI 102 or permission of the instructor. Offered even-numbered fall semesters.

**BI 253 Foods and Nutrition 4 Credits**

A course designed to provide the student with a background in organizational structure and activities that emphasize the physiological basis of nutrition with an analysis of nutritional needs at various age levels. Consideration given to the relationship of nutrition to health and fitness, principles of food selection, metabolism of nutrients, vitamins and minerals, energy balance and obesity, food safety and technology. Classroom 3 hours, Field Experience/Laboratory 2 hours. Prerequisite: BI 101. Offered spring semesters.

**BI 260 Ornithology 4 Credits**

A survey of avian biology and ecology to include evolution, the anatomical and physiological adaptations for flight, migration, behavior, reproduction and identification of birds and their songs. Integrated classroom, laboratory, and field studies will emphasize Vermont birds. Dissection of the pigeon during the spring semester is an integral part of the spring course's laboratory component. The summer course features a nesting study in lieu of dissection. Classroom 3 hours, laboratory 2 hours. Offered spring semesters.

**BI 275 Environmental Biology 4 Credits**

An introduction to the interaction of man and the environment with emphasis on contemporary problems and their possible solutions. Local and global forms of pollution, detrimental environmental practices, and other relationships will be explored in the classroom and the laboratory. Classroom 3 hours, laboratory 2 hours. Prerequisites: BI 101, BI 102 or permission of the instructor. Offered even-numbered spring semesters.

**BI 302 Embryology 4 Credits**

A study of the fundamental principles of development through the establishment of the major organs and systems, exemplified in the laboratory by study of representative embryonic forms. May require dissection of living and preserved animals. Classroom 3 hours, laboratory 2 hours. Prerequisite: BI 101, BI 102 or permission of instructor. Offered even-numbered spring semesters.

**BI 304 Physiology 4 Credits**

A study of the comparative physiology of animals. Physical and chemical principles, cell physiology, with emphasis on homeostatic mechanisms and the study of functions of organ systems. May require dissection of living animals. Classroom 3 hours, laboratory 3 hours. Prerequisites: BI 101, BI 102, and 1 year of college chemistry. Offered even-numbered spring semesters.

**BI 305 Biomedical Techniques 4 Credits**

Students are familiarized with the theories and applications of the new technologies that pervade the fields of biotechnology and molecular biology. Laboratory exercises illustrate key concepts and provide hands-on experience in the use of instrumentation essential to molecular biologists. Classroom 2 hours, laboratory 4 hours. Prerequisites: BI 101, BI 102 or BI 215, BI 216, and CH 103, CH 104. Offered odd numbered fall semesters.

**BI 306 Cell Biology 4 Credits**

A molecular level examination of the ultrastructure and function of the cytoplasm, intracellular components, cell membrane, extracellular structures and formation, and excretion of extracellular products. Recent developments in molecular biology will be stressed, including the implications for the biotechnology industry. The laboratory component will include state-of-the-art procedures and will emphasize hands-on experimental techniques. May require dissection of living animals. Classroom 3 hours, laboratory 3 hours. Prerequisites: BI 101, BI 102 and one year of college chemistry. Offered even-numbered fall semesters.

**BI 316 Plant Taxonomy 4 Credits**

A general survey of the taxonomy and evolution of vascular plants, emphasizing herbaceous plants. Recognition of plant families, identification of species, and principles of collecting and preserving are stressed. Classroom 3 hours, laboratory 3 hours. Prerequisite: BI 102 or permission of instructor. Offered even-numbered fall semesters.

**BI 325 Invertebrate Zoology 4 Credits**

A fundamental course designed to give the student a general knowledge of the structure, physiology, life histories, and ecology of the invertebrate animals. Requires dissection of living and preserved animals. Classroom 3 hours, laboratory 2 hours. Prerequisites: BI 101, BI 102. Offered even-numbered fall semesters.

**BI 326 Natural History of the Vertebrates 4 Credits**

A study of the classification, identification, and ecology of the vertebrates with special emphasis on the local fauna. Collection and preservation of organisms is an integral part of the course. Classroom 3 hours, laboratory 3 hours. Prerequisites: BI 101, BI 102. Offered odd-numbered fall semesters.

**BI 330 Immunology 4 Credits**

A course presenting the basic principles of immunology, including antigen-antibody characteristics, the role of the immune system in defense and disease, and the application of fundamental concepts in the development of new technologies and immunodiagnosis. Classroom 3 hours, laboratory 3 hours. Prerequisites: BI 101, BI 102 or BI 215, BI 216, and 1 year of college chemistry. Offered odd-numbered spring semesters.

**BI 341 Plant Anatomy 4 Credits**

[CAB1 (A), CAB2 (B), CAB5 (S)] The anatomy of vascular plants analyzed from an evolutionary viewpoint. Cell structure, tissues, their distribution in roots, stems, leaves and reproductive organs, and plant development are stressed. Classroom 3 hours, laboratory 3 hours. Prerequisite: BI 102 or permission of instructor. Offered odd-numbered spring semesters.



**BI 351 Dendrology and Silvics 4 Credits**

An introduction to major woody plant species in the Northeast, including taxonomic characteristics, life histories, habitat requirements, and economic importance. Classroom 3 hours, laboratory and/or field work 3 hours. Prerequisite: BI 102 or permission of instructor. Offered odd-numbered fall semesters.

**BI 360 Pathophysiology 3 Credits**

The study of human illness with primary emphasis on the pathogenesis of disease, its disruption of normal physiology, and the body's mechanism for restoring the steady state. The biology of the disease process is examined at the molecular, cellular, tissue, organ, and organ system level. Classroom 3 hours. Prerequisites: minimum "C" grade in BI 215, BI 216 or permission of instructor. Offered fall semesters.

**BI 364 Pathophysiology in Sports Medicine 4 Credits**

The study of human pathology with primary emphasis on the pathogenesis of those pathological states most commonly encountered in sports medicine, their disruption of normal physiology and the body's mechanism for restoring the steady state (homeostasis). The biology of the disease process is examined at the molecular, cellular, tissue, organ and organ system level. Classroom 3 hours, laboratory 2 hours. Prerequisites: BI 215 & BI 216 with "C" or higher, or permission of instructor. Offered even-numbered spring semesters.

**BI 370 Introduction to Neuroscience 4 Credits**

An interdisciplinary course designed to introduce the structure and function of the mammalian nervous system. Topics include, but are not limited to, neuronal development, sensory and motor systems, chemical control of the brain and behavior, and the underlying mechanisms of neurodegenerative disease. May require dissection of living animals. Classroom 3 hours, laboratory 2 hours. Prerequisites: BI 101 and either BI 215 or PY 230. Offered fall semesters.

**BI 401 Senior Seminar 3 Credits**

This is the capstone course that integrates reading, writing, speaking and critical thinking skills. It includes instruction in scientific writing, use of contemporary scientific biological literature, library research techniques, and requires a major paper considering ethics in science and research. Students will prepare research papers on current topics using primary sources and give oral presentations on their topics to the department faculty. Classroom 3 hours. Prerequisites: senior class standing or permission of the instructor. Offered fall semesters.

**BI 402 Evolution 4 Credits**

This course is designed to introduce the student to Darwinian and Non-Darwinian mechanisms of evolutionary change, a history of life in the context of contemporary biology, and scientific and cultural controversies surrounding this topic. Offered Fall semesters. Classroom: 4 hours. Prerequisites - BI 101, BI 102 and BI 202 or permission of the instructor. This class can fulfill the CAB1 (anatomy) or CAB5 (systematic) requirements.

**BI 405 Ecology 4 Credits**

The interrelationships between living organisms and their total environment are studied through a combination of lecture, laboratory and field studies. Major concepts include ecosystem structure and function, community development, species diversity, succession, interspecific and intraspecific relationships, competition, predation, behavior, population growth and regulation. Collection and preservation of plants and animals may be required. Classroom 3 hours. If taken for four credits also laboratory and/or field work 3 hours. Prerequisites: BI 101, BI 102. Offered fall and spring semesters.

**BI 418 Medical Microbiology 4 Credits**

A study of pathogenic microorganisms including their general characteristics, physiology, pathogenesis, pathology, diagnosis, treatment, immunity, prevention, and control. Laboratory exercises are designed to familiarize students with diagnostic procedures used in the clinical microbiology laboratory. Classroom 2 hours, laboratory 4 hours. Prerequisite: BI 220 or BI 240. Offered even-numbered spring semesters.

**BI 424 Woodland Ecology and Management 4 Credits**

A review of biotic and abiotic factors controlling the forest environment, methods for determining vegetation structure and succession, introduction to major forest associations in the Northeast, and consequences of various harvesting and management techniques. Classroom 3 hours, field studies 3 hours. Prerequisites: BI 351 or BI 316, or permission of instructor. Offered even-numbered spring semesters.

**BI 440 Reading and Research 3,4 Credits**

Independent study under the supervision of a department faculty member. Open to junior and senior majors with permission of instructor. BI 440 may be taken no more than twice, for a maximum of 7 credits. Students requesting this course must have a 3.0 GPA in biology courses or departmental approval. An approved topic, a brief outline of the research to be conducted, and a signature from a biology mentor must be submitted to the department chair before the end of the drop-add period of the enrolled semester.

**BI 450 Internship in Biology 3,4 Credits**

Internship in Biology.

## Civil Engineering (CE)

### Courses

**CE 211 Surveying 3 Credits**

A course in the theory and practice of plane surveying. Horizontal and vertical control, design of circular and parabolic curves, tachometry, construction surveys and earthwork quantities are covered in lecture. Fieldwork presents the practical applications of lecture material with the use of transits, tapes, levels, electronic distance measuring devices and theodolites. Classroom 2 hours, laboratory 3 hours. Prerequisite: MA 107.

**CE 214 Site Development and Engineering 4 Credits**

A course that teaches the tasks and considerations involved in environmentally sound land development. Road design and its interaction with development sites will be presented. Other topics covered include contours, drainage utilities, cut and fill, and aesthetic considerations. Codes and legal requirements will also be covered. CADD (Computer Aided Drawing and Design) software specific to Civil Engineering work will be introduced and employed extensively on student projects. Classroom 3 hours, laboratory 3 hours. Prerequisite: CE 211.

**CE 220 Introduction to Environmental Technology 4 Credits**

A study of the fundamentals of environmental control technology. The course covers the topics of air pollution, water pollution, solid and hazardous wastes, and radioactive wastes. Noise pollution and control are also covered. The generation and treatment of wastes along with their effects on the environment are included in the course. The laboratory includes the basic methods of measuring pollution. Three Credits: Classroom 3 hours. Four Credits Classroom 3 hours, laboratory 2 hours. Prerequisite: CH 103 or CH 111. Not open to engineering students.

**CE 264 Specifications and Estimating 1 Credit**

A laboratory in plan reading, quantity analysis and cost estimating of Civil Engineering projects. Students will be exposed to standard formats for specifications and estimating. Students will write sample specifications and will gain experience in construction estimation. Laboratory 3 hours. Co-requisites: CE 211.

**CE 318 Soil Mechanics 3 Credits**

An introduction to the engineering properties of soil: soil classification; soil structure and mineralogy; water flow through soils; compressibility and consolidation; shear strength. Laboratory testing of soils and soil exploration. Offered to allow students from other institutions to transfer 3 credit equivalent courses.

**CE 321 Materials Laboratory 1 Credit**

A laboratory course in the application of basic mechanics of materials principles to cement, aggregate, concrete, steel and wood. Operation of various types of testing machines and gauges. Tests of tension, compression, flexure, torsion, impact, shear, hardness and fatigue. Laboratory observations, analysis, interpretation and reports. Classroom 1 hour, laboratory 2 hours. Corequisite: EG 301 or CE 351.

**CE 322 Fluid Mechanics Laboratory 1 Credit**

A laboratory course in which the principles of fluid mechanics are applied to civil engineering problems. The design and implementation of a laboratory research study, the analysis of data, the presentation of results, and the development of engineering conclusions are integral parts of this course. Lab topics include hydrostatics, pipeflow, open channel flow, flow measurement, and resistance to flow. Classroom 1 hour, laboratory 2 hours. Prerequisite or concurrent enrollment: EG 303.

**CE 328 Soil Mechanics 4 Credits**

An introduction to the engineering properties of soil: soil classification; soil structure and mineralogy; water flow through soils; compressibility and consolidation; shear strength. Laboratory testing of soils and soil exploration. Classroom 3 hours, laboratory 2 hours. Prerequisite: EG 301 or permission of the instructor.

**CE 332 Engineering Hydrology 3 Credits**

A study of the location, movement, and distribution of the waters of the earth for practical applications to society. This course includes the study of the engineering aspects of precipitation, evaporation, infiltration, steamflow and flood and drought prediction. The application of hydrological statistics and computer applications are stressed. Classroom 3 hours. Prerequisite: EG 303 or permission of the instructor.

**CE 336 Introduction to Transportation Engineering 3 Credits**

An introduction to different modes of transportation with emphasis on roadway and traffic engineering. Topics include transportation planning, highway geometric and pavement design, drainage, construction, traffic-control devices, traffic operations and management, and highway capacity analysis. Classroom 3 hours. Prerequisites: CE 211; Surveying.

**CE 348 Structural Analysis 3 Credits**

A course on the analysis of statically determinate and indeterminate beams, frames and trusses. Topics include loads to buildings, shear and moment diagrams, influence lines and classical methods of analysis. Computer applications are introduced using a general frame analysis program. The use of analysis in the overall design process is stressed using a semester-long project. Classroom 3 hours. Prerequisite: EG 301.

**CE 351 Statics and Mechanics of Materials 4 Credits**

A study of elementary, primarily two-dimensional engineering mechanics. Fundamental concepts and basic laws of statics, force systems, structures, and support reactions for loading patterns. Stress-strain relationships to forces: concepts and applications. Consideration of engineering materials and their suitability in various structures and mechanisms. Classroom 4 hours. Prerequisites: MA 107 and PS 201. Not open to engineering students.

**CE 399 Introduction to Transportation Engineering 3 Credits****CE 419 Foundation Engineering 3 Credits**

A course on the use of soil properties to determine bearing capacity and settlement of shallow and deep foundations. Design of earth and earth supporting structures. Classroom 3 hours. Prerequisite: CE 328 or permission of the instructor.

**CE 421 Sanitary Engineering 4 Credits**

Sources, quantities and constituents of water and wastewater are examined and their interaction with the environment is developed. Design of chemical, physical and biological treatment facilities according to current practice is stressed. The laboratory develops standard methods of chemical, physical and biological examination and analysis. Classroom 3 hours, laboratory 3 hours. Co-requisite: CE 211.

**CE 422 Water and Wastewater Treatment 3 Credits**

A study of physical, chemical and biological processes for water and wastewater treatment. The course emphasizes the evaluation of unit processes and the design of water and wastewater treatment facilities. Classroom 3 hours. Prerequisite: CE 421.

**CE 432 Solid and Hazardous Waste Engineering 3 Credits**

A course on the state-of-the-art techniques for disposal of solid and hazardous waste material. Aspects covered will be system design, public health protection, and environmental protection. Classroom 3 hours. Prerequisites: CH 104 and junior or senior status in engineering or science.

**CE 441 Transportation Engineering 3 Credits**

The planning, design, and construction of transportation systems to meet the mobility requirements of society while considering economic, environmental, and societal constraints. System maintenance and administration are also included. Classroom 3 hours. Prerequisite: CE 211 or permission of the instructor.

**CE 442 Design of Metal Structures 3 Credits**

An introduction to the design of metal structures using the LRFD-AISC code as the basis. Topics include design of tension, compression and bending members; bolted and welded connections. Classroom 3 hours. Prerequisite: CE 348.

**CE 444 Reinforced Concrete Design 3 Credits**

An introduction to the design of reinforced concrete members under bending, shear and axial loadings according to ACI 318R code requirements. Topics also include one-way slabs, footings and retaining walls and an introduction to pre-stressed concrete. Use of the computer as a design tool is introduced. Classroom 3 hours. Prerequisite: CE 348.

**CE 450 Air Pollution Control 3,4 Credits**

A course presenting sources of air pollution and the effect on the environment, the measurement of air pollutants, modeling of air pollutant dispersion, and design of control measures. Use of manual monitoring techniques and physical and chemical fundamentals to measure air quality. Course may be taken for three credits without the lab. Classroom 3 hours, laboratory 3 hours. Prerequisite: EG 206.

**CE 451 Air Pollution Control Equipment Design 3 Credits**

This course builds on and amplifies material studied in CE 450. Properties of air pollutant emissions and thermodynamics, fluid mechanics and heat transfer principles are utilized to design air pollution control equipment. Several major design projects are undertaken by student teams; interim and final design reports are required. In addition, a module on air quality modeling is included. Classroom 3 hours. Prerequisite: CE 450.

**CE 452 Introduction to Air Pollution Control 3 Credits**

A course presenting sources of air pollution and the effect on the environment, the measurement of air pollutants, modeling of air pollutant dispersion, and design of control measures. Classroom 3 hours, laboratory 3 hours. Prerequisite: EG 206.

**CE 455 Structures I 3 Credits**

This course builds directly on the material learned in CE 351 and is specifically directed to the study of the response of structural systems to various loadings. Gravity and lateral loads as well as load combinations on a structure are developed using appropriate building codes. The response of the structural system to imposed loading is studied by classical and computer analysis techniques. Finally, this course introduces the students to the design of simple steel structures that meet the appropriate building code. Classroom 3 hours. Prerequisite: CE 351. Not open to engineering majors.

**CE 456 Structures II 3 Credits**

This course is intended to introduce the students to and develop an understanding of, structural design of wood, concrete and masonry. Particular attention will be given to failure modes of the member types and materials. Each of the principal member types, beam and column as well as connections, will be studied and members designed to meet the appropriate code. Classroom 3 hours. Prerequisite: CE 455. Not open to engineering majors.

**CE 457 Wood, Steel, and Concrete Structures 4 Credits**

This course builds directly on the material learned in CE 351 and is specifically directed to the study of the response of structural systems to various loadings. Gravity and lateral loads as well as load combinations on a structure are developed using appropriate building codes. The response of the structural system to imposed loading is studied by classical and computer analysis techniques. This course introduces the students to applications - the design of simple structures of wood, steel, concrete and other materials that meet the appropriate building code. Classroom 4 hours. Prerequisite CE 351. Not open to engineering majors.

**CE 458 Structural Issues for Construction 3 Credits**

This course is intended to introduce the students to structural building applications, and to develop knowledge and comprehension of structural design of steel, wood, concrete, and masonry. Particular attention will be given to concrete members, concrete form design requirements, steel connections, failure modes of the member types and materials. Detailed construction issues with each material will be emphasized. Each of the principal member types, beam and column as well as connections, will be studied and members designed to meet the appropriate code. Lecture 3 hours. Prerequisites: CE 455 or CE 457. Not open to engineering majors.

**CE 460 Construction Management 3 Credits**

A course on the organization, scheduling and management of the construction project utilizing CPM and PERT. Survey of management functions by which construction is authorized, purchased, supervised, accomplished, inspected and accepted, including labor management relations and site design. Classroom 3 hours. Prerequisite: MA 107.

**CE 464 Specifications and Estimating 1 Credit**

A laboratory in plan reading, quantity analysis and cost estimating of Civil Engineering projects. Students will be exposed to standard formats for specifications and estimating. Students will write sample specifications and will gain experience in construction estimation. Laboratory 3 hours. Prerequisites: CE 211 and CE 460.

**CE 475 Senior Project Planning 1 Credit**

Each student will work with a mentor and together will define and analyze a project so that an efficient design can be completed. The project scope will be developed, tasks will be laid out, and a schedule to complete the project will be created. All of this will be presented orally and in written form in a project proposal. Prerequisite: Senior status. Corequisite: CE 460.

**CE 480 Senior Design 3 Credits**

A capstone course in civil engineering. This course builds on and integrates the engineering concepts developed in prior course work into the complete design of a major civil engineering project. The course will require a written and an oral presentation of the completed design to include, where appropriate, plans and specifications. Prerequisites: CE 328, CE 348, and CE 421, or departmental approval.

**CE 490 Advanced Topics 4 Credits**

A course that provides instruction in an area of the instructor's special competence and student interests. Advanced topics would be presented in such areas as air pollution control, water and wastewater treatment, bioremediation, and nuclear radiation. Offered as the occasion demands. Prerequisite: senior standing.

**CE 499 Applied Soils and Foundations 4 Credits**

## Chemistry (CH)

### Courses

**CH 100 Introduction to Forensic Science 4 Credits**

An introductory survey course of Forensic Science/Criminalistics. The course will focus on scientific principles behind the recognition, collection, preservation, analysis, and interpretation of physical evidence found at a crime scene. The emphasis will be put on providing students with an understanding of the capabilities and limitations of forensic science as it is currently practiced. Lecture 3 hours, laboratory 3 hours. Recommended for students not majoring in science and engineering. Offered fall and spring semesters.

**CH 101 Introduction to General Chemistry 4 Credits**

CH 101 is the first of a two semester course series in chemistry covering topics in General, Organic and Biochemistry (GOB). It is a fundamental course in general chemistry, introducing students to the principles of chemical structure and reactivity. Topics include accuracy and precision in measurement, atomic and molecular structure, chemical bonding and reactions, and chemical equilibrium. The laboratory element complements the lecture material with emphasis placed on collaborative problem solving. This course is not recommended for students majoring in science or engineering. Prerequisite: a college level mathematics course or equivalent as determined by departmental placement testing. Not more than one of CH 101 or CH 103 may count as degree credit. Lecture 3 hours, laboratory 3 hours. Offered spring semesters.

**CH 102 Introduction to Organic and Biochemistry 4 Credits**

CH 102 is the second part of a two semester course series in chemistry covering topics in General, Organic and Biochemistry (GOB). This course introduces students to the nomenclature, structure and reactivity of organic compounds and the structure and function of the major classes of biological compounds and their role in metabolic pathways. Laboratory exercises compliment the lecture material. This course is not recommended for students majoring in science or engineering. Prerequisites: CH 101 or CH 103. Not more than one of CH 102 or CH 104 may count as degree credit. CH 102 may not be taken for credit after successful completion of CH 205. Lecture 3 hours, laboratory 3 hours. Offered fall semesters.

**CH 103 General Chemistry I 4 Credits**

Introduction to chemical characteristics and behavior, stressing atomic structure, stoichiometry, chemical equilibrium and kinetics, and descriptive chemistry of important elements. Laboratory includes qualitative and quantitative exercises, and syntheses. Lecture 3 hours, laboratory 3 hours. Credit will not be granted for more than one of the following sequences: CH 103 - CH 104, CH 111 - CH 112, or CH 103 - CH 112. Prerequisites: One year of high school chemistry and a score of 2 or better on the Norwich University Mathematics Placement Test or a "C" or better in MA 103. Offered fall semesters.

**CH 104 General Chemistry II 4 Credits**

Continuation of the study of chemical characteristics and behavior, stressing atomic structure, stoichiometry, chemical equilibrium and kinetics, and descriptive chemistry of important elements. Laboratory includes qualitative and quantitative exercises, and syntheses. Lecture 3 hours, laboratory 3 hours. Credit will not be granted for more than one of the following sequences: CH 103 - CH 104, CH 111 - CH 112, or CH 103 - CH 112. Prerequisites: CH 103. Offered spring semesters.

**CH 111 Chemistry and the Chemical World 4 Credits**

Entry-level chemistry course introducing the non-science major to chemistry's impact upon the modern world. Qualitative interpretation of chemistry's role in areas of societal concern such as natural resources, environmental quality and pollution, and nuclear and alternative energy forms. Laboratory work will include qualitative as well as quantitative investigations. Lecture 3 hours, laboratory 3 hours. Credit will not be granted for more than one of the following sequences: CH 103 - CH 104, CH 111 - CH 112, or CH 103 - CH 112. Recommended for students not majoring in science and engineering. Prerequisite: Score of 1 or better on the Norwich University Mathematics Placement test or successful completion of MA 005. Offered fall semesters.

**CH 204 Quantitative Analysis 4 Credits**

A course on the general principles and laboratory practices of quantitative analysis, applied principally in colorimetric and volumetric determinations. Studies of theory and practical procedures associated with gravimetric analysis, potentiometric titrations, and use of pH-meters. Lecture 3 hours, laboratory 4 hours. Prerequisites: CH 103, CH 104. Offered spring semesters of odd numbered years.

**CH 205 Survey of Organic Chemistry 4 Credits**

An introduction to the covalent compounds of carbon. Laboratory work involves elementary manipulation of organic laboratory equipment, preparation and identification of typical organic compounds, and the characteristics of the major functional groups. Lecture 3 hours, laboratory 2 hours. Prerequisites: CH 103 - CH 104. Offered fall semesters of odd numbered years.

**CH 214 Communication in Chemistry 1 Credit**

This course illustrates the organization of the chemical literature, the efficient search of the literature and a formal introduction to scientific writing. Offered fall semesters of even years.

**CH 225 Organic Chemistry I 4 Credits**

An introduction to the study of carbon compounds; preparation and identification of typical compounds. Lecture 3 hours, laboratory 3 hours. Prerequisites: CH 103 - CH 104 or by petition. Offered fall semesters.

**CH 226 Organic Chemistry II 4 Credits**

A continuation of the study of carbon compounds; preparation and identification of typical compounds. Lecture 3 hours, laboratory 3 hours. Prerequisite: CH 225. Offered spring semesters.

**CH 314 Instrumental Methods 3 Credits**

A course on the Theory of Modern Instrumental Methods. Lecture 3 hours. Prerequisites: CH 204 required, CH 327 - CH 328 recommended. Offered spring semesters of even numbered years.

**CH 315 Analysis Laboratory 1 Credit**

A course that provides upper class laboratory experience in chemical methods of measurement and analysis. Laboratory 3 hours. Prerequisite: CH204. Offered spring semesters of even numbered years.

**CH 324 Biochemistry I 4 Credits**

A course on the chemical phenomena and energy effects in life processes. Topics include structure and function of biomolecules, metabolism (catabolism and anabolism), photosynthesis and recombinant DNA technologies. Lecture 3 hours, laboratory 3 hours. Prerequisites: CH 103 - 104, and either CH 205 or co-requisite of CH 226. Offered even numbered spring semesters.

**CH 325 Biochemistry II 4 Credits**

A continuation of the study of the chemical phenomena and energy effects in life processes. Topics include structure and function of biomolecules, metabolism (catabolism and anabolism), photosynthesis and recombinant DNA technologies. Lecture 3 hours, laboratory 3 hours. Prerequisite: CH 324. Offered even numbered fall semesters.

**CH 327 Physical Chemistry I 3 Credits**

A course on the physical properties and structure of matter; general principles and theories of chemical interaction. Major areas studied are chemical applications of thermodynamics; phase equilibria; electrochemistry; reaction kinetics; description of electronic structure of atoms and molecules. Lecture 3 hours. Prerequisites: CH 103 - CH 104; co-requisite; MA 224 and college physics (recommended). Offered even numbered fall semesters.

**CH 328 Physical Chemistry II 3 Credits**

A continuation of the study of the physical properties and structure of matter; general principles and theories of chemical interaction. Major areas studied are chemical applications of thermodynamics; phase equilibria; electrochemistry; reaction kinetics; description of electronic structure of atoms and molecules. Lecture 3 hours. Prerequisite: CH 327. Offered odd numbered spring semesters.

**CH 337 Physical Chemistry Laboratory I 1 Credit**

Laboratory investigations with written formal reports on the physical properties and chemical behavior of substances. Laboratory 3 hours. Prerequisite or co-requisite: CH 327. Offered even numbered fall semesters.

**CH 338 Physical Chemistry Laboratory II 1 Credit**

Laboratory investigations with written formal reports on the physical properties and chemical behavior of substances. Laboratory 3 hours. Prerequisite or co-requisite: CH 328. Offered odd numbered spring semesters.



**CH 413 Chemistry Seminar 1 Credit**

Part of a capstone experience that provides individual assignments, written reports, oral reports, and class discussions on chemical topics of current interest. Reading, writing, speaking and critical thinking skills are emphasized. Lecture 1 hour. Prerequisites: CH 225 - CH 226, CH 327 - CH 328.

**CH 421 Chemical Synthesis and Examination I 3 Credits**

A capstone experience in which organic, inorganic and compounds of biological interest are synthesized and examined with respect to purity and properties. The objectives are to develop an integrated perspective on the general field of chemistry and to develop proficiency in practical laboratory procedures and in reporting results. Laboratory and occasional lectures 8 hours. Prerequisites or co-requisites: CH 225 - CH 226, CH 327 - CH 328. Offered fall semesters.

**CH 422 Chemical Synthesis and Examination II 3 Credits**

A capstone experience in which organic, inorganic and compounds of biological interest are synthesized and examined with respect to purity and properties. The objectives are to develop an integrated perspective on the general field of chemistry and to develop proficiency in practical laboratory procedures and in reporting results. Laboratory and occasional lectures 8 hours. Prerequisites or co-requisites: CH 225 - CH 226, CH 327 - CH 328. Offered spring semesters.

**CH 425 Thesis 1-3 Credit**

This course allows the student to conduct research on a project approved by the faculty of the chemistry and biochemistry programs. The student can be expected to perform the necessary experiments, organize and interpret the data and to communicate the results of the project with a comprehensive report. Prerequisites: CH 225 - CH 226. Co-requisites: CH 327 - CH 328, CH 438. Permission of the program faculty is also required. The student may re-enroll in CH 425 for up to 6 credits.

**CH 438 Advanced Inorganic Chemistry 3 Credits**

A course on the chemistry of the elements: properties, characteristics, and behavior. Lecture 3 hours. Prerequisites: CH 327 - CH 328. Offered fall semesters of odd numbered years.

**CH 439 Advanced Organic Chemistry 3 Credits**

An advanced and thorough development of topics introduced in CH 225 - CH 226. Lecture 3 hours. Prerequisites: CH 225 - CH 226. Offered fall semesters of even numbered years.

**CH 450 Topics in Chemistry 3 Credits**

A course in which a selected limited topic in advanced chemistry is covered in depth. Offered on occasion. Prerequisite: permission of the instructor.

## Criminal Justice (CJ)

### Courses

**CJ 101 Introduction to Criminal Justice 3 Credits**

A general survey of the principles, system, and process of criminal justice. Introduction to conceptions and definitions of crime, criminal law, and due process. Examination of the organization and operation of the three basic components of the criminal justice system -- the police, the courts, and corrections -- individually and in relationship to one another. Offered in fall semesters.

**CJ 102 Substantive Criminal Law 3 Credits**

This course presents the development of criminal law in the United States and discusses its principles, sources, distinctions, and limitations. The following topics are covered in detail: criminal liability; offenses against persons, property, public peace and public justice; preparatory activity crimes; and defenses available to those charged with criminal activity. Offered spring semester.

**CJ 201 Criminology 3 Credits**

This course covers the various biological, psychological, and sociological types of theory that have been offered to explain the incidence of crime in society. Various types of crime, including violent, property, corporate, political and victimless crime, methods of studying crime, and characteristics of criminals are also examined. Offered spring semesters.

**CJ 209 Methods of Social Science Research 4 Credits**

An examination of the methodological foundations of the social sciences; the logic and technique of empirical inquiry; the nature of social facts, the operationalization of concepts, and the construction of hypotheses; research designs including surveys, interviews, experiments, observation, and evaluation; the organization and analysis of data; graph and table construction and interpretation; the common problems of empirical social research; and research ethics. Emphasis given to criminal justice applications. The lab part of the course instructs students how to use and apply SPSS and other relevant software. Cross-listed with SO 209. Offered fall semester. Classroom and Laboratory 4 hours.

**CJ 300 Topics in Criminal Justice 3 Credits**

Selected topics offered on occasion.

**CJ 301 Criminal Procedure 3 Credits**

This course addresses the legal procedure connected with arrest, search and seizure, identification and questioning, bail setting, indictments, and plea bargaining. Offered fall semesters.

**CJ 304 Juvenile Delinquency 3 Credits**

An examination of the social and psychological dimensions of juvenile delinquency, its nature, extent, distribution, and patterns. Evaluation of theories and explanations of delinquent causation, and the investigation of delinquent subcultures. Consideration of labeling and conflict factors in the processing, prevention, and treatment of delinquents.

**CJ 305 Juvenile Justice 3 Credits**

A general survey of the philosophy, system and process of juvenile justice. Examination of the social and legal control of juvenile delinquency by the police, courts and corrections, as well as by private agencies. Emphasis on the distinctions in philosophy, law, jurisdiction, organization and terminology between the juvenile justice system and the adult criminal justice system. Offered every other year.

**CJ 306 Victimology 3 Credits**

An examination of the role of the victim in crime and the treatment of the victim by the criminal justice system. Instruction in the use of victimization data in determining crime rates and in developing prevention programs. Review of victim assistance, restitution and compensation programs. Offered every other year.

**CJ 307 Social Control and Crime Prevention 3 Credits**

The course will focus on crime prevention as a method of social control and will examine processes of social control as social and institutional sources of crime prevention. Examination of personal defense, environmental, situational, community, and social models of crime prevention. Offered every other year.

**CJ 308 The Police 3 Credits**

A general survey of American policing and police organizations. Examination of the history of the police and the police idea, as well as structural, cultural, and social psychological analyses of police organizations. Coverage of the topics of police socialization, behavior, and discretion; routine and specialized operations; community policing; and police misconduct, accountability and change in policing.

**CJ 310 The Courts 3 Credits**

An analysis of America's courts, and the courtroom work group with particular attention given to the dual role of the courts in adjudicating cases and interpreting the U.S. and state constitutions.

**CJ 312 Corrections 3 Credits**

An analysis of the development and present structure of the correctional process in America, including detailed examinations of the operational problems of correctional institutions, probation and parole practices and other community-based correctional alternatives. Offered spring semesters.

**CJ 314 Restorative Justice 3 Credits**

This course presents a new paradigm of community justice as an alternative to the retributive model. The course examines and contrasts restorative approaches and traditional punitive responses to crime. Topics include mediation, victim-offender reconciliation, reparation for harm done to victims and the community and offender re-integration into the community. Offered every other year. Prerequisite: CJ 101 or permission of instructor. 3 lecture hours.

**CJ 320 Drugs and Society 3 Credits**

This course focuses on the interrelationships between drugs and the social order. Issues considered include: the nature and effects of legal and illegal drugs; the determinants of drug effects, especially the social determinants; the history of drug prohibition; drug addiction and drug treatment; and drug policy. Cross-listed with SO 320. Offered every other year.

**CJ 330 Terrorism 3 Credits**

In this course, students examine the critical issues of domestic and international terrorism. The phenomenon of terrorism is analyzed from varying theoretical and empirical perspectives. Topics include terror organizations/networks, ideology, motives, tactics, and propaganda. Attention is also given to terrorism research trends, current events, and future implications. Offered annually. Prerequisite: CJ 101 or permission of instructor.

**CJ 341 Cyber Law and Cyber Crime 3 Credits**

The course includes extensive discussion of the legal constraints, both civil and criminal, that underlie acceptable behavior using computers and networks today. Prerequisites: IS 120 or IS 130 and CJ 201 or permission of instructor. Offered in fall semesters.

**CJ 350 The Death Penalty 3 Credits**

This course is designed to provide students with an understanding of the death penalty in America, including detailed examination of capital punishment from 1608-modern day, the legal and ethical history of the death penalty, and the administration of the death penalty in America. Topics include issues based on offender and victim race, age, class or sex. Attention is also given to death penalty research trends, current events and future implications. Prerequisite: CJ 101 or permission of instructor. Offered annually.

**CJ 400 Independent Study 3 Credits**

An opportunity for qualified upperclass students to engage in an intensive research program in fields of interest not satisfactorily covered by regular course offerings. Periodic conferences will be required. Prerequisite: written consent of the instructor to a specific project presented by the applicant. Open only to criminal justice majors with a cumulative quality point average of 2.5 or better and who have grades averaging 3.0 or better in prior course work in criminal justice. Offered on occasion.

**CJ 402 Law and Society 3 Credits**

An analysis of various theoretical perspectives on the nature, courses, organization and operation of law and legal systems. Emphasis will be placed on law creation, conflict resolution, the legal profession, and the role of law in social change. Cross listed with SO 402. Offered every other year.

**CJ 403 Criminal Justice Administration 3 Credits**

An introduction to the principles of public administration as they are applied in the operation of criminal justice agencies. This course will emphasize how such topics as organization, decision making, leadership style, personnel policy, planning, and budgeting are specifically adapted by criminal justice administrators to meet the needs of their agencies. Simulations will be used extensively as a tool for mastering administrative principles. Prerequisite: CJ 101 or permission of instructor. Offered every other year.

**CJ 405 Internship 3 Credits**

This elective course permits an upper-level student to participate directly in the criminal justice process by serving as an aide to agencies involved in the process. This offering is subject to the availability of such internships. Open only to junior and senior criminal justice majors, and to senior criminal justice minors on availability. Offered fall, spring and summers.

**CJ 410 Senior Seminar 3 Credits**

A course dedicated to intensive research and analysis of major issues in criminal justice. Emphasis will be placed on critical thinking and evaluation of topics previously discussed during the student's academic career in the criminal justice program. Attention will also be given to professional development topics, ethics and criminal justice policy. Prerequisite: criminal justice major and senior standing. CJ 410 meets capstone requirement. Offered spring semesters.

**CJ 421 Comparative Criminal Justice Systems 3 Credits**

This course examines how countries other than the United States deal with the problem of crime and its control. It begins from the classic approach of a critical analysis of the history and development of the world's great legal traditions, and the role and structure of the criminal justice systems inside those traditions. Prerequisite: CJ 101. Offered every other year. 3 credits hours.

**CJ 422 Civil Liability in the Criminal Justice System 3 Credits**

This course examines the civil law that governs criminal justice agencies. As representatives of the government, Criminal Justice agencies must adhere to the Constitution and other State and Federal laws. When they fail to do so, the aggrieved party has the right to sue. This course explores the major state and federal liability theories that govern the management and daily operations of the police and correctional facilities. In addition, this course draws on your previous police, corrections and law courses to explore management issues related to civil liability. Prerequisite: CJ 101, CJ 102, CJ 301. Offered every other year. 3 credits hours. Open only to juniors and seniors.

**CJ 423 Evidence 3 Credits**

The course is an in-depth examination of the rules governing the admissibility or exclusion of evidence at trial. Subjects include competency of witness, direct and cross-examination of witnesses, the rule against hearsay and its exceptions, expert and lay opinion testimony, privileged communications, relevancy, procedural considerations, judicial notice, burden of proof, presumptions, form and type of objections, authentication, the best evidence rule and the use of demonstrative and scientific evidence. Prerequisites: CJ 101 and CJ 102. Offered every other year. 3 credit hours. Open only to juniors and seniors.

**CJ 424 Murder: Our Killing Culture 3 Credits**

This course provides a comprehensive examination of the nature and extent of both the common and unusual forms of murder in the United States. The class examines characteristics, trends, and the theoretical explanations of homicide as well as the prediction and prevention of various kinds of murder. The impact of murder on homicide survivors is also examined as well as the use of murder as entertainment in our culture. The course is designed to give students greater insight into serial, spree and mass murder, intrafamilial homicide, murder in the workplace, profiling and stalking. Although emphasis is placed on the sociological determinants of murder, psychological and biological factors are also examined. Prerequisite: CJ 101 or permission of instructor. Offered every other year. 3 credits hours. Open only to juniors and seniors.

**CJ 425 Domestic Violence 3 Credits**

This course provides a comprehensive examination of the nature and extent of domestic violence in the United States. Theoretical perspectives used to explain intimate violence are examined as well as the social factors that are related to patterns of intimate and family abuse. The course discusses domestic violence from a historical and global perspective and is designed to provide students with a greater understanding of the impact of domestic abuse on victims/survivors and society as a whole. Topics including child and elder abuse; the criminal justice system's response to domestic abuse; intervention, well as related crimes such as sexual assault and intrafamilial homicides. Prerequisite: CJ 101 or permission of instructor. Open only to juniors and seniors. Course is offered every other year. 3 credit hours.

**CJ 442 Introduction to Computer Forensics 4 Credits**

This course provides the student with an ability to perform basic forensic techniques and use appropriate media analysis software. Knowledge of the security, structure and protocols of network operating systems and devices will be covered as students learn to gather evidence in a networked environment and to image and restore evidence properly without destroying its value. The student will learn and practice gaining evidence from a computer system while maintaining its integrity and a solid chain of custody. Within the laboratory, the student will gain hands-on experience in the use of current investigative tools. Classroom 3 hours, laboratory 2 hours. Prerequisites IS 228 and CJ 341. Offered in spring semesters.

## Communications (CM)

### Courses

**CM 109 Introduction to Mass Media 3 Credits**

The mass media are so pervasive in contemporary society that students in many disciplines will find this course valuable. It provides a comprehensive overview of the development of such media as newspapers, magazines, books, radio, television, film, recordings and the Internet. In addition, it introduces students to issues of regulatory control, audience analysis, media ethics and international mass communications.

**CM 207 Journalism I: News Gathering 3 Credits**

This course covers the fundamentals of news gathering, reporting and writing on assignment. Students learn to evaluate how the media relate events. The course also treats such issues as the right to privacy, the risks of libel, and the ethical contexts of gathering information.

**CM 208 Journalism II: Advanced News Gathering and Design 3 Credits**

This course continues CM 207 and concentrates on in-depth and investigative reporting, interviewing and feature writing, as well as basic newspaper layout and design. Students explore the patterns of thinking and feeling that enable the reporter to make sound observations and judgments. Prerequisite: CM 207 or permission of instructor.

**CM 209 Broadcast Writing 3 Credits**

This course acquaints the student with the theory and practice of writing for broadcast media. Students are introduced to writing styles used in radio, television, and film. They also learn about news gathering, documentary techniques, and dramatic writing. Prerequisite: CM 109 or permission of instructor.

**CM 211 Broadcasting Techniques 3 Credits**

This survey of broadcasting in America stresses the basic principles and professional techniques of radio and television. In addition to learning historical and contemporary applications of broadcast technology, students use campus radio broadcast facilities and the video production studio as working laboratories. Students develop perspective on changing industry standards. Prerequisite: CM 109 or permission of instructor.

**CM 261 Interpersonal Communications 3 Credits**

This course provides an overview of the theories, practices, and processes of human communication, studying such subjects as language acquisition, signs and symbols, body language, proxemics, paralanguage, and feedback. The effects of communication on individuals, society, and intercultural issues are explored. Students identify communication problems and propose creative solutions to them.

**CM 271 Television Production 4 Credits**

An introduction to electronic field production (EFP), electronic news gathering (ENG), and multi-camera studio production with a special-effects switcher. This course is a required course for communications majors. Students will learn how to use professional camera equipment and to construct a news feature segment on the Avid media Composer editing suite platform. Classroom 3 hours, laboratory 3 hours. Offered spring and fall semesters.

**CM 303 Advertising 3 Credits**

A survey of advertising practices and advertising campaigns. Students analyze the visual and verbal properties of successful advertising, discovering the key elements of creative strategy and design.

**CM 304 Principles and Practices of Corporate Communications 3 Credits**

An analysis of the theory and practice of public relations, its functions in organizations, and its role in society. Students apply course material to public relations program planning and management by working individually and in groups on case-study projects. Prerequisite: CM 109 or permission of instructor.

**CM 335 Television Criticism 3 Credits**

This course develops critical perspectives on television programming and introduces students to the complexities of dramatic and non-dramatic programming, including serials, series, sitcoms, docudramas, documentaries, and news stories.



**CM 351 Radio Production 3 Credits**

This course, a continuation of CM 211, is designed for students interested in developing their broadcast production skills as well as their understanding of the entire range of issues associated with radio work. In addition to discussing the most recent cable, satellite, and computer broadcast applications, the course emphasizes work on voice and diction, interviewing, radio news gathering and editing, cultural and public affairs programming, and commercial production. Prerequisite: CM 211 or permission of the instructor.

**CM 390 Topics in Communications 3 Credits**

A course designed to introduce students to a special area or current topic in communications. Course material varies each semester. Analytical writing required. Prerequisite: permission of instructor.

**CM 391 Advanced Television Production 3 Credits**

This course draws on skills learned in CM 271: Television Production. Students gain confidence in their abilities, explore advanced techniques, and learn how to become working members of a professional production team. Advanced areas of instruction include an introduction to the SONY BetacamSP and the development of skills necessary to function as an assistant editor (logging, digitizing, and rendering effects). This is the first in a track of advanced digital technology courses that must be completed in sequential order.

**CM 392 Documentary Television Production 3 Credits**

In this course, students learn the basic fundamentals of traditional long-form documentary production. Early units emphasize research skills, including letters, telephone contacts and archival research. Later units cover on-camera interviewing, logging and organization of footage into off-line drafts. Students learn the functions of the assistant editor on major projects. This is the second in a track of advanced digital technology courses that must be completed in sequential order. Prerequisite: CM 391.

**CM 393 Non-linear Digital Television 3 Credits**

Emphasizes the principles of non-linear post-production. Through discussion, practical exercises and demonstrations, students analyze the differences between linear and non-linear editing systems, the potential and limitations, of digital technology. Students digitize and organize footage, edit sync and non-sync material and assist in the development of sophisticated finished projects for professional portfolios. This is the third in a track of advanced digital technology courses that must be completed in sequential order. Prerequisite: CM 392.

**CM 407 Senior Communications Seminar 3 Credits**

A required course for Communications majors, designed to provide students up-to-date information about the fields of radio, television, journalism, advertising, public relations, public information, wire services and the Internet. Special applications of these fields in business, the military, politics, law, and other professions will be considered. As part of this capstone course, seniors will be required to present and analyze before an audience of department faculty and/or other faculty, a portfolio of prior work. Prerequisite: senior status or permission of instructor.

**CM 408 Communications Internship 3 Credits**

A course designed to combine practical work experience with college-level study in such communications areas as radio, television, advertising, film, journalism, and public relations. Normally, students are required to find their own internship location and must provide their own transportation. Prerequisite: senior status or permission of instructor.

**CM 436 Communications Law and Ethics 3 Credits**

A survey of laws pertaining to journalism, broadcasting, and advertising, emphasizing ethical problems facing journalists and media specialists. Students study the history of press freedom and control and explore First Amendment issues such as the right to privacy; obscenity; and libel. Special emphasis will be placed on media ethics. Prerequisite: CM 109 or permission of instructor.

**CM 491 Media Composer Techniques 3 Credits**

An introduction to the basic technology and aesthetic possibilities of the Avid Media Composer (the industry non-linear post-production standard). As producers and editors, students lead teams of assistants in creating long-form projects. The course combines instructor-led discussion, hand-on demonstration and mentoring assistance. This is the fourth in a track of advanced digital technology courses that must be completed in sequential order. Prerequisite: CM 393.

**CM 492 Advanced Media Composer Techniques 3 Credits**

This course prepares students for professional careers as Media Composer producers and editors. It includes an introduction to mediabase management and stresses speed and efficiency of organizing and editing material using Media Composer software, multiple digital audio tracks, and image compositing. Students create a finished program by course completion. This is the fifth in a track of advanced digital technology courses that must be completed in sequential order. Prerequisite: CM 491.

**CM 493 Media Composer Graphics and Effects 3 Credits**

This course includes a study of the basics in designing multi-layered and multi-nested titles, graphics and effects using the Pinnacle 3D Effects Module. Exercises help students learn to create both real-time and rendered effects. Topics include preparing and importing graphics, creating and using alpha matte keys, the use of Adobe Photoshop and third party packages, creating and saving effects templates and short-cuts and tips for maximum quality and optimal render time. This is the sixth in a track of advanced digital technology courses that must be completed in sequential order. Prerequisite: CM 492.

**CM 494 Advanced Media Composer Effects and Graphics 3 Credits**

Features use of advanced graphics software and broadening of skills learned in CM493: Media Composer Graphics and Effects. Students design complex program openings utilizing 3D templates, mattes, chroma keys, advanced nesting and title features. Third party packages utilized include Adobe After-Effects, BlueICE and Artel BorixFX. This is the seventh in a track of advanced digital technology courses that must be completed in sequential order. Prerequisite: CM 493.

**CM 495 Systems Configuration and Media Data Management 3 Credits**

Offers an overview of systems configuration and maintenance as well as media data-base management to minimize systems downtime and maximize Media Composer productivity. Laboratory work and role-playing give students practical experience. Topics include SCSI, storage, hardware and software troubleshooting, signal flow, systems integration and issues involving external peripheral devices. Features a practicum conducted at Avid Technology. This is the eighth in a track of advanced digital technology courses that must be completed in sequential order. Prerequisite: CM 494.

## Chinese (CN)

### Courses

#### **CN 111 Beginning Chinese I 6 Credits**

An intensive course providing an introduction to the Mandarin language, including both traditional Chinese characters and the Pinyin transliteration system. In this course, speaking proficiency (including familiarization with Chinese tones), aural comprehension, vocabulary acquisition, reading and writing of Chinese characters are brought to a level enabling students to use the language actively in everyday situations. Classroom 6 hours, laboratory 2 hours. Not open to students who have successfully completed CN 205 or higher.

#### **CN 112 Beginning Chinese II 6 Credits**

A continuation of CN 111, with continued emphasis on each of the language skill areas--speaking, listening, vocabulary, reading and writing. Classroom 6 hours, laboratory 2 hours. Prerequisite: CN 111 or equivalent NU placement. Not open to students who have successfully completed CN 205 or higher.

#### **CN 205 Intermediate Chinese I 3 Credits**

A course providing aural-oral practice in Chinese, in which students enter into full discussion of topics that include abstract themes and cultural perspectives; includes the expanded use of syntactical structures, the reading of sophisticated material, composition, and the viewing of selected Chinese films and documentary materials from Chinese-language television. Taught entirely in Chinese. Classroom 3 hours, laboratory 1 hour. Prerequisite: CN 112, NU language placement exam, or permission of the instructor.

#### **CN 206 Intermediate Chinese II 3 Credits**

A course providing aural-oral practice in Chinese, in which students enter into full discussion of topics that include abstract themes and cultural perspectives; includes the expanded use of syntactical structures, the reading of sophisticated material, composition, and the viewing of selected Chinese films and documentary materials from Chinese television. Taught entirely in Chinese. Classroom 3 hours, laboratory 1 hour. Prerequisite: CN 205 or the equivalent, NU language placement exam. 3 lecture hours.

#### **CN 301 Advanced Chinese I 3 Credits**

Oral and written practice of the language through class discussions of selected Chinese texts. Selective review of grammar, especially of the more difficult and subtle aspects, designed to facilitate an idiomatic and fluent use of the language. Classroom 3 hours. Prerequisite: CN 206, NU placement, or permission of instructor.

#### **CN 302 Advanced Chinese II 3 Credits**

Oral and written practice of the language through class discussions of selected Chinese texts. Selective review of grammar, especially of the more difficult and subtle aspects, designed to facilitate an idiomatic and fluent use of the language. Classroom: 3 hours. Prerequisite: CN 301, NU placement, or permission of instructor.

#### **CN 321 Chinese Literature, Culture and Society I 1911-1949 3 Credits**

Introduction to major currents in Chinese social, literary, and cultural history from 1911 to 1949. Taught in Chinese. Prerequisite: CN 206 or a 300-level course, NU placement, or permission of instructor.

#### **CN 322 Chinese Literature, Culture and Society II 1949-Present 3 Credits**

Introduction to major currents in Chinese social, literary, and cultural history from 1949 to present. Taught in Chinese. Classroom: 3 hours. Prerequisite: CN 206 or a 300-level course, NU placement, or permission of instructor.

#### **CN 331 Advanced Chinese Composition and Conversation (I) 3 Credits**

A study of original Chinese journalistic texts to elevate students' Chinese language proficiency in writing and composition, oral reports and discussion, reading and comprehension, and in Chinese-English/English-Chinese translation. Prerequisite: CN 206 or a 300-level course (may be taken concurrently), NU language placement test, or permission of the instructor. 3 lecture hours.

#### **CN 332 Advanced Chinese Composition and Conversation (II) 3 Credits**

A study of original Chinese literary texts to elevate students' Chinese language proficiency in writing and composition, oral reports and discussion, reading and comprehension, and in Chinese-English/English-Chinese translation. Prerequisite: CN 206 or a 300-level course (may be taken concurrently), NU language placement test, or permission of the instructor. 3 lecture hours.

#### **CN 365 Chinese Literature, Culture and Society III: 221 BCE-1911 3 Credits**

A survey of representative Chinese classical works – novels, short stories. Prose, poetry, and traditional operatic dramas – during Qin Dynasty (221-226 BCE), Han Dynasty (960-1279), Yuan Dynasty (1271-1368), Ming Dynasty (1368-1644) and Qing Dynasty (1644-1911). Lectures, readings, discussions and written reports in Chinese. Prerequisite: CN 206 or a 300-level course (may be taken concurrently), NU language placement test, or permission of the instructor. 3 lecture hours.

#### **CN 366 Chinese Literature, Culture and Society IV: Beginning-221 BCE 3 Credits**

A survey of Chinese literary, historical and philosophical writings, legends. Folklore, myth, songs, and poems from Zhou Dynasty (1045 BCE-256 BCE), Shang Dynasty (1600 BCE- 1046 BCE), Xia Dynasty (2100 BCE-1600 BCE) and before. Lectures, readings, discussions and written reports in Chinese. Prerequisite: CN 206 or a 300-level course especially CN 365, NU language placement test, or permission of the instructor. 3 lecture hours.

#### **CN 399 Topics 3 Credits**

## Economics (EC)

### Courses

#### **EC 106 The Structure and Operation of the World Economy 3 Credits**

This course will introduce students to the operation of the world economy. Emphasis will be on the identification and description of economic concepts such as tariffs, multinational companies, stock markets, debt, international trade balances and international banking. These concepts will be developed utilizing examples from current world economic conditions. This course fulfills General Education Requirement #5: an understanding of economic institutions that are characteristic of human societies. Prerequisite: This is a freshman course-permission of instructor required for any exception.

#### **EC 201 Principles of Economics (Macro) 3 Credits**

Description and analysis of the American economic system in terms of basic economic concepts and the determination of national income and its fluctuation. This course fulfills General Education Requirement #5: An understanding of economic institutions that are characteristic of human societies. Prerequisite: one semester of college mathematics.

**EC 202 Principles of Economics (Micro) 3 Credits**

Study of the composition and pricing of national output, distribution of income and the pricing of productive factors, international aspects of trade, and the problems of growth. This course fulfills General Education Requirement #5: An understanding of economic institutions that are characteristic of human societies. Prerequisite: one semester of college mathematics.

**EC 300 Topics in Economic History 3 Credits**

This course will focus on the progress and development of economic institutions of industrialized nations. These institutions, such as private property, free markets, financial intermediation and discretionary fiscal policy, will be discussed in a historical perspective. Prerequisites: EC 201 and EC 202. Offered in the spring odd years.

**EC 301 Intermediate Price Theory 3 Credits**

A study of the economic behavior of consumers and producers and their interrelationship in a market economy. Emphasis is on the application of economic theory and the tools of analysis to price determination and market behavior. Welfare economics and other modern analytical techniques are also introduced. Prerequisites: EC 201, EC 202 and either MA 108 or MA 121.

**EC 302 National Income Analysis 3 Credits**

The theory and policies of determining national income, achieving economic stability and maintaining economic growth. Attention is given to leading post-Keynesian and Monetarist economists' interpretation of current economic conditions. Prerequisites: EC 201, EC 202, and either MA 108 or MA 121.

**EC 304 Labor Economics 3 Credits**

Operation of labor markets from theoretical and policy perspectives. Topics include: human capital theory, the impact of labor unions and public policy issues relevant to collective bargaining, unionism, wages and income. Prerequisites: EC 201 and EC 202. Offered in the spring even years.

**EC 310 Money and Banking 3 Credits**

The principles and institutions of money, banking and finance as they influence the performance of the economy. The major topics covered are the nature of money, commercial banking and financial institutions, central banking, monetary theory, monetary policy, inflation and the international monetary system. Prerequisites: EC 201, EC 202 and QM 213 or permission of the instructor.

**EC 331 Business and Government 3 Credits**

A study of the institutional relationships between business and government, with stress upon public policies toward business and the role of government in fostering competition. Emphasis is placed upon the economic effects of the antitrust laws through outside readings and analysis of landmark court decisions. Other topics covered are concentration and mergers, restrictive business practices, monopoly and oligopoly. Prerequisites: EC 201 and EC 202. Offered in the fall even years.

**EC 403 Comparative Economic Systems 3 Credits**

The study of major economic systems. Theories of capitalism, socialism and communism and their implementation by major nations are discussed. Prerequisites: EC 201 and EC 202. Offered in the spring odd years.

**EC 406 Public Finance 3 Credits**

An investigation of the effects of government expenditures and revenues on the efficiency of resource allocation and the equity of the income distribution. Topics covered include public goods, externalities, benefit-cost analysis, the structure of major taxes and expenditure and tax incidence. Prerequisites: EC 201 and EC 202. Offered in the fall even years.

**EC 419 International Economics 3 Credits**

International trade and the theory of comparative advantage. Special attention is given to free world trade and economic development in other countries and groupings as in the European Common Market. Prerequisites: EC 201 and EC 202. Offered in the fall odd years.

**EC 421 History of Economic Thought 3 Credits**

Development of economic thought with emphasis upon the evaluation of economic theory as it has developed in response to problems of society. Prerequisites: EC 201 and EC 202. Offered in the fall odd years.

**EC 499 Seminar in Economics and Finance 3 Credits**

A capstone economics course designed to integrate the students' undergraduate studies in economics, management, accounting, information systems and finance. Prerequisite: senior standing and permission of instructor.

## Education (ED)

### Courses

**ED 101 Foundations of Education I 1 Credit**

This is a one-credit course that is offered during the first semester of the freshman year and introduces teacher education licensure candidates to the teaching profession. Topics include teacher characteristics, demands of the profession, self assessment, the nature of teaching, and an introduction to the development of the professional portfolio. Offered in the Fall.

**ED 102 Foundations of Education II 1 Credit**

Observations of children and adolescents in day care, preschool, and the public schools. 1 lecture hour.

**ED 104 Foundations of Education 3 Credits**

This course examines the historical, sociological, and philosophical foundations of the American educational system. Current trends in education will be reviewed and evaluated. Issues affecting the role of the teacher, including school governance and finance, legal foundations, social influences, and educational reform will be explored. This course is a prerequisite course for ED 234 Learning Strategies for Education Majors. Offered Fall and Spring semesters. 3 lecture hours.

**ED 234 Learning and Teaching Strategies 4 Credits**

This course includes an overview of the most commonly used strategies in elementary and secondary classrooms. Topics include planning, instructional objectives, media and computer applications, common learning strategies (lecture, discussion, cooperative learning, role playing, questioning, discovery learning) evaluation and assessment of learning. Secondary teacher licensure candidates prepare units and lessons in their fields of study applying specific methods and materials of the subject area. All students participate in microteaching situations. Required for elementary and secondary teacher licensure candidates. Twelve hours of classroom observation are required in this course. Offered in Fall. Prerequisite: ED 104.

**ED 315 Special Needs Child 3 Credits**

An introduction to the developmental, emotional, behavioral, and learning characteristics of the special child. Topic areas include learning disabilities, intellectual disabilities, emotional disorders, and physical handicaps. Also included are federal and state laws, regulations, curricular adaptations and integration strategies. Required and only for elementary and secondary Teacher/Education Licensure Candidates. Prerequisite: ED 234 or permission of the instructor. 3 lecture hours.

**ED 351 Methods of Teaching Science to Elementary Students 3 Credits**

This course examines objectives, methods, and content in elementary science instruction. Emphasis will be on student preparation, teaching and carrying out science activities. These activities will be ready for classroom use. National standards, Vermont Framework, and Vermont Grade Cluster Expectations will be the basis for the content and for the appropriateness of content at different grade levels. This course cannot be used to meet the general education laboratory levels. Prerequisite ED 234. Ten hours of practicum is required and development of portfolio continues. A service-learning component is also offered to all students.

**ED 360 Language Arts and Teaching Reading in the Elementary School 4 Credits**

A study of language development and reading, including an introduction to traditional instructional methodologies of reading and a study of the whole language approach to the language arts. Students will have opportunities to apply theory in various settings. Required for elementary teacher licensure candidates. Prerequisite: ED 234. Twelve hours of classroom observation are required in this course. A service Learning component is also attached to this course which will provides students an opportunity to work in the community in the context of literacy. Development of portfolio continues.

**ED 363 Reading and Writing in the Content Area 4 Credits**

A course designed to familiarize content area teachers with the theories and practices of reading and writing in specific disciplines. Students will examine the developmental nature of the reading and writing processes and design discipline-specific materials. Students work as tutors at the secondary and college levels. Required of secondary teacher licensure candidates. Prerequisite: ED 234. A Practicum of 30 hours will be done by Secondary track students during this course. Offered in Spring.

**ED 368 Curriculum & Methods in Secondary Subjects 4 Credits**

An examination of the curriculum and teaching strategies associated with the subjects taught in the secondary school, including English, mathematics, science, and social studies. Students will learn about the general methods for teaching at the Middle/High school level, but will concentrate on their area of content concentration in both their practicum and final project. Knowledge and research in child growth and development is used as a guide for determining the curriculum materials and procedures that are suitable for secondary education students. Students work with adolescents, develop curriculum, and teach lessons in the Middle/High School. Students will keep a reflective journal of all their experiences in the practicum. Required for Teacher Education Licensure secondary track. A Practicum of 30 hours will be required in this course. Offered in the fall. Development of a portfolio continues.

**ED 401 Topics in Education 1 Credit**

In this course students are involved in individual investigation, survey, or a project related to education. Offered on demand.

**ED 403 Topics in Education 3 Credits**

In this course the student has an opportunity to select and read in a specific area of interest in education that is not available through regular course offerings. Offered on demand.

**ED 425 Student Teaching 12 Credits**

In this course there is a full-time student teaching assignment. This course may be taken only as a part of the teacher education licensure program. This is a capstone course for teacher education Licensure students. Offered every semester. 14 lecture hours. A service-learning component is embedded in this course.

**ED 432 Curriculum and Methods of the Elementary School 4 Credits**

An examination of the curriculum and teaching strategies associated with the subjects taught in the elementary school, including mathematics, science, social studies, health, physical education, and the fine arts. Knowledge and research in child growth and development are used as a guide for determining the curriculum materials and procedures that are suitable for children. Students work with children to develop curriculum and teach lessons in the elementary school. Required for elementary teacher licensure candidates. A Practicum of 30 hours will be done during this course. Usually offered in the spring semester.

## Electrical Engineering (EE)

### Courses

**EE 200 Engineering Programming 3 Credits**

Introduction to a high level programming language such as C/C++. Topics include structure and organization of a computer program, variables and basic data types, flow of control, functions, file I/O, arrays and strings, computer memory, CPU and pointers, user defined structures, computer algorithms, modular design and documentation. Introduction to object oriented programming concepts. This course is offered once a year.

**EE 204 Electrical Circuits I 3 Credits**

A study of principles and methods of analysis of electric circuits with both direct and time varying sources in the steady state. KCL, KVL, mesh and nodal techniques. Network theorems are developed and applied to the analysis of networks. Energy storage elements. First order and second order circuits with forced and natural responses. Sinusoidal analysis, complex numbers, phasor diagrams. Power; average effective, and complex power in single phase systems. Classroom: 3 hours. Corequisite: MA 122.

**EE 215 Fundamentals of Digital Design 4 Credits**

An introductory course on formal design techniques for combinational and sequential logic circuits. Topics include combinational logic networks, minimization techniques, registers, synchronous sequential networks, and control units. Applications of the concept developed in the classroom will be implemented in the laboratory. Classroom 3 hours, laboratory 2 hours.

**EE 240 Electrical Concepts and Applications 3 Credits**

A course on the theory and application of electrical devices and circuits. Discussions include magnetic circuits, transformers, electric machines, diodes, bipolar transistors, and field effect transistors. Integrated circuits are introduced. Digital switching circuits are treated, including logic gates, flip-flops, and counters. Operational amplifiers and their major applications are studied. Offered to qualified students not majoring in Electrical Engineering. Classroom 2 hours, laboratory 3 hours. Prerequisite: EE 204.

**EE 242 Digital Systems Design 4 Credits**

Topics are hierarchical design methods, design and debugging of digital hardware, determination of circuit behavior, control and timing, machine organization, control unit implementation, and interface design. A hardware design language will be used and students will acquire design experience implementing digital hardware. Classroom 3 hours, laboratory 2 hours. Prerequisite: EE 215.



**EE 303 Electromagnetic Field Theory I 3 Credits**

Maxwell's Equations are developed from the experimental laws of electric and magnetic fields. Topics involving electric fields include Gauss's Law, divergence, energy, potential, conductors, dielectrics, and capacitance. Topics involving magnetic fields include the Biot-Savart Law, Ampere's Law, magnetic forces, magnetic materials, and inductance. Maxwell's Equations are used to describe wave motion in free space and in dielectric media. Classroom 3 hours. Prerequisites: MA 223, EE 204.

**EE 315 Electrical Energy Systems 3 Credits**

A course on the design and implementation of electrical energy systems. Topics include thermal, wind, solar, and hydro renewable electrical energy facilities, electric transmission and distribution systems, and electrical substations. Introductory topics include basic circuit analysis, transformers, motors and drive systems, and instrumentation. Includes hands-on demonstrations and experiments. Offered to qualified students not majoring in Electrical Engineering. Classroom 3 hours. Prerequisite: MA 122.

**EE 321 Embedded Systems 4 Credits**

The use of computing devices in embedded applications is introduced. Computer organization topics include the arithmetic logic unit, timing and control, memory, serial and parallel I/O ports, and the bus system. Programs are written and run in assembly language and higher-level languages. Additional topics include peripheral interface control, interrupts, cross assembly and applications. Classroom 3 hours, laboratory 2 hours. Prerequisite: EG 110 or IS 130.

**EE 325 Computer Architecture and Operating Systems 3 Credits**

Machine architecture - machine performance relationships, computer classification, and computer description languages. Consideration of alternative machine architectures. Software influences on computer design. Topics include digital logic, VLSI components, instruction sets, addressing schemes, memory hierarchy cache and virtual memories, integer and floating point arithmetic, control structures, buses, RISC vs. CISC, multiprocessor and vector processing (pipelining) organizations. Examples are drawn from Pentium and Sparc microcomputers. The primary focus is on the attributes of a system visible to an assembly level programmer. This course also introduces the fundamentals of operating systems. Topics include concurrency, scheduling, memory and device management, file system structure, security, and system performance evaluation. Lecture 3 hours. Offered once per year.

**EE 350 Linear Systems 3 Credits**

This course provides the foundations of signal and system analysis. Linear, time-invariant, causal, and BIBO stable analog and digital systems are discussed. System input-output descriptions, convolution and the impulse response are covered. Additional topics include singularity functions, Fourier and Laplace circuit analysis, circuit transfer functions, Bode plots, ideal filters, and real filters including Butterworth, Chebyshev, and Elliptic. Discrete topics include the transform, difference equations, FIR and IIR filters, the bilinear transformation, the DTFT, the DFT, and the FFT. Classroom 3 hours. Prerequisite EE 356.

**EE 356 Electrical Circuits II 3 Credits**

This course is a continuation of Electric Circuits I (EE 204). The complete solutions of linear circuits by Laplace transforms are developed. The concepts of frequency response, resonance, network functions, two port networks including hybrid parameters are studied in depth. The concepts of transformers, power, coupled circuits, multi-phase circuits, and Fourier series are introduced. Computer-based circuit simulation is used throughout. Classroom 3 hours. Prerequisite: EE 204.

**EE 357 Electronics I 3 Credits**

The basic building blocks used in electronic engineering are studied. Diodes, bipolar transistors, and MOS transistors are modeled and then used to describe the operation of logic gates and amplifiers. Emphasis is placed on the operation and applications of standard integrated circuit chips. Classroom 3 hours. Prerequisite: EE 204.

**EE 359 Electrical Engineering Laboratory 1 Credit**

Implementation, analysis, and design of electric and electronic circuits involving resistors, inductors, capacitors, diodes, bipolar transistors, MOS transistors, operational amplifiers and filters. Study and practice in the use of standard electrical engineering laboratory instrumentation. Laboratory 2 hours. Prerequisite: EE 215; corequisites: EE 356, EE 357.

**EE 366 Electronics II 4 Credits**

This course is a continuation of Electronics I (EE 357). Analog and digital circuits are discussed. Analog topics include frequency response, real world applications of operational amplifiers, power amplifiers, filters, oscillators and A/D and D/A converters. Digital electronic building blocks are discussed, including flip-flops, counters, coding and decoding circuits and memory. Classroom 3 hours, laboratory 2 hours. Prerequisites: EE 357, EE 359.

**EE 373 Electrical Energy Conversion 4 Credits**

A course on principles of energy conversion in electromechanical devices and machines. Analysis of transformers, polyphase synchronous and asynchronous machines, single phase fractional horsepower machines, and DC machines. Classroom 3 hours, laboratory 2 hours. Prerequisite: EE 356; corequisite: MA 224.

**EE 399 Electrical Engineering Topics 3 Credits****EE 411 Infrastructure Control Systems 4 Credits**

This course deals with organization, operation and design of systems where the microprocessor controls special interfaces to non-standard devices and responds to external events in a timely fashion. Topics include interface of special purpose peripherals, data structures, control structures, program and data organization and real time operating systems. Application to communications, automated measurement, process and servo control are discussed. Classroom 3 hours, laboratory 2 hours.

**EE 459 Power Systems Analysis 3 Credits**

This course presents the foundations of electric power systems analysis after an initial review of single and three-phase power, complex power and transformers. Topics include per unit quantities, generators, transmission line models, transformer models, short-circuit analysis, load flow, and power systems economics. Lecture: 3 hours. Prerequisites: EE 356 and EE 373. Offered once per year.

**EE 463 Communication Systems 4 Credits**

Analog transmission of information signals by communication systems is analyzed. The component parts of transmitters and receivers including AM/FM modulators, filters, detectors and decoders are discussed. Mathematical concepts include the Fourier Series, Fourier Transform, dirac delta function and sinc function. Signal classification and digital modulation techniques such as ASK, FSK, PSK, PAM and QAM. Classroom 3 hours, laboratory 2 hours. Prerequisites: EE 356, EE 357, EE 359.

**EE 468 Solid State Materials 3 Credits**

Solid state materials, physics of electronic devices and integrated circuit design are studied. Topics include silicon crystal properties, diffusion, implantation, lithography and circuit fabrication. Device models are derived for junction diodes, bipolar and MOS transistors. Classroom 3 hours. Prerequisites: EE 303, EE 357.

**EE 478 Control Systems 3 Credits**

Analysis and design of continuous-time and discrete-time control systems using classical and state-space methods. Laplace transforms, transfer functions and block diagrams. Transient-response analysis, Routh-Hurwitz stability criterion, and steady-state error analysis. Analysis of control systems using the root-locus and frequency-response methods. Computer-aided design and analysis. Lecture: 3 hours. Prerequisites: EE 204 and MA 224. Offered once per year.

**EE 486 Digital Signal Processing 3 Credits**

An introductory level course that discusses the conversion of analog signals to discrete time signals. Emphasis will be on the processing of discrete signals using both time-domain and frequency-domain analysis. These techniques will be applied to the design of digital filters. Classroom 3 hours. Prerequisite: EE 350 or instructor's permission.

**EE 487 Digital Signal Processing Lab 1 Credit**

Implementation analysis and design of digital signal processing functions and techniques. Study and practice in the use of software and hardware platforms used for digital signal processing applications. Laboratory: 3 hours. Prerequisite: EE 350. Co-requisite: EE 486. This course is offered once a year.

**EE 490 Advanced Topics 3 Credits**

A course that provides advanced study in an area of the instructor's special competence. Courses that have been offered in the past include Power System Stability, Electrical Communications II, Microwave Theory and Techniques and Digital Systems. Offered as the occasion demands. Classroom 3 hours. Prerequisite: senior standing.

**EE 491 Electrical System Design I 3 Credits**

Introduction to design problems. Application of concepts of electrical engineering to a capstone design project. The first of a two-semester sequence, this course focuses on the problem statement, specification, preliminary design, design review and approval stages of the design processes, the design process involves exploring alternate solutions and design optimization and simulation. Economic constraints and human factors are considered in the design process. The course requires nine hours per week of directed reading, research and experimentation. Prerequisite: seventh semester standing and permission of the instructor.

**EE 494 Electrical System Design II 3 Credits**

This course is the second in the two-semester capstone design project sequence. It focuses on the final stages of the design process-finalized design, implementation and testing. A written project report and an oral presentation to students and faculty is required. Nine hours per week of directed readings, research, and experimentation. Prerequisite: EE 491.

## Common Engineering (EG)

### Courses

**EG 043 Conference 0 Credits**

A scheduled weekly conference hour with the faculty and senior engineering students for discussions of topics such as placement, professional registration, professional ethics, and professional growth after graduation. The course includes a substantial writing component on ethics. A grade of satisfactory (S) is required for graduation. Classroom 1 hour. Prerequisite: senior standing.

**EG 044 Conference 0 Credits**

A scheduled weekly conference hour with the faculty and senior engineering students for preparation of the Fundamentals of Engineering (FE) exam. The student must take the FE exam to receive a satisfactory grade in this course. EG 044 is not required if the student has already passed the FE exam. Classroom 1 hour. Prerequisite: senior standing.

**EG 109 Introduction to Engineering I 3 Credits**

An introduction to engineering, the concepts of engineering design and the non-technical aspects of engineering. The concepts of graphical communication skills to depict engineering designs using computer aided drawing will be covered. Students will perform design projects to incorporate the technical and the non-technical aspects of design into projects. Classroom 2 hours; laboratory 3 hours.

**EG 110 Introduction to Engineering II 3 Credits**

A continuation of EG 109 to include an introduction to engineering computing through the design of algorithms to solve engineering problems. The design projects will be coordinated with mathematics and science courses being taken concurrently by the students to reinforce the material learned in those courses. Design projects will include the technical and non-technical aspects of engineering design. Prerequisite: EG 109 or permission of the instructor. Classroom 2 hours; laboratory 3 hours.

**EG 111 Fundamentals of Engineering I 3 Credits**

An introduction to engineering and the concepts of engineering design. Includes an introduction to graphical communication skills used in engineering through the use of sketching and computer-aided design (CAD) on personal computers. The concepts of orthographic and isometric drawings are stressed and extended to include sections and dimensions. The use of spreadsheets in engineering is also included. This course is open only to students in an Engineering major or those with permission of the Engineering Division Head. Classroom 2 hours, laboratory 3 hours.

**EG 112 Fundamentals of Engineering II 4 Credits**

A continuation of the concepts of engineering design. Includes an introduction to engineering computing through the design of algorithms using structured techniques that employ a high-level engineering computer language. This course is open only to students in an Engineering major or those with permission of the Engineering Division Head. Classroom 3 hours, laboratory 2 hours.

**EG 201 Engineering Mechanics (Statics, Dynamics) 3 Credits**

A course in elementary engineering mechanics. Vector notation. Force systems, moments, equilibrium, the free body diagram. Friction, simple frames, trusses, beams, centroids, and second moments. Kinematics: rectilinear and curvilinear motion; translation and rotation; relative motion. Kinetics: force, mass, and acceleration; impulse and momentum; work and energy. Elementary vector calculus. Classroom 3 hours. Corequisites: MA 122 and PS 211.

**EG 202 Engineering Mechanics (Statics, Dynamics) 3 Credits**

A course in elementary engineering mechanics. Vector notation. Force systems, moments, equilibrium, the free body diagram. Friction, simple frames, trusses, beams, centroids, and second moments. Kinematics: rectilinear and curvilinear motion; translation and rotation; relative motion. Kinetics: force, mass, and acceleration; impulse and momentum; work and energy. Elementary vector calculus. Classroom 3 hours. Prerequisites: EG 201 and MA 122.

**EG 203 Materials Science 3 Credits**

An introduction to the science of materials based on the physics and chemistry of their internal structures. The effects of structure on the properties and behavior of metallic, polymeric, ceramic, semiconductor, and composite materials. Classroom 3 hours. Prerequisite: CH 103.

**EG 206 Thermodynamics I 3 Credits**

A study of the fundamental concepts and laws of thermodynamics and of the properties of pure substances, with applications to engineering processes and operations. Classroom 3 hours. Corequisite: MA 122.



**EG 301 Mechanics of Materials 3 Credits**

A course on the concepts of stress and strain; effect of loads; analysis of plane stress and strain; deformations of beams, shafts, and axial members; buckling and combined stresses. Classroom 3 hours. Prerequisite: EG 201.

**EG 303 Fluid Mechanics 3 Credits**

A study of fluid properties and their significance. Fundamental mechanics of compressible and incompressible fluid motion with application to engineering problems. Topics include resistance of fluids in laminar and turbulent flow; open-channel flow; fluid statics; dimensional analysis and similitude. Classroom 3 hours. Prerequisite: MA 122; Prerequisite or concurrent enrollment: EG 206 or permission of the instructor.

**EG 447 Special Projects (Technical Elective) 1-6 Credit**

A report on an approved engineering design project or topic area to meet the specific objectives of a student in a particular area of study. Limited to students who have organized plans and/or projects that can be related to their engineering interests. Hours and credits to be arranged. Prerequisite: permission of the curriculum department chair and advisor.

**EG 450 Professional Issues 3 Credits**

A course to prepare the engineering student for the non-technical aspects of the engineering profession. Topics covered include engineering registration, ethical responsibilities, malpractice and legal responsibilities, and the business aspects of the engineering profession. Classroom 2 hours. Recitation 2 hours. Prerequisites: junior or senior status.

## Engineering Management (EM)

### Courses

**EM 101 Introduction to Construction Project Management 3 Credits**

This course provides a broad overview of the managerial, technological and physical processes that are involved in the creation of the built environment. It specifically focuses on understanding the issues in the management of a construction project. (Prerequisites: none. 3 credit-hours - 2 hours lecture and 3 hours lab).

**EM 301 Project Management 3 Credits**

The course covers the principles and practices of project management with particular emphasis on issues related to engineering and construction projects. Students will learn the principles of project management within the firm and in an environment characterized by inter firm relationships. 3 hours of class time per week.

**EM 302 Supply Chain Management 3 Credits**

The course covers the principles and practices of supply chain management with particular emphasis on issues related to engineering and construction projects. Students will learn the principles of supply chain management and purchasing in an environment characterized by inter firm relationships. 3 hours of class time per week.

**EM 320 Construction Productivity 3 Credits**

This course focuses on the planning and execution of the construction of vertical and horizontal construction projects. The course emphasizes the means and methods associated with heavy civil projects, earthwork, and the construction of the project's structural elements. Equipment selection and methods will be a major focus. (Prerequisites: Junior standing. 3 credit-hours lecture).

**EM 399 Safety 3 Credits****EM 401 Pre-Construction Management 3 Credits**

This course addresses the initial phases of the building creation process. It focuses on addressing the owner's design and construction needs and the delivery of value to the owner. Business development, estimating, planning and presentation skills are emphasized. A Design/ Build model is employed to encompass the full spectrum of architecture, engineering and construction (AEC) requirements. Classroom 3 hours. Prerequisites: EM 302.

**EM 402 Construction Management Practices 3 Credits**

A capstone and practicum course in construction management engineering that explores the processes of management as applied to actual construction projects. Topics will be reviewed in the seminar and students will work in teams to review how these topics were applied in an actual construction project and to design a construction management plan for a proposed project during laboratory. Two 1.5 hours seminar periods and a 3 hour laboratory per week. Prerequisite: EM 301 and EM 302.

## English (EN)

### Courses

**EN 005 Basic English 3 Credits**

A review of the fundamentals of composition designed to raise the student's command of English to the college level. Required for those whose tests and records demonstrate weakness in diction, spelling, grammar, punctuation and organization. Offered fall semester only. Students assigned to EN 005 must successfully complete the course before enrolling in EN 101. This course will not meet any degree requirements and cannot be used as an elective.

**EN 101 Composition and Literature I 3 Credits**

EN 101 is devoted chiefly to the principles of written organization, exposition, argumentation, and research. Pre-Requirement: EN 005 or incoming test score.

**EN 102 Composition and Literature II 3 Credits**

EN 102 provides, through an extension and intensification of the methods and approaches of EN 101, an introduction to fiction, poetry, drama, and film. Prerequisite: EN 101.

**EN 105 English as a Foreign Language I 3 Credits**

A course for intermediate non-native speakers of English that stresses writing, reading, speaking, listening improvement and provides an introduction to the social and cultural values of the English-speaking world. Placement by TOEFL score.

**EN 106 English as a Foreign Language II 3 Credits**

A course for advanced non-native speakers of English that stresses writing, reading, speaking, listening improvement and provides an introduction to the conduct, organization and reporting of library research. Prerequisite: EN 105 or permission of the instructor.

**EN 107 Composition and Literature for Foreign Nationals I 3 Credits**

A course for advanced non-native speakers of English that parallels the content and structure of EN 101. The student and instructor will meet in conference to assess the student's progress in the course. Prerequisite: EN 106 or permission of instructor.

**EN 108 Composition and Literature for Foreign Nationals II 3 Credits**

A course for advanced non-native speakers of English that parallels the content and structure of EN 102. The student and instructor will meet in conference to assess the student's progress in the course. Prerequisite: EN 107 or permission of instructor.

**EN 112 Public Speaking 3 Credits**

A practical course in the fundamentals of public address and speech analysis.

**EN 201 World Literature I 3 Credits**

A course that examines representative works of world literature up to the mid-seventeenth century. Texts are explored in their historical, cultural, and social contexts. EN 201 is not a prerequisite for EN 202. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every semester. A required course for the Bachelor of Arts degree; A recommended literature course for fulfillment of General Education degree requirements in literature, Arts and Humanities, or English.

**EN 202 World Literature II 3 Credits**

A course that examines representative works of world literature from the mid-seventeenth century to the present. Texts are explored in their historical, cultural, and social contexts. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every semester. A required course for the Bachelor of Arts degree; A recommended literature course for fulfillment of General Education degree requirements in literature, Arts and Humanities, or English.

**EN 203 Advanced Composition 3 Credits**

A course designed to move beyond the fundamentals of writing studied in EN 101 and EN 102 and to develop the student's abilities as a writer through the composition and analysis of extended essays on a variety of topics, employing a range of rhetorical approaches. Pre-Requisite: EN 102 or 108.

**EN 204 Professional and Technical Writing 3 Credits**

A course that teaches the theory and practice of communicating on the job. Instruction addresses written, visual, and oral technical communication. Assignments involve students in practical, collaborative and technologically informed learning modeled upon realities of the work place. Pre-Requisite: EN 102 or 108.

**EN 210 Modern Short Story 3 Credits**

A study of the short story genre through reading, discussion, and written analysis of selected modern stories. The course also addresses the history of the short story and the nature and uses of literary art. Pre-Requisite: EN 102 or 108. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 220 Children's Literature 3 Credits**

A course familiarizing students with the range and history of children's literature. Students revisit beloved classics as well as significant contemporary works, analyzing literary value. Pre-Requisite: EN 102 or 108. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 225 Survey of British Literature I 3 Credits**

An overview of British literature from the Anglo Saxons to the late-eighteenth century in their historical and cultural contexts, with attention to the development of the English language. May include texts in Middle English. Selections may include sermons, chronicles, and letters as well as fiction, poetry, and drama. Provides a foundation for upper-level study in the discipline and is required for English majors. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every fall.

**EN 226 Survey of British Literature II 3 Credits**

An overview of British literature from the Romantics to the present in their historical and cultural contexts. May include non-fiction as well as fiction, poetry, and drama. Provides a foundation for upper-level study in the discipline and is required for English majors. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every spring.

**EN 227 Survey of American Literature I 3 Credits**

An overview of colonial and post-Revolutionary writing in its historical and cultural contexts, including the work of European explorers and native peoples in the eighteenth and early nineteenth centuries. Selections may include letters, travel narratives, and political documents as well as fiction, poetry, and drama. Provides a foundation for upper-level study in the discipline and is required for English majors. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every fall.

**EN 228 Survey of American Literature II 3 Credits**

An overview of American writing from the Civil War to the present in its historical and cultural contexts. Selections may include non-fiction as well as fiction, poetry, and drama. Provides a foundation for upper-level study and is required for English majors. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every spring.

**EN 239 Introduction to Theater 3 Credits**

A course that provides a basic introduction to theater as an art form and as an academic discipline. Topics of study include a survey of theater history; an analysis of the different forms of drama, including representative plays; and an introduction to the performance aspects of acting, directing, and theatrical design. Pre-Requisite: EN 102 or 108. Fulfills General Education Humanities requirement but will not serve as literature elective.

**EN 240 Technical Aspects of Theatrical Design 3 Credits**

A course that provides instruction in all phases of the construction of scenery, costumes and in lighting production, together with an introduction to the design of these elements. Pre-Requisite: EN 102 or 108.

**EN 241 Acting and Directing 3 Credits**

A course that introduces the basic techniques of acting and directing, including instruction in the relationship of the actor to the other actors on the stage. Extensive use is made of improvisation and theater games. Directing instruction gives the student practice in the solution of directorial problems through the staging of scenes, tableaux and pictorial dramatizations. Pre-Requisite: EN 102 or 108.

**EN 242 Play Production 1-3 Credit**

A course that provides study and performance of theater and play production techniques as well as rehearsal and presentation of a full-scale dramatic production. Students may choose to audition to act in a play or to work on one of the technical support crews. Three accumulated hours will comprise one 3-credit for free elective use only.

**EN 244 The Literature of Leadership 3 Credits**

A survey of major literary texts dealing with the theme of leadership. Differing examples and ideals of leadership are related to the philosophical assumptions and cultural values of the authors and civilizations represented by each work. Both advocacy and critique of these ideals are examined; contrasts among them emphasize the ethical implications of leaders' decisions. Topics include relationships among leadership, religion, and philosophy; leadership and technology; the role of coercion or political/economic power; and the potential conflicts of leadership and individual freedom. Pre-Requisite: EN 102 or 108. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 245 Science Fiction Literature 3 Credits**

A study of representative readings in science fiction literature centered on novels and short fiction from the late-nineteenth century to the present with a focus on how these works develop major themes associated with the genre. Prerequisites: EN 102 or EN 108. 3 lecture hours. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 250 Crime in Literature 3 Credits**

A course in which students read and discuss works of literature that explore the ethical, social and philosophical implications of criminal behavior and society's response to it. Pre-Requisite: EN 102 or 108. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 251 Literature of the Sea 3 Credits**

A study of literature about life at sea, especially during times of crisis. The course examines attitudes toward solitude, comradeship and the ocean's beauty and power. Moral and physical qualities needed by a ship's officers and crew are also discussed. Readings are drawn from world literatures, ancient and modern. Pre-Requisite: EN 102 or 108. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 270 Military Literature 3 Credits**

A study of men and women in war and the military service, their ideals, experiences, and strategies as seen in foreign and American military literature of the 19th and 20th centuries. Pre-Requisite: EN 102 or 108. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 272 Veterans' Literature and Writing 3 Credits**

In this course, students read a selection of works by veterans to explore how soldier-writers have given voice to their military experiences and to reflect on how writers have depicted war and the military experience. These texts will serve as models to students as they develop personalized writing projects, either critical or creative, over the course of the semester. This course is open to anyone who is currently serving, or has served, in any branch of the military. This course fulfills a literature, writing or humanities requirement. Prerequisite: EN 102 or EN 108 and instructor permission. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 274 Introduction to Creative Writing 3 Credits**

Introduction to Creative Writing establishes the principles and practices of writing creative nonfiction, fiction, and poetry. In addition to reading works in these three genres as models, students will produce original pieces that apply the theoretical principles of creative writing. 3 lecture hours.

**EN 276 Environmental Writing 3 Credits**

Environmental Writing invites students to explore environmental issues such as sustainability, conservation, preservation, and wildlife management through creative writing and persuasive writing. Students will analyze how writers of fiction, poetry, and creative nonfiction invite their readers to take action. Students may also conduct independent research, which is often immersive or experiential, on an environmental topic towards the composition of their own creative essays, stories, and poems.

**EN 278 Writing for the Web 3 Credits**

Writing for the Web examines the ways that digital technologies impact writing. Through experimentation with different written modes, as well as the manipulation and analysis of various media, students will compose and revise content for web-based environments. This course approaches writing from a rhetorical perspective that emphasizes purpose and audience. Students practice using various existing and emerging technologies, but prior technical training is not required.

**EN 282 Literary Methods 3 Credits**

Literary Methods serves as an introduction to scholarship in the discipline of English. To begin, students will examine the evolution and current state of English literary study as a discipline, learn how a literary text becomes an object of study, and identify a secondary text and the kinds of methodologies at work in them. Students themselves will then engage in the practice of literary research and analytical writing by focusing on one text in English and its respective body of criticism. Course work will comprise gathering and analyzing primary and secondary sources, enhancing close reading skills, and performing a substantive piece of research. Auxiliary critical writing exercises might include an annotated bibliography or a literature review. Required for the English major and minor. Prerequisites: EN 102 or EN 108. 3 lecture hours.

**EN 292 American Ethnic Literature & Cultural Literature 3 Credits**

The purpose of this course is two-fold: to acquaint the student with the writings of representative ethnic groups in America in terms of their contributions to American literature and culture in general; and to familiarize the student with both the problems of minority groups in integration and with the solutions which have been offered to these problems by the minority representatives themselves. The course will cover as many minority groups as time allows. Prerequisite: EN 102 or EN 108. 3 lecture hours. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 299 Topics in English Studies 3 Credits**

Topics vary. Designed as a Humanities elective for non-majors. Prerequisite: EN 102 or EN 108. Course may be repeated for credit with a different topic. 3 lecture hours.

**EN 307 The History of the Motion Picture 3 Credits**

A study of the development of the motion picture from a technological curiosity to a powerful, pervasive vehicle for art and argument. Pre-Requisite: EN 102 or 108. Fulfills General Education Humanities requirement but will not serve as literature elective.

**EN 308 The Motion Picture Director 3 Credits**

A study, through readings and viewings of representative films, of the work of three great motion picture directors: The emphasis will be on their contributions to the art of the motion picture and their statements as artists viewing their own times. Pre-Requisite: EN 102 or 108. Fulfills General Education Humanities requirement but will not serve as literature elective.

**EN 310 The Art of the Motion Picture 3 Credits**

A study of cinema art direction, photography, editing, writing and acting. Classes involve lecture, discussion, readings in film criticism and the viewing of selected films. Pre-Requisite: EN 102 or 108. Fulfills General Education Humanities requirement but will not serve as literature elective.

**EN 311 American Film Comedy 3 Credits**

A study of representative American film comedies from a variety of standpoints: generically (as manifestations of comic tradition); culturally (as examples of satire and social criticism); aesthetically (as products of cinematic and literary techniques); historically (as parts of an evolving tradition). Representative films include works by Keaton, Chaplin, the Marx Brothers, W. C. Fields, Jerry Lewis, Stanley Kubrick, Woody Allen and others. Pre-Requisite: EN 102 or 108. Fulfills General Education Humanities requirement but will not serve as literature elective.

**EN 320 Literature of the Developing World 3 Credits**

A study of the literature of developing nations. The course emphasizes works that reveal a country's distinctive religious, social, economic, political institutions and the challenges that confront them. Topics to be discussed may include colonialism: the struggle for national identity: the impact of modern technologies on traditional values: tensions between military power and democratic processes: and the clash between the wealthy and the poor. Pre-Requisite: EN 102 or 108. A recommended literature course for fulfillment of General Education or Bachelor of Arts degree requirements in literature, Arts and Humanities, or English.

**EN 322 Topics in World Literatures 3 Credits**

A seminar that focuses on a specific period, genre, region, or topic of interest in the field of World Literatures. Sample topics may include Global Shakespeares, Developing World Literatures, The Trojan War, Caribbean Women Writers, or Global Modernisms. Required texts will be in English translation; foreign language training is neither assumed nor required. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered once a year. May be repeated for credit with a different topic.

**EN 333 The Plays of Shakespeare I 3 Credits**

A study of selected early comedies, tragedies, and history plays. Pre-Requisite: EN 102 or 108.

**EN 334 The Plays of Shakespeare II 3 Credits**

A study of selected mature comedies, problem plays, tragedies and romances. Pre-Requisite: EN 102 or 108.

**EN 350 History of the English Language 3 Credits**

This course will trace the linguistic, material, and cultural development of the English language from its North Germanic beginnings to its current status as a global lingua franca, with special attention to the early British forms. We will attend to the structure of language (e.g., lexicon, syntax, phonetics) as well as to its socio-political aspects (e.g., migration, class, codification). Students will be asked to read, analyze, and contextualize texts in Old, Middle, and Early Modern English. Required for the English Major. Fulfills Gen. Ed. Humanities requirement but will not serve as literature elective. Prerequisite: EN 102 or EN 108.

**EN 362 Rhetorical Criticism 3 Credits**

Rhetorical Criticism provides students with a general understanding of rhetoric and with knowledge of specific rhetorical traditions such as neo-Aristotelian criticism, metaphorical analysis, narrative/cluster criticism, fantasy theme analysis, and genre criticism. The goals of this course are to engage in systematic, prolonged inquiry and to recognize how different persuasive strategies produce specific meanings. EN 362 Rhetorical Criticism further advances the skills initially developed in EN 203 Advanced Composition.

**EN 364 Intermediate Creative Writing 3 Credits**

Intermediate Creative Writing develops the foundational skills learned in EN 274 Introduction to Creative Writing. Students examine poetry, fiction, and creative nonfiction in order to understand and employ advanced techniques such as flashback, metaphor, and point of view. Genres may also include memoir, the travel essay, free verse poetry, and/or flash (non)fiction. By the end of the semester, students are expected to apply these elements of craft to produce original creative work.

**EN 370 Topics in British Literature 3 Credits**

A seminar that focuses on a period or a topic of interest in the field of British Literature. May be repeated for credit with a different topic. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every semester.

**EN 373 Major Author 3 Credits**

A course that focuses on the work of a single author to allow a unique depth of study and research. Students will analyze the relationship between authorship, biography, and textual production. Topics may include Geoffrey Chaucer, John Milton, Thomas Mallory, Salman Rushdie, Muriel Spark, and Mark Twain. Offered every year. Prerequisite: EN 102 or EN 108. 3 lecture hours. Can be repeated for credit with a different topic.

**EN 390 Topics in American Literature 3 Credits**

A seminar that focuses on a period or a topic of interest in the field of American Literature. May be repeated for credit with a different topic. Prerequisite: EN 102 or EN 108. 3 lecture hours. Offered every semester.

**EN 399 Topics in English Studies 3 Credits**

Topics vary. Designed as an elective for majors and advanced non-majors. Prerequisite: EN 102 or EN 108. Course may be repeated for credit with a different topic. 3 lecture hours.

**EN 420 Thematic Seminar-Literature 3 Credits**

A seminar that explores a topic of interest in the Humanities. Pre-Requisite: EN 102 or 108.

**EN 425 Directed Study In Literature 3 Credits**

A course in which a student of demonstrated ability works with a faculty mentor in a well-defined area in Literature within the competence of the department faculty. Emphasis will be on student initiative, guided reading, and consultations with the mentor. Prerequisite: permission of the instructor and the department curriculum committee. Pre-Requisite: EN 102 or 108.

**EN 450 Senior Seminar 3 Credits**

The required capstone course for the major. EN 450 measures students' ability to distinguish periods of English and American literature; to analyze a work in relation to one of several specified intellectual contexts; and to demonstrate competence in the practice of at least two critical approaches. Students are encouraged to bring to the seminar papers written for courses completed earlier in the major. Two essays (one of which fulfills the university requirement for a senior paper outlining ethical standards based on life experience) and a major oral presentation-to faculty members from both within and outside the English department--are required. Pre-requisite: senior status as an English major or minor or permission of the instructor. \*May be repeated once, on a different topic, for a maximum of 6 credits. This course satisfies the university's General Education Ethics requirement.



## Environmental Science (ES)

### Courses

#### ES 115 Geographic Info. Systems 3 Credits

Open to all majors; an introduction to Geographic Information Systems (GIS). GIS is a powerful computer mapping tool essential in: the natural, health, and social sciences; engineering; architecture; and the military. It is used for a wide-range of spatial analyses and data management. Students learn basic GIS and cartographic concepts, ArcGIS software, and application of GIS to their own discipline. During the final 4 weeks of the semester students design, implement, and present a GIS project. Offered Fall of odd numbered years.

#### ES 130 Introduction to Environmental Law 3 Credits

Major Federal pollution regulation schemes, environmental economics, risk analysis, relevant common law, and constitutional and procedural issues are introduced. Vermont Environmental Law is addressed, as is a survey of the extensive and often novel regulatory approaches of the state of Vermont. The course introduces the law pertaining to environmental issues such as population, economic growth, energy, and pollution. Environmental problems are defined and alternative approaches for dealing with them are examined. Existing statutory efforts such as the National Environmental Policy Act, the Clean Air Act, and the Resource Conservation and Recovery Act are analyzed. Does not fulfill a science requirement. Three lecture hours per week. Offered Spring of even numbered years.

#### ES 251 Sophomores Seminar Environmental Science 1 Credit

This course introduces the fundamentals of scientific investigation and communication. A research project introduces the Scientific Method, while reading and comprehension of scientific literature is coupled with instruction in and application of technical and scientific writing. Other forms of scientific communication, including poster and oral presentations, are addressed. Students learn the appropriate techniques for displaying and interpreting scientific data. Students may not earn credit for both ES 251 and GL 251. Offered Fall semester.

#### ES 270 Fundamentals of Environmental Science 4 Credits

This lab science course investigates the atmosphere, hydrosphere, lithosphere, and pedosphere and their interrelations as well as the affect they have on humans and the role that humans play in large-scale change within these spheres. Subjects include modern climate principles and global climate change, water as a natural resource, natural hazards such as landslides, earthquakes and volcanoes, soil nutrient loss and erosion, sustainable agriculture, and other topics related to natural-human interactions. Prerequisite, one introductory Geology lab science. Offered Fall semester of even numbered years.

#### ES 399 Junior Topics 4 Credits

#### ES 450 Directed Study in Environmental Science 4 Credits

A capstone project carried out under the direction of a faculty member and in coordination with others taking this course. A laboratory and/or field component of the project will generate new data on an expanding base, and an environmental science report will be prepared based in part on the results of that work. Prerequisite: permission of the instructor. Credit cannot be received both for this course and GL 450. Offered fall semesters.

#### ES 451 Environmental Seminar 3 Credits

A capstone course offered in a seminar format with required reading, writing, and group participation. Designed to provide an integrating experience with sufficient flexibility to pursue individual interests. This course also includes oral and poster presentations of senior research projects and examination of codes of ethics in the environmental sciences. Classroom 3 hours. Prerequisite: junior or senior standing and permission of the instructor. Credit cannot be received both for this course and GL 451. Offered spring semesters.

#### ES 499 Env Sci 4 Credits

## Fine Arts (FA)

### Courses

#### FA 201 History/Theory of Architecture I 3 Credits

This course explores the architecture of different cultures from around the world beginning with the earliest evidence of human habitation and ending with the arrival of the renaissance. It examines the development of domestic, civic, and religious sites, as well as towns and settlements. The course explores major cultural, social, technological, and ideological influences on built environments, as well as examines the history, the context, and the form of notable examples. Three hours of lecture per week. Preference given to architecture majors. Note: Students who successfully complete this course may not take FA 221.

#### FA 202 History/Theory of Architecture II 3 Credits

This course explores the architecture of different cultures from around the world focusing on Western architecture from the Renaissance to the 19th century. It examines the development of domestic, civic, and religious sites, as well as towns and settlements. The course explores major cultural, social, and technological influences on built environments, as well as looks at the history, the context, and the form of notable examples. It additionally examines the developing ideologies of prominent practitioners. Three hours of lecture per week. Preference given to Architecture majors.

#### FA 221 History of Visual Arts I: Prehistoric to 1350 3 Credits

These courses provide an opportunity to develop an understanding of well-made artifacts by addressing quality or artistic value in terms of form and content. Students are acquainted with the principal periods of Western art by a study of outstanding examples of architecture, sculpture, painting, and the minor arts, ranging from prehistoric times to the present. First semester: formal vocabulary; prehistoric art to the medieval international style. Second semester: Renaissance to the present. Three hours of lecture per week.

#### FA 222 History of Visual Arts II: 1350 to the Modern Era 3 Credits

These courses provide an opportunity to develop an understanding of well-made artifacts by addressing quality or artistic value in terms of form and content. Students are acquainted with the principal periods of Western art by a study of outstanding examples of architecture, sculpture, painting, and the minor arts, ranging from prehistoric times to the present. First semester: formal vocabulary; prehistoric art to the medieval international style. Second semester: Renaissance to the present. Three hours of lecture per week.

#### FA 240 History of American Art 3 Credits

A survey of American architecture and art from colonial times to the present. Emphasis is placed on the rise and development of the arts in the United States and the changing nature and functions of art in American society. European influences and Native American contributions will be noted. Three hours of lecture per week.

**FA 250 Topics in Art 3 Credits**

Topics vary each semester, focusing on past and current issues in art related to historical style, art and the social context, aesthetic theory, tradition and innovation in media, and the role of art and the artist as an agent of communication in our time. This course may be repeated for credit. Three hours of lecture per week.

**FA 260 Art Appreciation 3 Credits**

This course is introductory in nature and focuses on varied ways to appreciate art: the role of the viewer, the purposes and functions of art, the creative process, materials and technology available to the artist, the relationship of art to culture Western and non-Western), and issues of art style and meaning. Three hours of lecture per week.

**FA 308 History/Theory of Architecture III 3 Credits**

This course presents a survey of architecture from approximately the mid eighteenth century through to the early 1930s, focusing on the rise and early development of the modern movement. It integrates the historic aspects of the key examples of architecture and urban design from this era with the theoretical ideas that generated the built form. Included in the course content is a discussion of the new programs, new social/economic/political organizations and new construction materials and methodologies that drove the search for new forms to represent the new ideas of the modern industrialized era. Prerequisite: FA 202. 3 lecture hours.

**FA 309 History/Theory of Architecture IV 3 Credits**

This course presents a survey of architecture from approximately the 1930s to the present day focusing on the various evolutionary paths of architectural development, including the codification of the international style and the subsequent challenges to the modern dogma into eras of mid and late modernism, expressionism, nationalism, organicism, brutalism, regionalism, postmodernism, deconstructivist architecture, and into the integration of the digital in design and manufacture of built works. Each evolutionary stage is discussed through analysis of the key works integrating the historic aspects with the theoretical ideas that generated the architectural works. Prerequisite: FA 308. 3 hours of lecture.

## Finance (FN)

### Courses

**FN 311 Corporate Finance 3 Credits**

Development of the basic theoretical framework for decision-making in financial management, emphasizing the time-value of money and the analysis of cash flows. Areas of concentration are financial institutions and markets, financial statement analysis, the role of time value in finance, bond and stock valuation, capital budgeting decision process, risk and return analysis, cost of capital and dividend policy. Prerequisites: AC 206 or AC 201, EC 202, QM 213 or permission of the instructor.

**FN 407 Corporate Finance II 3 Credits**

Special topics in financial management including: international managerial finance, mergers and acquisitions, hybrid and derivative securities, working capital management, short-term and long-term financing, financial planning, leverage analysis and capital structure theory. Prerequisites: QM 213, FN 311. Offered in the spring-odd years.

**FN 412 Investments 3 Credits**

Methods of security analysis and portfolio management, including the current theoretical literature and thought. Discussion and analysis of current events and their implications for stock price behavior. Prerequisites: QM 213, FN 311. Offered in the spring-even years.

## French (FR)

### Courses

**FR 111 Beginning French I 6 Credits**

The main purpose of this intensive course is to lead students to communicate in French at a basic level, to appreciate the French-speaking world, and to develop cultural awareness. In a highly interactive environment, students learn to understand, speak, read, and write French. French-language films, videos, and music presented in lab sessions are selected to reinforce the cultural material discussed in class, improve speaking and listening skills, and address differences in nonverbal communication. Not open to students who have successfully completed FR 205 or higher. Classroom 6 hours, laboratory 2 hours.

**FR 112 Beginning French II 6 Credits**

A continuation of FR 111 in which language skills are brought to a level enabling students to participate more fully in general conversation, to read more sophisticated passages, and to write with a firmer command of syntactical structures. Cultural competency is further developed. Classroom 6 hours, laboratory 2 hours. Prerequisite: FR 111, NU language placement, or equivalent. Not open to students who have successfully completed FR 205 or higher.

**FR 150 Topics Course 3 Credits**

Specialized topics relating to French and Francophone culture, literature, business practices, or language. Topic will be indicated in the schedule of classes. This is an introductory-level course. Course may be repeated for credit if the topic differs. May be taught in French or English; see schedule of classes. (When taught in English, this course may not count towards fulfilling the foreign-language requirement.) Classroom: 3 hours; laboratory varies with topic of course.

**FR 205 Intermediate French I 3 Credits**

A course providing aural-oral practice in French, in which students enter into full discussion of topics that include abstract themes and cultural perspectives; includes the expanded use of syntactical structures, the reading of sophisticated material, composition, the viewing of selected French and Francophone films and documentary materials from French-language television. Taught entirely in French. Classroom 3 hours, laboratory 1 hour. Prerequisite: FR 112, NU language placement, a score of 500 on the CEEB French Reading Test, or permission of the instructor.

**FR 206 Intermediate French II 3 Credits**

A course providing aural-oral practice in French, in which students enter into full discussion of topics that include abstract themes and cultural perspectives; includes the expanded use of syntactical structures, the reading of sophisticated material, composition, the viewing of selected French films and documentary materials from French television. Taught entirely in French. Classroom 3 hours, laboratory 1 hour. Prerequisite: FR 205 or the equivalent, NU language placement, score of 500 on the CEEB French Reading Test, or permission of the instructor.

**FR 250 Topics Course 3 Credits**

Specialized topics relating to French and Francophone culture, literature, business practices, or language. Topic will be indicated in the schedule of classes. This is an intermediate-level course. Course may be repeated for credit if the topic differs. May be taught in French or English; see schedule of classes. (When taught in English, this course may not count towards fulfilling the foreign-language requirement.) Classroom: 3 hours; laboratory varies with topic of course.



**FR 311 Advanced French I 3 Credits**

A continuation of grammar review at the advanced level; further development of oral expression through discussion and formal presentations. An introduction to the analysis of Francophone literature and film; an overview of major events, including cultural and scientific developments affecting French thought. Students will prepare written work in a workshop atmosphere in which rewriting and collaboration are encouraged in order to teach self-correction. Readings, lectures, discussions, student presentations, written work entirely in French. Classroom 3 hours, laboratory 1 hour. Prerequisites: FR 206, NU language placement, or permission of the instructor.

**FR 312 Advanced French II 3 Credits**

A continuation of grammar review at the advanced level; further development of oral expression through discussion and formal presentations. An introduction to the analysis of Francophone literature and film; an overview of major events, including cultural and scientific developments affecting French thought. Students will prepare written work in a workshop atmosphere in which rewriting and collaboration are encouraged in order to teach self-correction. Readings, lectures, discussions, student presentations, written work entirely in French. Classroom 3 hours, laboratory 1 hour. Prerequisites: FR 206, NU language placement or permission of the instructor.

**FR 321 A Survey of French Literature I 3 Credits**

An introduction to French Literature. Lectures, reading, discussion in French. Includes an historical survey of French civilization comprising developments in art, music, philosophy and science. Readings in French literature from the Middle Ages to 1789, from the chivalrous medieval epic to the philosophes of the Enlightenment and expression of the egalitarian ideal of the revolution.. Readings, lectures, discussions, student presentations, written work entirely in French. Prerequisites: FR 206, or a 300-level course (may be taken concurrently), NU language placement, or permission of the instructor.

**FR 322 A Survey of French Literature II 3 Credits**

An introduction to French Literature. Lectures, reading, discussion in French. Includes an historical survey of French civilization comprising developments in art, music, philosophy, the technology of warfare and the sciences. Readings in French literature from Romanticism to literature of the Absurd and beyond. Readings, lectures, discussions, student presentations, written work entirely in French. Prerequisites: FR 206, or a 300-level course (may be taken concurrently), NU language placement, or permission of the instructor.

**FR 327 French Literature of the Twentieth Century I 3 Credits**

A study of French literature (novel) from the latter part of the 19th century to the present day. Topics of study include concurrent developments in the other art forms and in the sciences; the impact of the World Wars on Francophone authors and artists. Readings, lectures, discussions, student presentations, written work in French. Prerequisites: FR 206, or a 300-level course (may be taken concurrently), NU language placement, or permission of the instructor.

**FR 328 French Literature of the Twentieth Century II 3 Credits**

A study of French literature (poetry, theater, and film) from the latter part of the 19th century to the present day. Topics of study include concurrent developments in the other art forms and in the sciences; the impact of the World Wars on Francophone authors and artists. Readings, lectures, discussions, student presentations, written work in French. Prerequisites: FR 206, or a 300-level course (may be taken concurrently), NU language placement or permission of the instructor.

**FR 331 Advanced French Composition, Conversation, and Translation I 3 Credits**

A course in French stylistics, translation, oral reports and discussions in French. Prerequisites: FR 206, or a 300-level course (may be taken concurrently), NU language placement or permission of instructor.

**FR 332 Advanced French Composition, Conversation, and Translation II 3 Credits**

A course in French stylistics, translation, oral reports, and discussions in French. Prerequisites: FR 206, or a 300-level course (may be taken concurrently), NU language placement or permission of instructor.

**FR 350 Topics Course 3 Credits**

Specialized topics relating to French and Francophone culture, literature, business practices, or language. Topic will be indicated in the schedule of classes. This is an advanced-intermediate to advanced-level course. Course may be repeated for credit if the topic differs. May be taught in French or English; see schedule of classes for prerequisite. (When taught in English, this course may not count towards fulfilling the foreign-language requirement.) Classroom: 3 hours; laboratory varies with topic of course.

**FR 415 Seminar: Topics in French Literature 3 Credits**

Study of a particular author, theme, genre, or literary movement, including cultural themes. Offered as occasion demands. Topic varies each year these courses are offered. Prerequisites: FR300-level course or permission of instructor.

**FR 421 Reading and Research on a Topic in French Literature and Civilization 3 Credits**

A report on an approved project of original research in French literature or civilization under the direction of a department member. Limited to students who have demonstrated aptitude for independent work. May be scheduled either or both semesters. Prerequisites: FR300-level course, permission of the department chair and course instructor.

## Geography (GE)

### Courses

**GE 104 Introduction to Geography 3 Credits**

A survey of man's occupancy of the earth, his cultures and economies, their distribution and spatial relationships.

**GE 300 Topics in Geography 3 Credits**

Select topics offered on occasion.

## Geology (GL)

### Courses

**GL 110 Introduction to Geology 4 Credits**

An introduction to Earth's internal and external physical processes, its materials and landforms, and the connection between natural phenomena and humans. Topics include: minerals, rocks, water and natural resources; plate tectonics, mountain building, volcanism, earthquakes, slope failure and related hazards; rivers and flood management; erosion, soil degradation, desertification and sustainable agriculture; sea-level rise, coastal and wetland erosion and shore zone management. Discussion of human interaction with the Earth will range from local policy to global economic decisions. Offered fall and spring semesters. Classroom 3 hours, laboratory 2 hours.

**GL 111 Oceanography 4 Credits**

A basic survey of the physical, chemical, and geologic character of the world's oceans. Topics include patterns of energy exchange, chemical cycles, geological environments within the sea, and evolution of ocean basins. Classroom 3 hours, laboratory 2 hours. Offered spring semester only.

**GL 156 Introduction to Earth Evolution 4 Credits**

The course introduces the 4600 million year history of the evolution of Earth and life. Data and scientific theories for earth history are presented for major events including; the birth of the planet; plate tectonics and evolution of continents, mountains and ocean basins; evolution of the atmosphere and oceans; long-term climate change; and the evolution of life and mass extinction events. The lab focuses on the rock record, fossil life, and dating methods as they pertain to Earth history. Classroom 3 hours, laboratory 2 hours. Offered spring semester only.

**GL 251 Sophomore Seminar in Geology 1 Credit**

This course introduces the fundamentals of scientific investigation and communication. A research project introduces the Scientific Method, while reading and comprehension of scientific literature is coupled with instruction in and application of technical and scientific writing. Other forms of scientific communication, including poster and oral presentations, are addressed. Students learn the appropriate techniques for displaying and interpreting scientific data. Students may not earn credit for both ES 251 and GL 251. Offered Fall semester.

**GL 253 Geomorphology 4 Credits**

A course on the origin and evolution of Earth's surface features by geological processes acting upon various earth materials and geological structures. Classroom 2 hours, laboratory and/or field work 4 hours. Prerequisite: GL 110. Offered spring of even-numbered years.

**GL 255 Hydrogeology 3 Credits**

This course provides examination of the basic principles of groundwater, including its occurrence, flow and development, the assessment and remediation of groundwater contamination, and the protection of groundwater as a natural resource. Offered spring semester. Classroom: 3 hours. Prerequisites: MA 107, and EG 109 or GL 110 or GL 156.

**GL 257 Sedimentation 4 Credits**

A course that provides the analysis and interpretation of sedimentary rocks, sedimentary processes and environments of deposition. Classroom 2 hours, laboratory and/or field work 4 hours. Prerequisite: GL 110, GL 111 or GL 156. Offered fall of even-numbered years.

**GL 258 Stratigraphy and Tectonics 4 Credits**

An introduction to the fundamentals of stratigraphy and tectonics. Plate tectonic theory is investigated, from its inception to the present. Stratigraphic concepts are presented, at the general level and in light of tectonics, with focus on Vermont and regional stratigraphy and tectonic history. Classroom 3 hours, laboratory 3 hours. Prerequisite: GL 110. Offered Spring of odd-numbered years.

**GL 260 Projects in Geology 1-4 Credit**

A course that provides a geological field or laboratory project on a topic chosen by mutual consent of the student and the instructor. A written report is required. Prerequisites: GL 110, GL 111 or GL 156 and permission of the instructor.

**GL 261 Field Geology 4 Credits**

A study of the techniques used in the measurement of large and small scale geologic structures. Emphasis is placed on field recognition of features such as bedding, cleavage, folds, faults and their use in geologic mapping. Classroom 2 hours, laboratory 4 hours. Prerequisite: GL 110 or GL156 or permission of the instructor. Offered fall of even-numbered years.

**GL 262 Structural Geology 4 Credits**

A course that provides the analysis and interpretation of patterns in the structural features of the Earth's crust. Topics include the genesis of tectonic features, analysis of strain in rocks, the interpretation of multiply-deformed rocks, and modeling of faults and fractures. Classroom 3 hours, laboratory 3 hours. Prerequisite: GL 261 or permission of the instructor. Offered spring of odd-numbered years.

**GL 263 Mineralogy 4 Credits**

Introductory crystallography and crystal chemistry are used to explain the properties of minerals. Each of the major mineral groups is studied in the laboratory with a focus on developing competency in the identification of the ore minerals and the rock-forming minerals. Development of an understanding of mineral associations is emphasized and field trips allow opportunity to improve these skills. Classroom 2 hours, laboratory 4 hours. Prerequisite: GL 110 or GL 156 or permission of the instructor. Offered fall of odd-numbered years.

**GL 264 Petrology 4 Credits**

Following an introduction to optical identification of the rock-forming minerals using the polarizing microscope, the mineralogy and textures of common rocks are studied by means of thin sections. The genesis of these rocks is explained through a study of the physical and chemical systems they represent. Classroom 2 hours, laboratory 4 hours. Prerequisite: GL 263. Offered spring of even-numbered years.

**GL 265 Glacial Geology and Paleoclimate 4 Credits**

The first half of this course covers glaciology and glacial deposits and landforms, with a strong focus on field investigation. The second half of the course presents the data and hypotheses on Quaternary climate change, including traditional glacial chronology and marine and ice core data and resultant chronology. Global climate change, both past and present, is a central theme of the course. Classroom 3 hours, laboratory 3 hours. Prerequisite: GL 110. Offered Fall of odd-numbered years.

**GL 450 Directed Study in Geology 4 Credits**

A capstone course in which there is preparation of a geological report based on a project of original research involving field, laboratory, or library study or some combination of these. Conference schedules will be determined by the nature of the project and the student's schedule. Prerequisite: permission of the instructor. Offered fall semesters as needed. Student cannot receive credit for this course and ES 450.

**GL 451 Geology Seminar 3 Credits**

A capstone course for fourth-year students designed to review advanced geological concepts in a seminar format. The course also includes oral and poster presentations of senior research projects, and examination of codes of ethics in the geological sciences. Prerequisite: Senior Geology major or permission of the instructor. Offered spring semester as needed. Student cannot receive credit for this course and ES 451.

**GL 499 Geo Res 4 Credits**

## German (GR)

### Courses

#### GR 111 Beginning German I 6 Credits

An intensive course providing an introduction to the German language, in which speaking proficiency, aural comprehension, vocabulary acquisition, reading and writing are brought to a level enabling students to use the language actively in everyday situations. Not open to students who have successfully completed GR 205 or higher. Classroom 6 hours, laboratory 2 hours.

#### GR 112 Beginning German II 6 Credits

A continuation of German 111, in which language skills are brought to a level enabling students to participate more fully in general conversation, to read more sophisticated passages, and to write with a firmer command of syntactical structures. Classroom 6 hours, laboratory 2 hours.

Prerequisite: GR 111 or equivalent. Not open to students who have successfully completed GR 205 or higher.

#### GR 150 Topics Course 3 Credits

Specialized topics offered relating to culture, literature, business practices, language or linguistics. Topic will be indicated in the schedule of classes. May be repeated for credit as topics vary. May be taught in German or English; see schedule of classes. (When taught in English, this course may not count towards fulfilling the foreign language requirement.) Classroom: 3 hours.

#### GR 205 Intermediate German I 3 Credits

A sequence that provides aural-oral practice in German, in which students are enabled to enter into full discussion of topics that include abstract themes; review and expanded use of syntactical structures; intensive and extensive reading; and composition. Classroom: 3 hours, laboratory: 1 hour. Prerequisite: GR 112, NU placement, or a score of 500 on the CEEB German Reading Test.

#### GR 206 Intermediate German II 3 Credits

A sequence that provides aural-oral practice in German, in which students are enabled to enter into full discussion of topics that include abstract themes; review and expanded use of syntactical structures; intensive and extensive reading; and composition. Classroom 3 hours, laboratory 1 hour. Prerequisite: GR 205 or the equivalent, NU placement exam or score of 500 on the CEEB German Reading Test.

#### GR 250 Topics Course 3 Credits

Specialized topics offered relating to culture, literature, business practices, language or linguistics. Topic will be indicated in the schedule of classes. May be repeated for credit as topics vary. May be taught in German or English; see schedule of classes. (When taught in English, this course may not count towards fulfilling the foreign language requirement.) Classroom: 3 hours.

#### GR 321 Survey of German Culture I: From the Beginnings to 1848 3 Credits

Introduction to major currents in German social, political and cultural history from the time of the Roman Empire until the Revolution of 1848. Taught in German. Prerequisite: GR 206 or equivalent.

#### GR 322 Survey of German Lit I: From the Beginnings to 1848 3 Credits

Introduction to major texts and literary figures from the Roman Era until the Revolution of 1848, including, among others, Tacitus, Charlemagne, the courtly poets, Luther, the literary Baroque, Lessing, Goethe, Schiller, Kleist, the brothers Grimm, Büchner and Heine. Taught in German. Prerequisite: GR 206 or equivalent.

#### GR 323 Survey of German Culture II: 1848 to 1945 3 Credits

Introduction to major currents in German social, political, and cultural history from the evolution of 1848 through Bismarck and German unification to World War 1, the Weimar Republic, and the period of Fascism and the Holocaust. Taught in German. Prerequisite: GR 206 or equivalent.

#### GR 324 Survey of German Literature II: 1848 to 1945 3 Credits

Introduction to major texts and literary figures from the first unification of Germany until the end of World War II, including Nietzsche, Hofmannsthal, Rilke, Thomas Mann, Kafka, Brecht, and others. Taught in German. Prerequisite: GR 206 or equivalent.

#### GR 325 Survey of German Culture III: 1945 to the Present 3 Credits

Introduction to major currents in German social, political, and cultural history of the Germanies and Austria, post-war to post-wall: the period of Allied occupation followed by the economic miracle of the 1950s and 60s, radicalism and upheaval in the late 60s and 70s, and finally, the rise and fall of the Berlin Wall, culminating in the uneasy co-existence between East and West that has prevailed since re-unification. Taught in German. Prerequisite: GR 206 or equivalent.

#### GR 326 Survey of German Literature III: 1945 to the Present 3 Credits

Introduction to major texts and literary figures active since the end of World War II, including Borchert, Böll, Celan, Bachmann, Frisch, Dürrenmatt, Grass, Christa Wolf, Peter Schneider, Jurek Becker and others. Taught in German. Prerequisite: GR 206 or equivalent.

#### GR 350 Topics Course 3 Credits

Specialized topics offered relating to culture, literature, business practices, language or linguistics. Topic will be indicated in the schedule of classes. May be repeated for credit, as topics vary. The number ascribed to the course will reflect the level of the material under study as well as the level of proficiency expected of the student. May be taught in German or English; see schedule of classes. (When taught in English, this course may not count towards fulfilling the foreign language requirement.) Classroom: 3 hours.

#### GR 415 Seminar on a Topic in German Literature and Culture 3 Credits

A study of a particular author, theme, genre, or literary movement, including cultural themes. Offered as occasion demands. Topic varies each year these courses are offered.

#### GR 421 Reading and Research in German Literature or Civilization 3 Credits

A report on an approved project of original research in literature or civilization under the direction of a department member. Limited to students who have demonstrated aptitude for independent work. May be scheduled either or both semesters. Prerequisite: permission of the department chair.

## History (HI)

### Courses

#### HI 107 The History of Civilization I 3 Credits

A survey providing a global perspective of the history of human cultures and institutions from earliest times to 1500 CE, focusing on Europe, Asia, and Africa. The course offers an active and participatory environment to the study of history through discussions, simulations, study of primary sources, and research assignments. Open only to first year students or by permission of department. Offered annually.

**HI 108 The History of Civilization II 3 Credits**

A survey of major world civilizations that provides a global perspective of the development of the modern world from 1500 to the present. The course offers an active and participatory environment to the study of history through discussions, simulations, study of primary sources, and research assignments. Open only to first year students or by permission of department. Offered every semester.

**HI 121 American History Survey I 3 Credits**

A survey of American history from the Age of Discovery to 1877. American institutions ranging from political and economic to social and cultural will be examined. Open only to freshmen and sophomores. Offered every semester.

**HI 122 American History Survey II 3 Credits**

A continuing survey of multiple facets of American Civilization as presented in HI121, focusing on the period from the close of political Reconstruction in 1877 to the present. The maturation of democratic institutions and the emergence of the United States as a world power will also be examined. Open only to freshmen and sophomores. Offered every semester.

**HI 201 Ancient Greece and Rome 3 Credits**

A survey of Greek and Roman civilizations from the origins of the polis to the fall of the Western Roman Empire. Prerequisite: Sophomore standing or higher. Usually offered annually.

**HI 202 The Middle Ages: Europe 500 - 1500 3 Credits**

The history of Europe from the fall of the Roman Empire to 1500. The class examines the major political, economic, social, and cultural trends in the development of a distinctive European civilization, built primarily on Christian, Greco-Roman, and Germanic foundations. Prerequisite: Sophomore standing or higher. Usually offered annually.

**HI 209 Historical Methods 3 Credits**

This course introduces students to the methods, techniques and conventions of historical research and writing, including such skills as identifying, understanding, analyzing and interpreting primary and secondary sources, compiling bibliographies, citing sources, and understanding historiography. In addition, this course approaches the issue of ethics through a discussion of the ethical responsibilities of historians, including a discussion of plagiarism. Required for all history majors. Open to sophomore history majors only or by permission of department chair. This course does not fulfill the General Education History requirement. The course must be completed by the end of the junior year. Offered annually in the fall semester.

**HI 211 Early East Asian Civilizations 3 Credits**

This broad, historical survey course is about the civilizations and cultures of East Asia and the people that lived in them until the immediate post-Mongol conquest period. The core of the course will cover the areas that include modern Japan, China and Korea with reference to the inner Asian steppes. This lecture based course will be supplemented by primary source readings and discussion on Chinese and Japanese cultures, art and political philosophy. Prerequisite: Sophomore standing or higher. Usually offered annually.

**HI 212 Modern East Asian Civilizations 3 Credits**

This is a broad historical survey of the transformation of societies and states in East Asia from traditional empires to modern nation states. Rather than an exhaustive survey of facts and dates, this course is designed to introduce students to key questions in modern East Asian history. This lecture based course will be supplemented by primary source readings and discussion on Chinese and Japanese culture and politics. Prerequisite: Sophomore standing or higher. Usually offered annually.

**HI 214 History of the Middle East 3 Credits**

This course is a survey of a historically vital region. It will include an overview of the area known as the "Cradle of Civilizations and Monotheism," as well as the rise of the Islamic Caliphate, the rise and fall of the Ottoman Empire, and the late 19th and 20th Centuries European imperialism and colonialism. The greatest emphasis, however, will be on the modern period. In order to fully comprehend the contemporary situation, it is necessary to include an historical examination of the cultural and religious diversity, as well as the political complexity of the people and states which comprise the so-called Middle East. Prerequisite: Sophomore standing or higher. Offered in the spring semester.

**HI 215 Vermont Regional Material Culture 3 Credits**

A survey of the human-manipulated landscape of Vermont from the time of European settlement in the mid-18th century to the present. The course will trace the impact of economic, social, cultural, and technological forces on the landscape. Students will observe, through extensive field observations, how those forces have shaped the environment of the region. Prerequisite: Sophomore standing or higher and permission of the instructor. 3 lecture hours.

**HI 218 Survey of Sub-Sahara Africa 3 Credits**

This course encompasses the history of sub-Saharan Africa from approximately 1800 to the end of the so-called "Cold War." It is a comprehensive introduction to the numerous and diverse cultural, political, and economic entities comprising this complex area of the world. The central themes of the course, however, will be the related phenomena of the Trans-Atlantic Slave Trade, European colonialism, and western neo-colonialism and their varying impact upon the different regions. Prerequisite: Sophomore standing or higher.

**HI 223 Europe's Age of Revolution. 1500 -1800 3 Credits**

This course traces Europe's path from medieval to modern by examining a series of political, intellectual, and technological revolutions between 1500 and 1800. Topics will include the Reformation, Scientific Revolution, Enlightenment, American and French Revolutions, and the Industrial Revolution, all discussed within the broader context of cultural change, social reform, and technological development. Prerequisite: Sophomore standing or higher. Offered annually.

**HI 224 Modern European History 3 Credits**

This course examines the political, military, and social history of Europe in the nineteenth and twentieth centuries. The nineteenth century witnessed remarkable changes in European society and politics. It was an age of romantics and reactionaries, liberals and imperialists, revolutionaries and racists, nationalists and irrationalists. At the beginning of the twentieth century, Europe dominated the world. However, two world wars, the rise and fall of fascism and communism, the concept of superpowers, and the growth of mass consumer society destroyed the old European hegemony and led to a new and evolving idea of "Europe". Prerequisite: Sophomore standing or higher. Offered alternate years.

**HI 227 Modern British History, 1688 - Present 3 Credits**

The history of the British Isles from the "Glorious Revolution" of 1688 to the region's current struggles with maintaining national identity at the dawn of the twenty-first century. Emphasis will be on the decline of the monarchy, the establishment of parliament as a truly representative body, and the rise and fall of the British Empire. Prerequisite: Sophomore standing or higher. Offered alternate years.



**HI 228 Norwich University History 3 Credits**

The history of Norwich University placed within the context of the history of higher education and the wider framework of U.S. cultural history. Prerequisite: Sophomore standing or higher. Offered on occasion. 3 lecture hours.

**HI 235 Military History I 3 Credits**

This course provides an examination of the major issues evident in the study of military affairs from the dawn of time to the present day. Using a modular approach, this course will explore the following topics: mobile warfare, urban warfare, child soldiers, war in the air, civilians in the path of war, women in war, and the unintended consequences of warfare. Prerequisite: Sophomore standing or higher. Offered every semester.

**HI 236 Military History II 3 Credits**

This course provides an examination of the major issues evident in the study of military affairs from the dawn of time to the present day. Using a modular approach, this course will explore the following topics: the origins of war, total war, soldiers in war, military theory, insurgency & counterinsurgency warfare, military revolutions, and static warfare. Prerequisite: Sophomore standing or higher. Offered every semester.

**HI 260 Topics in History 3 Credits**

Topics will vary.

**HI 303 Colloquium in Ancient History 3 Credits**

A reading and writing intensive course, emphasizing historical research and analytical skills. Possible topics include, but are not limited to, the development of historical writing, the Roman Empire, women in antiquity, pagans and Christians, etc. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic. Offered annually.

**HI 304 Colloquium in Medieval History 3 Credits**

A reading and writing intensive course, emphasizing historical research and analytical skills. Possible topics include, but are not limited to, the Crusades, medieval Christianity and medieval women. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic. Offered annually.

**HI 315 Modern China 3 Credits**

A standard reading and lecture course, Modern China introduces students to the major processes shaping twentieth century Chinese history. The course emphasizes regional knowledge, historical research and analytical skills building. Major topics will include in all cases an overview of Chinese history since 1700 (late imperial and twentieth century "modern" China) with emphasis on political, social history and environmental developments. Other sub-topics in the course include, but are limited to, nation building/nationalism, gender issues, and border/Central Asia relations. Prerequisite: C or better in one 200 level history course or instructor permission. Offered annually.

**HI 317 Modern Japan 3 Credits**

A standard reading and lecture course, Modern Japan introduces students to the major processes of shaping twentieth century Japanese history. The course emphasizes regional knowledge, historical research and analytical skills building. Major topics will include in all cases an overview of Japanese history since 1868 (Tokugawa dissolution through the late twentieth century) with emphasis on political and economic history. Other sub-topics in the course include, but are not limited to, Japan-in-the-world (international relations), gender issues, ethnic relations and the environment. Prerequisite: C or better in one 200 level history course or instructor permission. Offered on occasion.

**HI 319 Colloquium in Chinese History 3 Credits**

This is a thematic, reading and writing intensive course, emphasizing historical research and analytical skills. Possible topics include, but are not limited to, the development of ethnicity and ethnic visions of regional history in China, China's military history, frontier/border history, Ancient China and Greece, etc. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic. Offered alternate years.

**HI 321 Reformation Europe 3 Credits**

The years immediately following the 1517 publication of Martin Luther's Ninety-Five Theses saw a sudden and unprecedented upheaval in European society. This course will examine the social, political, and spiritual context of late medieval Europe, then consider the implications of the Reformation for politics, gender and the modern world. Original sources in translation will form the basis for discussion, supplemented by lecture and secondary materials. Prerequisite: C or better in one 200 level history course or instructor permission. Offered alternate years.

**HI 322 Colloquium in Early Modern European History 3 Credits**

A reading and writing intensive course covering a specialized topic within the history of Early Modern Europe. Topics could include the Thirty Years War, Crime and Deviance, the Enlightenment, the French Revolution, or Persecution and Tolerance. Designed for history majors in their junior or senior years. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic.

**HI 326 Nazi Germany and the Holocaust 3 Credits**

This course examines the political, military, cultural and social history of Germany during the period of Nazi rule, 1933-1945. Special attention is given to the sources of support for Nazism, the structure of the National Socialist state, the role of Adolf Hitler, and the Holocaust. Offered alternate years.

**HI 329 Modern Russian History, 1917 to the Present 3 Credits**

This course examines the political, military, and social history of Russia and the Soviet Union from the birth of the Soviet state through the present day. The foundations of the Soviet state - ideological, industrial, and social - proved too shaky to support the needs and expectations of a modern society. From Nicholas II to Lenin, Stalin to Yeltsin, this course examines the unique and dynamic leadership of Russia, as well as the lives of ordinary people in this fascinating culture. Offered alternate years.

**HI 331 The Colonial Period of American History 3 Credits**

A study of the settlement and development of the British colonies from their origins to 1763. Offered alternate years. Prerequisite: C or better in one 200 level history course or instructor permission. 3 lecture hours.

**HI 332 The American Revolution 3 Credits**

A study of the separation of the 13 British colonies from the mother country and establishment of the United States as an independent nation in the period 1763-1789. Offered alternate years. Prerequisite: C or better in one 200 level history course or instructor permission. 3 lecture hours.

**HI 333 Colloquium in Early American History 3 Credits**

An intensive reading, research and writing course focusing on selected topics relating to early American history. The chronological range of possible topics extends from the Age of Discovery in the sixteenth century through the American Revolution and the ratification of the U.S. Constitution in 1789. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic.

**HI 334 The Citizen-Soldier in American History 3 Credits**

An examination of the evolution of American military policy from the colonial era through the Vietnamese War, giving special attention to the perennial conflict between the advocates of a professional army and the proponents of a civilian soldiery. Offered alternate years. Prerequisite: C or better in one 200 level history course or instructor permission. 3 lecture hours.

**HI 335 20th Century U.S. History 3 Credits**

A reading and writing intensive course, emphasizing historical research and analytical skills. Possible topics include, but are not limited to, the rise of political parties in the United States, the Gilded Age, etc. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic.

**HI 338 U.S. Diplomatic History, 1776-1914 3 Credits**

A study of the foreign relations and foreign policies of the United States from the American Revolution up to the First World War. Topics include territorial expansion, the War of 1812, the Mexican-American War, the expansion of American trade, and the Spanish-American War. Offered alternate years. Prerequisite: C or better in one 200 level history course or instructor permission. 3 lecture hours.

**HI 339 U.S. Diplomatic History, 1914-present 3 Credits**

A study of the foreign relations and foreign policy of the United States from the First World War to the present. Topics include the two World Wars, the Cold War, the Korean War, the Vietnam War, and post-cold war policy. Offered alternate years. Prerequisite: C or better in one 200 level history course or instructor permission. 3 lecture hours.

**HI 340 Colloquium in Twentieth Century United States History 3 Credits**

A reading and writing intensive course, emphasizing historical research and analytical skills. Possible topics include, but are not limited to, World War I, the Great Depression, the 1960's, and the Rise of the Modern Conservative Movement. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic.

**HI 341 U.S. Civil War Era, 1848-1877 3 Credits**

This course examines the causes of the American Civil War, the course of the conflict, and the subsequent period of reconstruction through 1877. Offered alternate years. Prerequisite: C or better in one 200 level history course or instructor permission. 3 lecture hours.

**HI 345 Colloquium in the History of the Middle East & Northeast Africa 3 Credits**

The colloquium will be an intensive reading, research and writing course focusing on selected historical topics relating to this region of the world. Possible topics include, but are not limited to, the rise and expansion of Islam, the Medieval Middle East, the Axum Empire, European Imperialism and Colonialism, the Ottoman Empire, and the Arab-Israeli Conflict. Prerequisite: C or higher in one 200 level history course or instructor permission. May be repeated for credit with different topic.

**HI 355 Colloquium in Modern Military History 3 Credits**

A reading and writing intensive course, emphasizing historical research and analytical skills. Possible topics include, but are not limited to, the First World War, the Second World War, the military history of Russia, etc. Prerequisite: C or better in one 200 level history course or instructor permission. May be repeated for credit with a different topic.

**HI 360 Topics in U.S. History 3 Credits**

Topics vary. Prerequisite: C or better in one 200 level history course or instructor permission.

**HI 361 Topics in Modern European History 3 Credits**

Topics vary. Prerequisite: C or better in one 200 level history course or instructor permission.

**HI 362 Topics in Pre Modern History 3 Credits**

Topics vary. Prerequisite: C or better in one 200 level history course or instructor permission.

**HI 363 Topics in Non-Western History 3 Credits**

Topics vary. Prerequisite: C or better in one 200 level history course or instructor permission.

**HI 371 Nation-Building 3 Credits**

This course provides an exposure to the challenges of creating or re-creating nations after a period of crisis and upheaval. Whether following wars, grants of independence from foreign rule, or human rights atrocities, countries must undertake political, economic, and social reforms to construct stable, popularly accepted, and economically viable polities. How have nations tried to accomplish this complex task in the past hundred years? Historical case studies may be drawn from Africa, the Caribbean, Europe, and Asia. Prerequisite: C or better in one 200 level history course or instructor permission. Offered alternate years.

**HI 372 Military History of the United States I, 1775-1902 3 Credits**

This course will trace the evolution of American military power from the early days of frontier and revolutionary conflict to an era of American imperial ambition at the end of the nineteenth century. Particular attention will be given to strategic challenges of protecting/expanding the American state, the tactical innovations and failures of nineteenth century warfare, and the formulation of the civil-military relationship in American politics and society. Prerequisite: C or better in one 200 level history course or instructor permission.

**HI 373 Military History of the United States II, 1902-Present 3 Credits**

This course will explore the evolution of the American military from its days as a small frontier force at the turn of the twentieth century to its present status as a multi-tasking, global power. Specifically, this course will examine the struggle of American political and military leaders to work together in developing strategies and tactics capable of tackling the complex challenges of modern warfare. Prerequisite: C or better in one 200 level history course or instructor permission.

**HI 400 Independent Study 3 Credits**

An opportunity for qualified upperclass students to engage in an intensive reading or research program in fields of interest not satisfactorily covered by regular course offerings. Periodic conferences will be required. Prerequisites: written consent of the instructor to a specific project presented by the applicant. Offered as occasion demands.

**HI 405 History Internship 3-12 Credit**

Supervised experience at a museum, archives, historical society, or restoration project involving research or field work. Direct participation in such activities as the editing of manuscripts, the interpretation of artifacts, or the preservation of historic structures. Prerequisite: permission of department chair. Normally open only to seniors. Offered as occasion demands.

**HI 430 Capstone Seminar in United States History 3 Credits**

A semester course for advanced students, primarily for senior History or Studies in War & Peace majors. Topics vary from semester to semester. Prerequisite: Completion of one history colloquium with a grade of C or higher and permission of the instructor.



**HI 431 Capstone Seminar in Modern European History 3 Credits**

A semester course for advanced students, primarily for senior History or Studies in War & Peace majors. Topics vary from semester to semester. Prerequisite: Completion of one history colloquium with a grade of C or higher and permission of the instructor.

**HI 432 Capstone Seminar in Pre-Modern History 3 Credits**

A semester course for advanced students, primarily for senior History or Studies in War & Peace majors. Topics vary from semester to semester. Prerequisite: Completion of one history colloquium with a grade of C or higher and permission of the instructor.

**HI 433 Seminar in Non-Western History 3 Credits**

A semester course for advanced students, primarily for senior History or Studies in War & Peace majors. Topics vary from semester to semester. Prerequisite: Completion of one history colloquium with a grade of C or higher and permission of the instructor. 3 lecture hours.

**HI 490 Honors in History I 3 Credits**

First semester of a two semester sequence honors thesis project. The first semester is devoted primarily to research. Not repeatable for credit. Does not fulfill distribution requirement for major.

**HI 491 Honors in History II 3 Credits**

Second semester of a two semester sequence. The second semester is devoted to writing and defending the honors thesis. Not repeatable for credit. Does not fulfill distribution requirement for major. Prerequisite: A grade of "B" or higher in HI 490 and permission of the program director and department chair. 3 lecture hours.

## Honors Program (HN)

### Courses

**HN 101 Introductory Honors Seminar 3 Credits**

A reading and writing intensive course, emphasizing development of creative, analytical, problem-solving and communication skills while challenging students to approach the topics discussed from an interdisciplinary perspective. Offered every semester. Prerequisites: enrollment in Honors Program or permission of the Director of the Honors Program. Repeatable when topic is different. 3 lecture hours.

**HN 301 Honors Thesis Preparation: Research Proposal 3 Credits**

A reading and writing intensive course in which students will prepare for an implementation of the Honors Thesis/Project by working through the process of a research proposal development and writing. Offered every fall semester. Prerequisites: enrollment in the Honors Program and permission of the Director of the Honors Program. 3 lecture hours.

## Interdisciplinary (ID)

### Courses

**ID 110 Ecology and Geology of the Connecticut River Valley 4 Credits**

This course starts with a four-day, on-campus, period. During this time there are lectures and slide presentations on water chemistry, water pollution, flora and fauna of the river and valley, and geology of the Connecticut River valley. Canoe instruction, biological and geological identification procedures, surveying methods, and water analysis techniques are also taught. A nine-day canoe trip follows during which the ecology and geology of the upper river valley are studied. The final day of the course is spent back on campus for additional testing and the preparation of final reports. This four-credit laboratory science course is intended for non-science majors and is offered during the time between graduation and the beginning of summer school.

**ID 120 Partridge Seminar 3 Credits**

An inter-disciplinary course inspired by Norwich University's unique history, educational mission, and Guiding Values whose content depends on the individual instructor and/or discipline and a changing annual theme. The course is open to first-year students only. Students may only take this course once.

**ID 199 Topics Course 6 Credits****ID 220 Interdisciplinary Studies 3 Credits**

The study of a current subject of academic inquiry that falls across disciplinary boundaries. Specific topics of ID 220 are approved for instruction on a case-by case basis by the respective division heads, following review by program, departmental and/or divisional curriculum committees, which also determine whether such courses may count as divisional electives. Each division decides whether its recommending body shall be the program, department, and/or division. The course is taught by faculty from two or more academic disciplines. Descriptive titles reflecting course content are included on student transcripts. ID 220 may not be used to satisfy the requirement of a history course for all baccalaureate degrees. General prerequisite: sophomore standing; additional prerequisites may be announced at pre-registration.

## International Studies (IN)

### Courses

**IN 101 Introduction to International Studies 3 Credits**

Drawing upon the major disciplines within the social sciences, this course provides a multidisciplinary understanding of the forces that shape and affect relationships among human communities. Among the topics considered are: Ethics and human rights, geography and spatial analysis, the role of culture, and the independent and combined effects of politics and economics. In addition, the course introduces students to the methods used to address the questions and problems with which the discipline is concerned.

**IN 350 Topics in International Studies 3 Credits**

Selected Topics in international studies to be used to cover subjects not included in the regular offerings. The course can be offered and taught by faculty in other disciplines upon prior approval of the History & Political Science Department Chair. The course seeks to enhance an appreciation for the multidisciplinary nature of international studies. 3 lecture hours.

**IN 410 Seminar in International Studies 3 Credits**

This capstone course is a reading and writing intensive course designed to introduce students to graduate level work in International Studies. Seminar topics will be determined by the instructor. Prerequisite: Senior standing or permission of the instructor.

**IN 490 Honors in International Studies 3 Credits**

This course is intended for senior students who have demonstrated superior research and writing skills. It requires the commitment of an entire academic year. Topic determined by the student and faculty member. Prerequisite: Senior standing and permission of the instructor.

## Information Systems (IS)

### Courses

#### IS 100 Foundations of CSIA 3 Credits

This survey of computing and information assurance fundamentals is required for computer science and information assurance majors. The course focuses on learning to use key concepts and terminology in information technology, computer science, networking, and information security. Discussions regarding computing ethics, safety, and professionalism are included throughout. No prerequisites. Permission is required for non-computer science and non-information assurance majors to enroll in this course. (3 credits).

#### IS 120 Business Applications & Problem Solving Techniques 3 Credits

An introductory course in management information processing. The course explores the most important aspects of information systems with specific emphasis on business applications, practical usage, and current information. The student will obtain skills in word processing, spreadsheet analysis, presentation tools and website design using professional software packages. Structured problem-solving techniques will be emphasized throughout the course. Practical implementation projects and case studies will be used to reinforce topics such as computer, academic, and professional ethics for an information-based society.

#### IS 121 Introduction to Computer Programming 3 Credits

An introduction to computer programming in a high-level language. This course combines the mechanics of learning a first computer language with the fundamental stylistic elements of general problem solving. Emphasis on the creation of basic gram structures, modular design, and logical flow of control is reinforced by writing programs both in and out of the classroom. Prerequisite: IS 120 or permission of instructor.

#### IS 130 Introduction to Computing 3 Credits

A breadth-first introduction to the discipline of computing. This course provides a broad survey of the sub-disciplines within computer science and information systems culminating in the exploration of programming fundamentals. Topics include: hardware survey, software survey, software engineering strategies, algorithmic design, ethics in computing, societal impact of computing, history and theory of computing, and an introduction to information systems and their application, and introductory programming. Throughout the course, responsible computer, academic, and professional ethics in an information-based society will be stressed.

#### IS 131 Computer Programming 3 Credits

Application of fundamental programming concepts using a high level language. The course will emphasize object-oriented design and implementation techniques. Good software engineering practice will be introduced by means of programming projects that illustrate the importance of software quality attributes. Prerequisite: IS 130.

#### IS 221 G.U.I. Programming 3 Credits

A study of the design and implementation of the graphical user interface. The course will present fundamentals of usability and human factors in GUI design. One or more of the following will be studied and implemented in a student project: Visual Basic programming, Web programming, GUI code generators. Prerequisite: IS 131.

#### IS 228 Introduction to Data Structures 3 Credits

An introduction to the basic concepts of data and the techniques used to operate on the data. Topics will include the file handling, searching, sorting, multi linked structures, trees, and graph presentations. Prerequisite: IS 131.

#### IS 240 Database Management 3 Credits

A study of the concepts and structures necessary to design and implement a database management system. Various data models will be examined and related to specific examples of database management systems. Techniques of system design, system implementation, data integrity, and file security will be examined. Prerequisite: IS 228.

#### IS 260 Data Communications and Network 3 Credits

#### IS 300 Management Information Systems 3 Credits

This course will provide an overview of information systems, their role in organizations, and the relationship of information systems to the objectives and structure of an organization. Management of software projects, decision making with regard to systems development, and organizational roles with regard to information systems will also be discussed. 3 lecture hours.

#### IS 301 Software Engineering I 3 Credits

An in-depth initiation to the system development life cycle, the techniques of information analysis, and the logical specification of the system. Documentation and communication aids are introduced as well as interpersonal approaches and techniques used in analysis. Prerequisite: IS 240.

#### IS 302 Software Engineering II 3 Credits

Utilizing techniques, the student will progress through the phases of specification, design, implementation, and testing of information systems. Object-oriented design techniques are used to design new logical and new physical systems for business related problems. Both technological and managerial aspects of system design and implementation are considered. Students will learn the importance of and design of security systems such as firewalls and passwords. Prerequisite: IS 301.

#### IS 311 Network Forensics 3 Credits

#### IS 330 Ethics in Computing & Technology 3 Credits

The course is designed to expose students to some of the ethical dilemmas posed to our culture as a result of the current technological trends. Students will study various ethical standards and creeds offered through a variety of organizations (e.g., ACM) Students will learn to evaluate case studies from an ethical perspective. Students will be expected to conduct literature surveys, produce bibliographies, write literature reviews, and present oral summaries of research as well as offer critical evaluation of writings related to ethics and technology. This course fulfills General Education Requirement #6: The ability to think critically and make ethical decisions. Prerequisite: one semester of college mathematics.

#### IS 340 Information Systems Security Assurance I 3 Credits

This course provides an overview of design considerations involved with the security of site design. The course will also provide and understanding of the Levels of Trust and system accreditation/certificate processes. Life cycle management of software, hardware, and physical plant, from planning through destruction will be examined and reinforced using case studies. Additionally understanding of the variety of security systems involving computers and networks and an ability to evaluate vulnerabilities will be discussed.

**IS 342 Management of Information Assurance 3 Credits**

This course continues the study of information assurance begun in IS 340. The focus is on management of the information assurance process. Topics include human factors in reducing security breaches, security incident detection and response, remediation, management's role in information assurance, and other considerations in framing and implementing information assurance policies. The final section reviews current topics of particular interest and activity in the field of information assurance.

**IS 353 Business Programming Languages 3 Credits**

A study of programming languages commonly used in business applications. A working knowledge and appreciation of the power of several business languages are obtained through programming assignments based on business-related subjects such as payroll, mailing lists, and sorting. Prerequisite: IS 228.

**IS 370 Introduction to Information Warfare 3 Credits**

This course introduces students to the overall concept of Information Warfare (IW) and Information Operations (IO), particularly with regard to the US Federal government and the Department of Defense. Introduction to IW / IO surveys the development of Information Warfare (IW) and Information Operations (IO) as these elements of power have become more important for the United States Department of Defense (DoD) and Federal Government as a whole. The course assumes only a rudimentary familiarity with the basic concepts and terminology of modern Internet usage and computing and is not a technology-focused course. Prerequisites: None. Open to third and fourth year students or by permission of instructor. 3 lecture hours.

**IS 380 Offensive Information Operations 3 Credits**

This course introduces students to the overall concept of Offensive Information Operations (O-IO), which are conducted across the range of military operations at every level of war to achieve mission objectives. Combatant commanders must carefully consider the potential of IO to deter, forestall, or resolve crises. The course assumes only a rudimentary familiarity with the basic concepts and terminology of modern Internet usage and computing and is not a technology-focused course. Prerequisites: IS 370 Introduction to IW/IO. Open to third and fourth year students or by permission of the instructor. 3 lecture hours.

**IS 399 Test Course 3 Credits****IS 406 Special Topics in Computer Science 3 Credits**

A study of topics chosen from areas of current interest that are not offered as part of the permanent curriculum. This course may be taken for credit more than once.

**IS 407 Politics of Cyberspace 3 Credits**

This course explores the interrelations of modern computing and communications technology with politics, power, news, privacy, crime, and creativity. The course assumes only a rudimentary familiarity with the basic concepts and terminology of modern Internet usage and computing and is not a technology-focused course. Open only to juniors and seniors. 3 lecture hours.

**IS 410 Computing Internship 3 Credits**

Internships within CS/CIS are designed to provide computing majors with the opportunity to apply and expand their knowledge within the computing discipline. The student must be a junior or senior at the time of enrollment and have good academic standing. The student must have the internship approved beforehand by a faculty member in CS/CIS and have the written consent of the CS/CIS Program Coordinator. In addition, a supervisor within the sponsoring organization must agree to provide a written description of the internship beforehand, and provide progress reports during and after the internship experience.

**IS 411 Cyber Investigation 3 Credits**

This course is an introduction to cyber investigation. It includes elements of cyber crime, cyber warfare and cyber terrorism. The course will examine investigative techniques for cyber investigators, case studies of representative cyber crimes and cyber warfare incidents, some cyber investigation tools and expert witnessing. The course builds up to a mock trial where students act as a cyber investigation task force on an actual case of cyber crime. This is a course that incorporates extensive reading as well as hands-on lab exercises. No prerequisites. Open to third and fourth year students or by permission of the instructor. 3 lecture hours.

**IS 440 Software Engineering III 3 Credits**

An advanced course in the field of Software Engineering. Students will refine their use of the methods and procedures of software development from conception of an idea through its implementation and beyond. A variety of software process models will be studied. The course will seek to balance theoretical foundations with practical application. A team project will be assigned to allow for the application of software engineering techniques. The course will investigate methodologies and research with the purpose of improving personal and organizational quality and productivity. Classroom 3 hours. Prerequisites: IS 302 or permission of the Instructor.

**IS 455 Contemporary Issues in Computer Science 3 Credits**

A capstone seminar which will vary every term in accordance with the current issues of the time. Students are to work with the instructor as they explore today's issues and trends in preparation of a thesis or project. Emphasis will be placed on critical thinking, research and evaluation of current issues. A comprehensive computer exam is included in this course. Each student will be required to prepare a paper outlining ethical standards based on the student's life experiences. Prerequisites: IS 302, or permission of the instructor.

**IS 460 Data Communications and Networks 3 Credits**

An introductory study in fundamental concepts of computer networks and data communication including a survey of major protocols, standards, and architectures. Students will implement simple data communication protocols in the laboratory. Prerequisite: IS 228.

## Mathematics (MA)

### Courses

**MA 005 Preparatory Mathematics 3 Credits**

A comprehensive review of the fundamentals of arithmetic and a presentation of the basic algebraic skills and concepts. Topics include basic arithmetic with signed numbers, proportions, percent, geometry, linear equations and graphing of linear equations. Applications are included throughout the course. Students assigned to MA005 must satisfactorily complete it before enrolling in any other mathematics course. If required, MA005 must be completed by the end of the first year of study. This course will not meet any degree requirements and cannot be used as an elective. 3 lecture hours.

**MA 101 Mathematics: A Liberal Art 3 Credits**

An investigation of mathematical concepts and methods with emphasis given to their impact on current and ancient problems. Topics include logic, counting problems, probability, geometry and mathematics of finance. Emphasis is on techniques of problem solving. Prerequisite: Satisfactory completion of MA 005 or equivalent as determined by departmental placement testing. Not open for the first time to a student with a grade of "C" or higher in MA 107, or with credit for any mathematics course requiring MA 107 as a prerequisite. Offered fall semesters.

**MA 102 Mathematics: A Liberal Art 3 Credits**

An investigation of mathematical concepts and methods with emphasis given to their impact on current and ancient problems. Topics include mathematics of voting systems, basic graph theory including Euler circuits and the traveling salesman problem, the mathematics of population growth, statistics, and finding fair shares. Emphasis is on techniques of problem solving. Prerequisite: Satisfactory completion of MA 005 or equivalent as determined by departmental placement testing. Not open for the first time to a student with a grade of "C" or higher in MA 107, or with credit for any mathematics course requiring MA 107 as a prerequisite. Offered spring semesters.

**MA 103 College Algebra I 3 Credits**

A comprehensive study of algebraic topics, this course provides a strong foundation for subsequent mathematics-based courses. Topics include introduction to functions, polynomials, factoring, inequalities, systems of linear equations with two variables, integer exponents, and linear, quadratic, radical, and rational equations. Prerequisite: Grade of "C" or better in MA 005 or equivalent as determined by departmental placement testing. Not open for the first time to students who have received degree credit in any math course except MA 101, MA 102. This course does not fulfill the General Education requirement in mathematics. 3 lecture hours.

**MA 107 Precalculus Mathematics 4 Credits**

A course on topics in precalculus mathematics involving algebra and trigonometry designed to prepare students to progress into introductory calculus. It is a rapid development of elementary topics in algebra to linear, quadratic, logarithmic, and exponential functions, followed by an analytical treatment of trigonometry. Prerequisite: Grade of "C" or better in MA 103 or equivalent as determined by departmental placement testing. Not open for the first time to students with credit in any course requiring MA 107 as a prerequisite.

**MA 108 Applied Calculus 4 Credits**

A course on topics in analytical geometry progressing to differential and integral calculus. Presentation of a wide variety of practical application to technology, business, and science. Not open for the first time to a student with credit in MA 121 or any course requiring MA 108 as a prerequisite. Prerequisite: MA 107 or equivalent as determined by departmental placement testing. Not more than one of MA 108 or MA 121 may count as degree credit.

**MA 121 Calculus I 4 Credits**

An introduction to plane analytic geometry and to differential and integral calculus. Prerequisite: grade of "C" or better in MA 107 or equivalent as determined by departmental placement testing. Not more than one of MA 108 or MA 121 may count as degree credit.

**MA 122 Calculus II 4 Credits**

A continuation of MA 121. Transcendental functions, methods of integration, vectors, polar coordinates, indeterminate forms, L'Hopital's Rule, improper integrals, infinite sequences and series. Prerequisite: MA 121 or "C" or better in MA 108 and permission of the department.

**MA 160 Mathematics for Elementary School Teachers I 3 Credits**

This course will address an advanced perspective of topics in algebra and the real number system as they relate to the teaching and learning of mathematics. Course structure involves an emphasis on problem solving and communication; making, following and assessing mathematical argument; and developing an array of mathematical strategies and understandings which can be extended across K-6 mathematics. This course is open to education majors. Prerequisite: Satisfactory completion of MA 005 or equivalent as determined by departmental placement testing. Offered fall semesters of even years. 3 lecture hours. This course does not meet Gen Ed Math requirements.

**MA 161 Mathematics for Elementary School Teachers II 3 Credits**

This course will address an advanced perspective of topics in geometry, measurement, statistics, data analysis, and probability as they relate to the teaching and learning of mathematics. Course structure involves an emphasis on problem solving and communication; making, following and assessing mathematical argument; and developing an array of mathematical strategies and understandings which can be extended across K-6 mathematics. Prerequisite: Grade of C or better in MA 160. Offered spring semesters of odd years. 3 lecture hours.

**MA 199 Mathematics test course 4 Credits**

This course is designed for Nursing majors only.

**MA 212 Finite Mathematics 3 Credits**

This course includes linear algebra with applications to systems of equations, linear programming, math of finance, sets, combinatorial analysis, and probability theory. Prerequisite: MA 107 or equivalent as determined by department placement testing. Offered spring semesters.

**MA 220 Geometry in Action 3 Credits****MA 223 Calculus III 4 Credits**

A course that continues MA 122. Topics include multiple integration, solid analytic geometry, partial differentiation, two- and three- dimensional vector analysis. Prerequisite: MA 122. Offered fall semesters.

**MA 224 Differential Equations 4 Credits**

Ordinary differential equations are developed as models of physical phenomena. Differential equations are investigated by finding exact solutions and using computer software to determine the solution to linear and non-linear problems. Solution techniques include operator methods, Laplace transforms, and numerical methods. Prerequisite: MA 122. Offered spring semesters.

**MA 232 Elementary Statistics 3 Credits**

A course that covers the study of frequency distributions, averages and standard deviations, normal curve, probability, decision-making, sampling techniques, testing hypotheses, chi-square, students-t and F-distributions, correlation and linear regression. This course is valuable for those who plan to enter teaching. Prerequisite: A college level mathematics course or equivalent as determined by departmental placement testing. Not open to students with credit in MA 311.

**MA 235 Clinical Mathematical Methods 3 Credits**

A course investigating mathematical concepts and methods used in the health care settings. This course will cover the essential math for medication calculations, the continued development of statistical techniques utilized in scientific research, and the mathematics of population dynamics and epidemiological studies. Case studies will be used where appropriate. Emphasis will be on critical thinking and logic of math in a health care environment and in health care research and administration. This is a mathematics course for Nursing Majors. Prerequisites: MA 232. Offered Fall semesters. 3 lecture hours and 1 laboratory hour. 3 credits.

**MA 240 Introduction to Number Theory and Cryptology 3 Credits**

An introduction to fundamental topics in number theory, including the real number system, prime numbers, modular arithmetic, the Euclidean Algorithm, Fermat's Theorem, Euler's Theorem, Euler's Phi Function. Topics will be applied to Caesar and affine ciphers and the Chinese Remainder Theorem. Prerequisite: MA 107 and knowledge of a programming language or permission of the instructor. Offered fall semesters.



**MA 241 Mathematical Computation and Modeling 3 Credits**

A course designed to introduce effective problem solving strategies and modeling techniques to find solutions to complex and often ill-defined problems. Introductory material chosen from common experiences encompassing many academic disciplines. Emphasis is placed on the development of mathematical models and computation on a variety of computing platforms and programming environments. Prerequisite: MA 108, MA 121 or permission of instructor. Offered spring semesters.

**MA 250 Communication in Mathematics 1 Credit**

This course illustrates the organization of the mathematical literature, the efficient search of the literature and a formal introduction to writing mathematics. Prerequisite: Sophomore Mathematics Major or permission of the instructor.

**MA 303 Advanced Calculus I 3 Credits**

A course that provides an extension of concepts of basic calculus to functions of several variables to include limits, continuity, differentiation, and Riemann integration. Treatment of selected topics not included in the basic calculus series as a foundation for more advanced courses in analysis and applied mathematics is also included. Prerequisite: MA 223 and either MA 306 or permission of the instructor. Offered Fall semesters of even numbered years. 3 lecture hours.

**MA 304 Advanced Calculus II 3 Credits**

A course that continues with the content of MA 303, including limits, continuity, differentiation, and Riemann integration. Treatment of selected topics not included in the basic calculus series as a foundation for more advanced courses in analysis and applied mathematics is also included. Prerequisite: MA 303. Offered Spring semesters of odd numbered years.

**MA 306 Discrete Mathematics 3 Credits**

A course in logic, sets, techniques of proof, relations and functions, directed and undirected graphs, algebraic systems, Boolean algebra, and emphasis on applications in various areas of computer science. Prerequisite: MA 108 or MA 121 and knowledge of computer programming. Offered fall semesters.

**MA 308 Modern Geometry 3 Credits**

A course in modern geometries that includes foundations of Euclidean geometry and the development of non-Euclidean geometries. Recommended for prospective teachers. Prerequisite: MA 108 or MA 121. Offered Spring 2010 and every third year. 3 lecture hours.

**MA 309 Algebraic Structures 3 Credits**

A course on groups, rings, fields, morphisms, vector spaces; special topics selected from group theory, algebraic number theory, field theory, Galois theory. Prerequisite: MA 306 or permission of the instructor. Offered Fall semesters of odd numbered years. 3 lecture hours.

**MA 310 Linear Algebra 3 Credits**

A theoretical course on such topics as matrices, determinants, linear equations, vector spaces, bases and dimensions, linear transformations, eigenvalues, and eigenvectors. Prerequisite: MA 223 or permission of the instructor. Offered spring semesters.

**MA 311 Statistical Methodology 3 Credits**

A course designed to provide a firm foundation for the employment of statistical methodology in engineering and the sciences. Examples drawn from the technical fields will be used throughout. The course will cover probability, continuous and discrete statistical distributions, estimation, tests of hypotheses, and sample regression. As time permits, other topics may be examined based on the interests of the students. Prerequisite: MA 223. Offered fall semesters. 3 lecture hours.

**MA 312 Statistical Methodology II 3 Credits**

A continuation of MA 311. Continued development of statistical techniques utilized in scientific and engineering research. Topics to be covered include regression, multiple regression, analysis of variance, experimental design, statistical quality control, time series/forecasting, and reliability analysis. Prerequisite: MA 311. Offered Spring semesters of even numbered years. 3 lecture hours.

**MA 318 Cryptology 3 Credits**

A course that covers fundamental mathematical concepts from modern algebra, number theory, and other areas of mathematics. Provides a foundation for the understanding of classical encryption systems and modern encryption methods. Emphasis on the mathematical underpinnings germane to cryptology. Prepares students for advanced study of modern cryptography. Experience implementing encryption, decryption and cryptanalytic methods on a variety of systems. Prerequisite: MA 240 and knowledge of a programming language or permission of instructor. Offered spring semesters. 3 lecture hours.

**MA 321 Financial Mathematics 3 Credits**

A course designed to extend the student's understanding of the fundamental concepts of financial mathematics, and application of these concepts in calculating present and accumulated values for various streams of cash flows as a basis for future use in reserving, valuation, pricing, asset/liability management, investment income, capital budgeting and valuing contingent cash flows. The student will also be given an introduction to financial instruments, including derivatives, and the concept of no-arbitrage as it relates to financial mathematics. Offered Spring semesters of odd years. Prerequisites: MA 121 or MA 108, and MA 212. 3 lecture hours.

**MA 360 Teaching Mathematics at the Elementary - Middle School Level 3 Credits**

A course in the content, methods, and materials for the teaching of elementary and middle school mathematics. Prerequisites: MA 161. 3 lecture hours.

**MA 370 Introduction to Operations Research 3 Credits**

A course that concentrates on the fundamental concepts and techniques necessary to enable an individual to obtain "optimal" solutions to problems in business, economics, engineering, and the physical and behavioral sciences. Topics include linear programming, network analysis, dynamic programming. Prerequisites: MA 212 or MA 223. Offered Spring semesters of odd numbered years. 3 lecture hours.

**MA 380 Theory of Computation 3 Credits**

This course introduces the theory of computability, including important results from the study of automata and formal languages. Includes introductory material about the theory of directed graphs and trees. A discussion of automata and their relationship to regular, context free and context-sensitive languages. General theories of computability, including Turing machines, and recursive functions. Further topics include decidability, undecidability and computational complexity. Prerequisite: MA 306. Offered Spring semesters of even numbered years. 3 lecture hours.

**MA 390 Numerical Linear Algebra and Analysis 3 Credits**

Numerical techniques for solving problems in linear algebra and analysis. Topics to be studied include integration, interpolation, function approximation, solutions of systems of equations, locating Eigen values. Attention will be paid to the theoretical aspects of the techniques, with particular emphasis on estimation of errors and on convergence properties of iterative techniques. Prerequisites: MA 241, MA 224. Offered Spring 2009 and every third year. 3 lecture hours.

**MA 399 Mathematical Problem Solving 3 Credits**

**MA 405 Complex Analysis 3 Credits**

A course in complex numbers, analytic functions, differentiation, and integration of complex functions, Taylor and Laurent series, evaluation of improper real integrals. Prerequisites: MA 223 and either MA 306 or permission of the instructor. Offered Spring 2011 and every third year. 3 lecture hours.

**MA 407 Vector Analysis 3 Credits**

A course that analyzes scalar and vector fields. Topics included are Newtonian kinematics and Kepler's Law of Planetary Motion, gradient, divergence, curl, theorems of Green, Stokes, Gauss, curvilinear coordinates. Prerequisite: MA 223. Offered Fall 2009 and every third year. 3 lecture hours.

**MA 411 Senior Seminars 3 Credits**

Advanced study designed to develop student competence in working independently and to afford students an opportunity to pursue topics not otherwise offered by the department. Prerequisite: senior standing in mathematics or permission of the instructor. This is the capstone course for the Mathematics Major. 3 lecture hours.

**MA 412 Senior Seminars 3 Credits**

Advanced study designed to enhance student competence in working independently and to afford students an opportunity to pursue topics not otherwise offered by the department. Topics may extend research performed in MA 411 or be a topic independent of MA 411. Prerequisite: MA 411. 3 lecture hours.

**MA 421 Number Theory 3 Credits**

A course in the properties of integers, prime numbers, congruencies, Diophantine equations, quadratic reciprocity. Prerequisite: MA 306 or permission of the instructor. Offered Spring 2011 and every third year. 3 lecture hours.

## Mechanical Engineering (ME)

### Courses

**ME 211 Mechanical Engineer Tools I 2 Credits**

An extension of EG 109 with a more in-depth treatment of 3-D solid model generation including extrusion, revolving, sweeping and lofting. Further development and modification of 3-D solid drawings. Laboratory: 3 hours. Prerequisite: EG 109.

**ME 307 Thermodynamics II 3 Credits**

Applications of thermodynamics to power and refrigeration cycles, combustion mechanisms, mixture and flow processes. Development of thermodynamic relationships and equations of state. Classroom 3 hours. Prerequisite: EG 206.

**ME 311 Mechanical Engineering Tools II 2 Credits**

An extension of ME 211 with additional application of computer based design and analysis methods. An emphasis will be placed on design for manufacturing and other tools appropriate to the mechanical engineering profession. Laboratory: 3 hours. Prerequisite: ME 211.

**ME 356 Manufacturing Processes 4 Credits**

A study of the principles of manufacturing processes. Metal removal, casting, joining and deformation processes are covered as well as introductions to numerically controlled machinery, computer-aided manufacturing, rapid prototyping, robotics, computer integrated manufacturing and modern manufacturing systems. Classroom 3 hours, laboratory 3 hours. Prerequisite: ME 311, EG 203.

**ME 363 Kinematic and Kinetic Synthesis 3 Credits**

A study of the principles of motion and the forces necessary to cause, and be created by motion. Applications to the design of typical machine elements such as gears, linkages and cams. Classroom 3 hours. Prerequisites: EG 202, MA 223.

**ME 368 Design of Machine Elements 3 Credits**

A study of the application of the theories of mechanics and stress analysis to the design of fundamental machine parts. Some of the topics covered are shafts, springs, screws, belts, gears, rivets, bearings and lubrication. Classroom 3 hours. Prerequisites: EG 301.

**ME 370 Mechanical Systems Design 3 Credits**

An introduction to the methodology of design including problem definition, generation and evaluation of alternatives, and design completion. Emphasis is placed on creativity, feasibility, and the effect of economic and societal factors on alternative selection. Goals are achieved through the use of case studies and small projects. Classroom 3 hours. Prerequisite: junior standing.

**ME 381 Mechanical Engineering Laboratory I 2 Credits**

A study of the fundamentals of mechanical and electronic instruments and their use in measurement systems to obtain data on temperature, pressure, displacement, acceleration, and other physical variables. Introduction to experimental methods and procedures, reduction of data to significant form, and the organization of experimental results in written reports. Lecture 1 hour, laboratory 3 hours. Prerequisite: EE 204.

**ME 382 Mechanical Engineering Laboratory II 1 Credit**

Application of instrumentation to observations of gas and liquid behavior, thermo-dynamic and mechanical aspects of machines and devices. Dynamic and transient considerations in instruments, physical systems, and experimental data. Laboratory 3 hours. Prerequisite: ME 381.

**ME 435 Mechanical Control Systems 3 Credits**

Synthesis and analysis of mechanical control systems with feedback. Use of linearization techniques and Laplace Transform methods of analysis. Techniques for determining system stability. Emphasis is placed on operational characteristics of components and their effect on system design. Computer simulation of system operation. Classroom 3 hours. Prerequisites: MA 224, EG 202.

**ME 465 Heat Transfer 3 Credits**

A study of the fundamentals of heat transfer by conduction, radiation, and convection. Steady and unsteady state conduction. Study will include boundary layer theory, internal and external convective flows, two-phase flow, and heat exchange design theory. Classroom 3 hours. Prerequisites: EG 206, EG 303, MA 224.

**ME 467 Mechanical Engineering Design I 3 Credits**

A capstone design project is taken up to the point of prototype construction, testing and hardware specification. The specific skills and knowledge needed by practicing engineers in the product realization process are emphasized and developed. Classroom 3 hours. Prerequisite: senior standing, ME 370.

**ME 468 Mechanical Engineering Design II 3 Credits**

Design completion of the capstone project initiated in ME 467 including hardware specification, instrumentation, laboratory testing, data reduction, and evaluation. Written design report required with oral presentation and defense. Prerequisite: ME 467.



**ME 487 Mechanical Engineering Laboratory III 2 Credits**

A continuation of the Mechanical Engineering laboratory sequence with experiments stressing the performance characteristics of heat power equipment and the application of theory learned in thermodynamics and fluid flow. Classroom 1 hour, laboratory 2 hours. Prerequisite: EG 303. Corequisite: ME 307.

**ME 490 Advanced Topics 3,4 Credits**

A course that provides specific work in an area of the instructor's special competence and indicated student interest. An extension of basic principles to applied areas such as HVAC, heat transfer, thermodynamics, stress analysis, environmental control, turbo-machinery, propulsion systems and aerodynamics. Classroom or seminar, 1-3 hours. Prerequisite: senior standing. Offered as occasion demands.

## Management and Marketing (MG)

### Courses

**MG 098 Junior Career Conference 1 Credit**

This third year seminar focuses on evolving career decisions for Business & Management majors. Guest faculty are drawn from University Board of faculty members and associates with extensive real-world business acumen. Students will experience developing skills to prepare for entering the global workplace in their chosen fields and professions. 1 lecture hour.

**MG 099 Senior Career Conference 1 Credit**

This fourth year seminar focuses on evolving career decisions for Business & Management majors. Guest faculty are drawn from University Board of faculty members and associates with extensive real-world business acumen. Students will hone and finalize skills to prepare for entering the global workplace in their chosen fields and professions. 1 lecture hour.

**MG 101 Introduction to Business 3 Credits**

The purpose of this course is to introduce the student to the world of business. Students will learn about business organization and ownership and will survey union management relations, marketing, accounting, finance, international business, the legal environment, and the stock market. The course is designed to explore the relationship between social responsibility and profits in our free enterprise system. Prerequisite: permission of instructor required for upperclassmen.

**MG 305 Introduction to Sports Management 3 Credits**

This course will provide an overview of the sports industry from the perspective of variety of stakeholders in the industry. It covers the major business disciplines of management, marketing, finance, operations, information technology, accounting, communications, ethics and law. 3 lecture hours.

**MG 309 Management of Organizations 3 Credits**

A study of the functions of modern management: planning, organization, staffing, leading, and controlling. This study is applicable to the management of military, government, educational and non-profit, as well as business organizations. The ethical and social responsibilities of management and contemporary challenges such as the internationalization of organizations are integrated in all aspects of this course. Prerequisites: junior or senior standing or permission of instructor.

**MG 310 Production/Operations Management 3 Credits**

Principles and applied study of the operation of manufacturing and service organizations. Managerial tools and diagnostics, decision-making, and financial management are introduced. Problems of small, medium, and large-sized businesses are studied. Prerequisites: QM 213.

**MG 314 Marketing Management 3 Credits**

This course immerses the student in the strategies and processes of marketing management - market analysis, segmentation, targeting and positioning, and the implementation and evaluation of marketing plans. When the student has completed this course they will understand how a marketing plan is developed and have the skills necessary to identify, analyze and solve marketing problems. Prerequisite: EC 202 or permission of instructor. 3 lecture hours.

**MG 319 International Dimensions of Business 3 Credits**

This course is designed to familiarize the student with the basic concepts and terminology of international business, and to gain an appreciation of the differences in social, political, and economic conditions among nations and how these affect the conduct of business and trade between nations. Topics include comparative cultural, political, and economic environments, international trade theory and policy, foreign exchange and exchange rate determination, the dynamics of international business-government relationships, and corporate policy and strategy of the multinational firm. Prerequisite: EC 201 or EC 202.

**MG 341 Business Law I 3 Credits**

A study of the law and legal system as they affect business. Topics include the court system, constitutional law, torts, criminal law, contracts, property, and the Uniform Commercial Code. In discussing business law, students will learn how morality and social responsibility are integrated into our legal system. Each student will be required to prepare a paper outlining ethical standards based on the student's life experiences. Prerequisite: junior or senior standing.

**MG 346 Business Law II 3 Credits**

A continuation of the analysis of the legal dimension of business operations that was developed in Business Law I. Special emphasis will be given to the legal environment as it relates to the accounting student's professional certification. Topics include bankruptcy, commercial paper, secured transactions, agency, corporations, and partnerships. Prerequisite: MG 341 or permission of instructor.

**MG 351 Organizational Behavior 3 Credits**

This course considers the individual, the nature of organizations, and the issues resulting from the dynamic relationship of people in organizations. The course addresses such topics as learning, personality, motivation, organization structure, leadership, ethics, communication, and change.

**MG 360 Health Economics & Policy 3 Credits**

This course introduces students to principles of health economics and public policy in health and social welfare. Topics include support for public health, policy intervention in health determinants, the relationship between government regulation and market competition, the demand for healthcare, and the supply of services. This course will enable students to apply economic reasoning to the health-care challenges facing society. Prerequisite: One semester of college level mathematics or QM 213.

**MG 408 Human Resources Management 3 Credits**

The management of human resources is one of the most challenging and critical aspects of contemporary organizational functions. This course addresses such issues as the nature of the American labor force, equal employment opportunity, personnel planning and staffing, compensation, employee well-being and job security, and collective bargaining. In addressing these issues attention is given to the ethical, legal, and moral questions involved. Prerequisite: MG 309 or permission of instructor.

**MG 409 Organizational Leadership 3 Credits**

This course prepares students to apply leadership principles to the roles they play as managers. Students will discover more about themselves and learn more about the connection between the individual and the organization. Other topics include organizational culture, structure, group behavior, motivation, power, politics, organizational change, and workplace conflict.

**MG 411 Consumer Behavior 3 Credits**

This course is designed to help the student understand the concepts of consumer behavior that provides the basis for marketing strategies. Students will gain an understanding of how consumers make decisions regarding the purchase and use of products and services and the internal and external factors that influence this process. Prerequisite: MG 314.

**MG 416 Advanced Marketing 3 Credits**

In this course students will examine the key concepts and issues in developing a marketing strategy from the perspective of the corporate and SBU decision-maker. The course will take students through the process for formulating marketing strategies under various market conditions, for developing strategic and tactical marketing action plans, and how to evaluate and control a marketing plan and budget. Students undertaking this course will be required to use knowledge gained from previous marketing subjects in completing course assignments. Prerequisite: MG 314.

**MG 426 Marketing Research 3 Credits**

This course explores the process and tools for data collection and analysis used to solve marketing problems. In addition, the subject addresses when marketing research is appropriate and how to define the research problem, as well as the role of marketing research in marketing decision making. This course will provide students with practical experience in the use of computer based data analysis techniques and make students aware of the biases and limitations inherent in various research methodologies. Prerequisites: QM 213, MG 314.

**MG 429 Seminar in Advanced Management I 3 Credits**

A topics course addressing managerial problems in various environments. Prerequisites: MG 309, MG 310, FN 311, and MG 314.

**MG 441 Integrated Marketing Communications 3 Credits**

This course will provide students with the necessary knowledge and skills to develop appropriate communication strategies consistent with strategic marketing principles. The role of communications in the client organization's marketing plan is emphasized. The concept of Integrated Marketing Communication (IMC) for coordinating the individual communication elements of advertising, direct marketing and public relations to achieve specific marketing objectives is stressed. Prerequisite MG 314. 3 lecture hours.

**MG 441S Integrated Marketing Communications 3 Credits**

This course will provide students with the necessary knowledge and skills to develop appropriate communication strategies consistent with strategic marketing principles. The role of communications in the client organization's marketing plan is emphasized. The concept of Integrated Marketing Communication (IMC) for coordinating the individual communication elements of advertising, direct marketing and public relations to achieve specific marketing objectives is stressed. Students will complete a 40 hours practicum working with the NU Athletic Program and 3 lecture hours, plus 1 cr. (40 hours) Practicum. Prerequisite MG 314. 3 lecture hours.

**MG 448 Small Business Strategies 3 Credits**

A course that integrates the functional areas of management-human resources, finance, marketing, and operations they uniquely affect the small business enterprise. Case studies and lectures develop the student's problem solving abilities. Prerequisites: MG 309, MG 310, FN 311, and MG 314.

**MG 449 Administrative Policy and Strategy 3 Credits**

A capstone course designed to integrate the students' undergraduate studies. Case studies, collaborative assignments, writing assignments and oral presentations provide opportunities to synthesize and apply the knowledge gained from courses in the management program. A comprehensive Division examination is included in this course. Prerequisites: MG 309, MG 310, FN 311, and MG 314.

**MG 450 Internship in Management 3 Credits**

The internship program is designed for students who want to apply their studies by working with a business, industry, or public agency. The student will be required to work closely with a faculty supervisor to develop and implement a structured experience tailored to the career goals of the student. Prerequisites: senior standing and written consent of the department chair and internship committee. Normally only available during the summer.

## Military Science (MS)

### Courses

**MS 111 Military Science I 1 Credit**

Leader Development and Individual Soldier Skills I – An introduction to Army customs, courtesies, and traditions. Introduction to leadership development, values and ethics of the Army; physical wellness and fitness, and stress management. Laboratory work: Basic land navigation skills, field craft skills, and basic rifle marksmanship. (1 lecture hour and 2 other hours) Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree elective.

**MS 112 Military Science I 1 Credit**

Leader Development and Individual Soldier Skills II – Focuses on the leader development by emphasizing the Be, Know and Do characteristics vital for success as an Army officer; the importance of physical fitness and wellness continues to be stressed; introduced to tactics within a team and squad structure, decision-making process and the structure and organization of the Army. Laboratory work: Advanced land navigation skills, basic rifle marksmanship, and troop leading procedures. (1 lecture hour and 2 other hours) Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree elective.

**MS 211 Military Science II 2 Credits**

The Principles of Small Unit Tactics-Leadership Laboratory. Designed to teach individual soldier skills required for survival in modern combat and the leadership roles required for the infantry team and squad leader in developing technically and tactically proficient soldiers. Training in intelligence gathering, radio communication, individual and crew served weapons; introduced to collective tasks; such as, tactical movements and formations needed to conduct squad offensive, defensive, and patrolling missions. (2 lecture hours and 2 leadership lab hours) Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree elective.

**MS 212 Military Science II 2 Credits**

Principles of Leadership and Small Unit Tactics II – Examines the leader's role in directing and coordinating the efforts of subordinates. Decision making skills, problem solving skills and troop leading procedures continue to be honed through leadership roles. Laboratory work: Small unit tactics, advanced land navigation, physical fitness, and troop leading procedures. (2 lecture hours and 2 leadership lab hours) Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree elective.

**MS 311 Military Science III 3 Credits**

Adaptive Team Leadership -- A comprehensive study and application of light infantry squad tactical operations. Will continue to develop oral and written communication skills through preparation and briefing of warning, fragmentary, and operations orders; individual Soldiers' skills to include land navigation and terrain analysis; and leadership and management skills through tactical squad missions and the conduct of physical training. The course is designed to further integrate the Army's problem solving methodology while exhibiting dynamic leadership; and technical and tactical expertise when conducting offensive and defensive operations at the squad level. (3 lecture hours and 2 leadership lab hours) Course Attributes: May be used as part of the six ROTC credits allowed for degree elective.

**MS 312 Military Science III 3 Credits**

Applied Team Leadership -- A comprehensive study and application of light infantry and ranger patrolling operations. Learning leadership techniques by gaining a comprehensive understanding of the mission and organization of combat and reconnaissance patrols and the methods utilized by effective combat leaders. Explores historical examples to illustrate the critical importance of dynamic leadership. Activities used to demonstrate an understanding of the Army's problem solving processes, fully integrating leadership, technical knowledge, and applying doctrinally sound tactics while conducting full-spectrum operations at the platoon level. (3 lecture hours and 2 leadership lab hours) Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**MS 411 Military Science IV 3 Credits**

Transition from Cadet to U.S. Army 2nd Lieutenant -- The first of two senior capstone courses in Military Science. Training includes Army operations, training management, communications and leadership skills; will participate in selected studies of Military History to include a staff ride to a Revolutionary War battlefield; will attain knowledge and proficiency in several critical areas, as follows: Army training management system, coordinating activities with staffs, and counseling skills. These skills will assist in leading Junior Army ROTC cadets throughout the school year. Instruction will include lecture/seminar, case studies, practical exercises and military laboratories to include field-training exercises. One third of the grade will include a measurement of your ability to develop subordinate leaders and personnel. With the addition of MS 412 in the spring, this training assists in the transition to the Branch specific Basic Course as Commissioned Army Officers possessing high moral character, instilled with Army values, physically fit, knowledgeable in basic soldier skills and a meaningful understanding of leadership and management. (3 lecture hours and 2 hours leadership lab hours).

**MS 412 Military Science IV 3 Credits**

Transition from Cadet to U.S. Army 2nd Lieutenant – The second of two senior capstone courses. Study of origins, development, and implementation of U.S. National Security Policy as it applies to the application of land power; focus on understanding and conducting Military Operations, the parameters in which the U.S. will participate, and the role of the military in PKOs. Intense understanding how to prepare and train their particular organization to ensure their objectives support the National policy; case studies of recent Military Operations and how tactical decisions can affect strategic outcomes, and the study of current events. Further development of individual leadership skills and knowledge through class seminars, leadership laboratories, and field training exercises; will assess the level of training in their organizations, develop a training plan to correct deficiencies and re-enforce strengths, and how to evaluate training results. The second half of the semester will further develop an understanding of leadership in organizations, team building, counseling subordinates, and the various support systems available to leaders. Advanced oral and written communications skills--preparing written assignments in the military writing style, along with oral presentations. (3 lecture hours and 2 hours leadership lab hours).

**MS 499 Topics in Military Science 3 Credits**

A 45-hour, distant learning (DL) course covering the gamut of U.S. Military History from pre-colonial through Global War on Terror; gives requisite understanding of military history and the military's role as one component of national power. Developed by: KARTA/MTS Technologies, as a synchronous/asynchronous instructional program; Materials provided by: John W. Hall PhD, the Ambrose-Hesseltine, Assistant Professor of U.S. Military History at the University of Wisconsin-Madison; Development and resourced through: Combat Studies Institute at the United States Army Combined Army Center (Fort Leavenworth, KS); is proctored by a Military History Instructor Course, qualified ROTC Cadre member.

## Music (MU)

### Courses

**MU 101 Music Appreciation 3 Credits**

A survey course of western music from the medieval through the contemporary periods.

**MU 200 Applied Music 1 Credit**

A course that provides studio instruction in keyboard instruments, orchestra and band instruments, and voice under the guidance of a performing artist. Offered at various levels of advancement appropriate to the individual student. Objectives include analysis and mastery of technical problems and the study of literature characteristic of the instrument or voice. This course is repeatable for credit. Prerequisites: permission of instructor and audition, if required. Three accumulated hours will comprise one three-degree-credit course upon petition by the student.

**MU 210 Campus Choraleers 1 Credit**

A select group of 40 mixed voices organized for the study and performance of advanced choral works of all periods. Repeatable for credit to three accumulated hours. Repeatable without credit indefinitely. Three accumulated hours will comprise one three-degree-credit course upon petition by the student. Prerequisite: Audition.

**MU 230 Instrumental Ensemble 1 Credit**

A course that provides study, analysis, and performance of music for small instrumental groups of verse combinations. An objective is to become acquainted with a wide variety of music and styles pertaining to the student's instrument and to other instruments as well. (This requires several sections to accommodate combinations. Sections are scheduled by the instructor with the students). Three accumulated hours will comprise one, three credit free elective course.

**MU 260 Regimental Band 1 Credit**

A course that provides study and performance of marching band literature and technique, as well as rehearsal and presentation of small ensemble pep band music. Membership is open, through audition, to members of the Corps of Cadets. This course is repeatable for credit. Three accumulated hours will comprise one three credit free elective course.

**MU 271 History of Jazz 3 Credits**

History of Jazz is a historically based music course to expose the student to American jazz. Jazz occupies a unique place in American cultural history. Although it has been influenced by the music of many countries, it remains a purely American phenomenon. The course will include the study of historical readings, listening to the many styles and artists of American jazz, and attendance at live performances. Upon completion of the course, the student should have a general knowledge of the various styles, artists, and social history of the period from 1890 to 2006.

**MU 299 Music Topics 1-3 Credit**

## Nursing (NR)

### Courses

**NR 103 Introduction to Professional Nursing 3 Credits**

This course provides a forum in which to explore the present and emerging role of the professional nurse. The student is introduced to the Norwich University BSN Program and the major strands (Nursing Process, Communication, Teaching/Learning, Leadership, Research, Personal and Professional Growth, Life Span Development and Caring) that will be built upon during subsequent courses. Socialization into professional nursing is examined. Students are introduced to nursing informatics with an emphasis on acquisition and ethical use of knowledge through the use of the Internet. Open to Nursing Majors only, or by permission of the instructors. Classroom 3 hours.

**NR 104 Focus on Nursing 3 Credits****NR 105 Promoting Healthy Individuals 3 Credits****NR 204 Nursing Informatics 1 Credit**

This course is designed to provide students with an initial experience in accessing information from a variety of sources. Further, through active learning, this course guides students through utilization of a number of commonly used information technologies. Basic information and computer competencies will be learned and assessed. Classroom 3 hours. Concurrent: NR 104, NR 105.

**NR 206 Health Assessment 3 Credits**

This course focuses on the development of beginning skills in assessment of the healthy adult. A family and community assessment is also developed. Interviewing, obtaining a health history, and the components of a physical assessment are presented. Students learn to integrate interview data with physical findings to formulate nursing diagnoses that will guide the nursing process. Practice will be provided in a laboratory setting and selected clinical settings. Students continue to gain proficiency in interviewing and data collection. Patient's rights and issues of privacy are continued to be reinforced throughout the course. Classroom 3 hours. Prerequisites: NR 103, NR 207. Co-requisites: NR 208, BI 216 or permission of the instructor.

**NR 207 Fundamentals of Nursing I 6 Credits**

This course provides the foundation for Professional Nursing Practice. Emphasis is placed on wellness, physiological, psychological, social, cultural and spiritual factors which contribute to the well-being of the individual and family. The concepts of Nursing Process, Gordon's Functional Health Patterns and clinical decision making are explored. Communication is emphasized as an essential aspect of the professional role and is applied through interviews and data collection. Related theory from behavioral and physical sciences is incorporated. Prerequisites: BI 101, CH 112, & NR 103. Co-requisites: NR 305, MA 232, BI 215. Classroom 3 hours, clinical 8 hours.

**NR 208 Medical/Surgical Nursing I 7 Credits**

This course builds on the theoretical concepts and nursing practice skills learned in NR 207. Students continue to build critical thinking skills to effectively assess client needs and implement the nursing process to plan and provide basic nursing care. This course examines common alterations in health patterns and variety of health care problems and serves as the theoretical foundation for the future study of complex Medical/Surgical nursing problems. The theoretical concepts of stress and adaptation, inflammation, pain, fluid and electrolyte, acid base balance as well as alterations in nutrition and elimination are studied while related nursing interventions are integrated. Classroom 4 hours, clinical 9 hours. Prerequisites: NR 207, MA 232, NR 305. Co-requisites: NR 403, BI 216, NR 211.

**NR 211 Nursing Pharmacology 3 Credits**

A study of the therapeutic use of chemicals and their interactions in the human body to produce biologic effect. Students will identify pharmacotherapeutic interventions for clients of all age groups utilizing a nursing process approach. Clinical decision making in pharmacotherapeutics will be explored through the use of critical thinking exercises. Classroom 3 hours. Prerequisites: CH 112. Co-requisites: NR 207, BI 215 or permission of the instructor.

**NR 215 Client, Psy/Mental Health Prob 3 Credits**

In this course students are introduced to current theory and research about contemporary practices in mental health nursing. Students develop their use of self as a therapeutic tool and focus on a holistic approach to assessment and care of persons with psychological issues and selected psychiatric disorders and conditions. Students will provide care to patients with mental health and social health problems and their families as part of the interdisciplinary health care team. Prerequisites: PY 211, PY 220, NR 204, NR 206. Co-requisite NR 215L. Classroom 3 hours.

**NR 215L Client, Psy/Mental Health Prob 2 Credits****NR 219 Simulations Clinical Practice 2 Credits****NR 225 Evidenced - Based Practice 3 Credits**



**NR 303 Nursing in Today's World 3 Credits**

This course provides a forum in which to explore the present and emerging role of the professional nurse. The RN/BSN student is introduced to the Norwich University BSN Program, and the major strands (Nursing Process, Communication, Teaching/Learning, Leadership, Research, Personal and Professional Growth, Lifespan Development and Caring) that will be built on during subsequent courses. Socialization into professional nursing is examined. Students are introduced to nursing informatics with an emphasis on acquisition and ethical use of knowledge through the use of the Internet. Classroom 3 hours. Open to nursing majors only.

**NR 312 Medical-Surgical Nursing II 9 Credits**

NR 312 emphasizes the role of the nurse in the care of adults with acute and chronic Medical/Surgical problems in the acute care setting. Students refine their assessment, critical thinking and clinical decision making skills. Students apply previously learned knowledge in the use of the nursing process, and teaching/learning principles to provide care to two clients, planning care to promote or restore health. Students carry out learned complex nursing skills in providing planned care. Classroom 5 hours, clinical 12 hours for 14 weeks. Prerequisites: NR 208, NR 211, NR 305, NR 403, BI 215, B I216. Co-requisites: BI 360.

**NR 313 Mental Health Nursing 4 Credits**

NR 313 provides an overview of current mental health issues. Current theories and nursing care of clients with mood/affect, neurotic and/or psychotic disorders will be explored. Selected clinical experiences will enhance the theory. Confidentiality is emphasized to ensure a patient's complete privacy. Classroom 2 hours, clinical 65 hours. Clinical hours are done in a five-week rotation. Prerequisites: NR 211, NR 312, PY 211, PY 220, and SO 201. Co-requisites BI 220 and NR 315.

**NR 314 Tech Innovations Clinical Nsr 1 Credit****NR 315 Maternal-Child Health Nursing 7 Credits**

NR315 builds on fundamentals of nursing and medical-surgical nursing to explore the fields of maternity and pediatric nursing. NR315 theory will emphasize nursing process, teaching/learning, and health promotion in these special populations. Students will care for clients in a variety of settings across the wellness-illness continuum. This course has two separately graded components (one for each content area), both of which must be passed. It also has two clinical components. Students will continually apply proper ethical/legal considerations into clinical practice. Classroom 4 hours, clinical 130 (65 pediatric and 65 obstetrics) hours. Prerequisites: NR312, PY220, NR211, NR305. Co-requisite NR313 and BI220.

**NR 316 Care of the Adult 1 3 Credits**

In this course students integrate the physiological, psychological, spiritual, developmental and socio-cultural dimensions of adults as they study nursing care during wellness and illness. Focus is on the musculoskeletal, endocrine, immune, integumentary, gastrointestinal and genitourinary systems. Students learn the professional nursing role in planning care of the adult client. 3 Lecture hours per week. Prerequisites: NR 219 Co-Requisite NR 316L.

**NR 316L Care of the Adult 1 3 Credits****NR 321 Nursing Leadership 3 Credits**

In this course students focus on theoretical foundations and conceptual principles of nursing leadership and the skills necessary to practice leadership competently in healthcare environments. The course is designed to enhance leadership self-awareness and to encourage students to fashion personal perspectives on how to lead professionally. Analyzing trends and issues in the current healthcare system has implications for exercising leadership and will help students determine the way they can make a difference. 3 lecture hour Prerequisites: NR 314, NR 316, or permission of the instructor.

**NR 331 Care of Women and Childbearing Family 3 Credits**

In this course students are introduced to current evidence based knowledge, theory and skills of the practice of maternal/newborn and women's health nursing building on knowledge from preceding courses in the social and physical sciences, and nursing courses, to help the student further develop the professional role behavior. Covered topics may include health promotion, disease prevention, genetics, social justice, issues of access and gender in healthcare. The continuity of care delivery from practitioner's office to hospital to home is stressed enabling the emerging clinician to see the interdisciplinary team at work in the care of women and childbearing families. Prerequisites: NR 314 and NR 316 Co-requisites: NR 331L.

**NR 331L Care of Women-Childbearing Family Prac 1 Credit**

In the clinical practicum of Nursing Care of Women and Childbearing Families students apply current knowledge, research and skills in contemporary practice of maternal/newborn and women's health nursing to the care of selected clients. Client selection will be based on availability and will include newborns, postpartal mothers, antepartal mothers and families, and intrapartal mothers and families. The emphasis will be on safe, evidence based care for this vulnerable patient population. Clinical hours 45. Prerequisites: NR 314 and NR 331 Co-requisite: NR 331.

**NR 341 Care of Children&Child Rearing 3 Credits**

In this course students focus on the nursing care of children, adolescents and families dealing with health and developmental challenges of childhood and explore health promotion needs of childrearing families. This course employs a developmental perspective through which major causes of morbidity and mortality are examined while it challenges students to develop critical and creative reasoning skills and utilize empathetically appropriate communication skills as the basis for care. 3 lecture hours per week. Prerequisites NR 316, NR 316L Co-Requisite NR 341L.

**NR 341L Care of Children&Child Rearing 2 Credits**

In this course students apply knowledge of the causes of childhood and adolescent illness in context with the relevant developmental challenges specific to the patient. Health promotion needs of the child and family in illness are stressed. Critical thinking and empathetically appropriate communication serve as the context for care. Clinical hours - 80. Prerequisites: NR 316, NR 316L Co-Requisite NR 341.

**NR 351 Family Centered Nursing 1 Credit**

In this course students acquire an understanding of family centered care from a variety of cross disciplinary theoretical perspectives. Students will apply critical thinking in the analysis of family care across clinical settings and contexts. Traditional and contemporary family definitions will be examined along with the changes in structure, role, and function as families begin, age and face end of life issues. An introduction to the medical home will be incorporated, indentifying the roles of the health care team, the family and the client. 1 lecture hour Prerequisites: NR 316, NR 400.

**NR 399 Pathopharmacology for Nursing 1-4 Credit**

**NR 400 Independent Study 3 Credits**

A course in which there is an opportunity to select and read in a specific area of interest that is not available through regular course offerings. Prerequisites: three baccalaureate nursing courses and permission of the instructor. Students will continually apply proper legal/ethical considerations into clinical practice.

**NR 403 Nursing Research 3 Credits**

This course introduces students to the principles and methods of research and emphasizes the application of research in nursing as a product and process. It prepares students to critically read research articles and relate the value of that research to nursing practice and client outcomes; to develop a research problem and literature review; to participate with a research team; and to utilize nursing research in their practice. Confidentiality is emphasized to promote and ensure complete patient privacy. Classroom 3 hours. Prerequisites: NR 103, MA 232. Co-requisites: NR 208 or permission of the instructor.

**NR 404 Nursing Leadership 3 Credits**

This course examines the leadership process in nursing. The student studies the effects of leadership theory in the management of people and tasks within the health care environment, such as teaching assistive personnel the requirements of ensuring security of patient's medical information and professional ethics. Emphasis is placed on a humanistic model for teaching and learning that stresses interpersonal communication as an essential component of nursing and leadership. Classroom 3 hours. Prerequisites: NR 103 or NR 303, NR 315 or permission of the instructor.

**NR 405 The Nurse's Role in Health Promotion and Health Protection 8 Credits**

The role of the baccalaureate nurse in the health promotion and protection of individuals, families, and populations is emphasized. The student is introduced to the components of community health nursing. The focus of the clinical components is the nursing care of families and populations. Students will continually apply proper ethical/legal considerations and the insurance of patient privacy. Classroom 4 hours, clinical 12 hours for 14 weeks. Prerequisites: NR 312, NR 315.

**NR 416 Care of the Adult II 4 Credits**

In this course students are required to integrate the physiological, psychological, spiritual, developmental and socio-cultural dimensions of adults as they study nursing care during wellness and illness. Focus is on the neurological system, cardiovascular system, respiratory system, hematology and oncology. Students learn the professional nursing role in planning care of the adult client. 4 lecture hours per week. Prerequisites: NR 331, NR 331L, NR 341 and NR 341L Co-Requisite NR 416L.

**NR 416L Care of Adult II 4 Credits**

In this course students apply knowledge of the physiological, psychological, spiritual, developmental and socio-cultural dimensions of adults as they study nursing care during wellness and illness. Students learn the professional nursing role in planning care of the adult client through clinical experiences at external agencies. Acquisition of communication and psychomotor skills is critical to providing nursing care. 12 clinical hours a week/ Simulation 1 hour 40 minutes every other week. Prerequisites: NR 331, NR 331L, NR 341 and NR 341L Co-Requisite: NR 416.

**NR 420 Care at End of Life 2 Credits**

In this course students will study current theory and research about contemporary practices caring for clients and their families at the end of life. It teaches students effective interaction skills with clients, families and health care providers. Throughout the course, students develop their use of self as a therapeutic tool and focus on a holistic approach to assessment and care of persons with a variety of life-limiting illnesses/diseases. Interventions will be discussed regarding the physical care as well as psychological, social, cultural and spiritual care of clients and their families as they face life's final journey. Classroom: 2 hours. Prerequisites: NR 331 NR 331L, NR 341, and NR 341.

**NR 421 Coordinator of Care 3 Credits**

NR 421 - Coordinator of Care 3 credits In this course students integrate the physiological, psychological, spiritual, developmental and socio-cultural dimensions of adults as they study nursing in the context of uncertain and complex clinical environments. Students will use previous medical surgical nursing knowledge and builds skill sets as they prepare to enter the nursing professions as a new graduate nurse. Students will work one on one with an agency preceptor in a specialty of interest. 3 lecture hours per week Prerequisites: NR 416 and NR416L Co-Requisite NR 421L.

**NR 421L Coordinator of Care Practicum 4 Credits**

NR 421L - Coordinator of Care Practicum 4 credits In this final undergraduate clinical practicum, students demonstrate achievement of knowledge and skills in nursing practice as they enter into professional practice. Clinical experiences include seven weeks of practice under the guidance of an agency preceptor. Students integrate knowledge and skills from the humanities and basic, behavioral, social leadership and nursing sciences in developing the professional role in selected adult and pediatric health environments. Learning experiences allow students to gain confidence; practice critical thinking, leadership and ethical decision making in clinical situations. 168 hours clinical, 30 Simulation hours Prerequisites: NR 416 Co-Requisite NR 421.

**NR 431 Promoting Health in Communities 3 Credits**

NR 431 - Promoting Health in Communities 3 credits In this course students learn current theory and research about contemporary practices in community/public health nursing. In population-focused nursing, the group, aggregate, community, or population is the unit of care. Epidemiologic studies have shown that lifestyle, environmental and genetic factors are major determinants of population health. Students will work collaboratively with community agencies to address population-focused health issues. Classroom 3 hours Prerequisites: NR 416 and NR416L Co-requisite: NR 431L. 319.

**NR 431L Promoting Health in Communities: Clinical Practicum 2 Credits**

NR 431L - Promoting Health in Communities: Clinical Practicum 2 credits In this course, students will apply concepts of community/public health in providing population-focused care to groups, aggregates, and communities. Clinical experiences are coordinated in a variety of settings and require students to engage with individual agencies and in collaboration with community partners in addressing community/public health issues. Students are encouraged to clarify their own beliefs and values in order to provide nonjudgmental nursing care. Clinical hours: 80. Prerequisites: NR 416, NR 416L Co-requisite: NR 431.



**NR 441 Nursing Capstone 4 Credits**

NR 441 - Nursing Capstone 4 credits In this course the student begins to transition to the role of graduate nurse and explores issues relevant to contemporary nursing practice including the ethics and regulation of practice. Local, state, national and international policies and initiatives and their influence on health of populations are examined. Students create and implement an approved capstone leadership project which is undertaken with guidance of faculty and clinical partners and reflects integration of all elements of the BSN curriculum. Classroom 2 hours; seminar leadership project 2 hours. Prerequisites: NR 416 and NR 416L.

## Naval Science (NS)

### Courses

**NS 121 Introduction to Naval Science 2 Credits**

Required for all freshman midshipmen. Provides a comprehensive overview of the Navy and Marine Corps organization, military courtesies and traditions. 2 lecture hours and (2 lab hours contracted students only). Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**NS 122 Sea Power and Maritime Affairs 3 Credits**

Required for all freshman midshipmen. Provides a comprehensive overview of the Navy's heritage, mission and role in the development of the United States. 3 lecture hours and (2 lab hours contracted students only). Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**NS 221 Leadership and Management 3 Credits**

Required for all sophomore midshipmen. Provides an introduction to the principles of both leadership and management for future leaders. 3 lecture hours and (2 lab hours contracted students only). Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**NS 222 Navigation 3 Credits**

Required for all sophomore Navy midshipmen. Provides an introduction to the principles of navigation and basic seamanship. 3 lecture hours and (2 lab hours contracted students only). Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**NS 242 Marine Corps Weapons Systems 2 Credits**

Required for all sophomore Marine midshipmen. Provides a comprehensive overview of weapons in the Marine Corps inventory. 2 lecture hours and (2 lab hours contracted students only). Course Attributes: Not eligible for use as part of the six ROTC credits allowed for degree electives.

**NS 321 Naval Ship Systems I 3 Credits**

Required for all junior Navy midshipmen (except Nurses). Provides an introduction to basic naval engineering concepts and naval propulsion systems. 3 lecture hours and (2 lab hours contracted students only). Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**NS 322 Naval Ship Systems II 3 Credits**

Required for all junior Navy midshipmen (except Nurses). Provides an introduction to basic naval weapons engineering concepts and weapons systems. 3 lecture hours and (2 lab hours contracted students only). Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**NS 331 Evolution of Warfare 2 Credits**

Required for all junior Marine midshipmen and MECEPs. Provides the student with a basic understanding of the art, science, and concepts of warfare through the ages. 2 lecture hours and (2 lab hours contracted students only). Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**NS 342 Small Unit Leadership Skills 2 Credits**

Required of all junior Marine midshipmen and freshman MECEPs. Provides candidates with all basic skills, knowledge and physical preparation for attending OCS during summer cruise. 2 lecture hours and (2 lab hours contracted students only). Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**NS 421 Naval Operations and Seamanship 3 Credits**

Required for all senior Navy midshipmen (except Nurses). Provides an introduction to advanced navigation and seamanship, shipboard operations and naval warfare doctrine. 3 lecture hours and (2 lab hours contracted students only). Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

**NS 422 Leadership and Ethics 3 Credits**

Required for all commissioning seniors. Provides all prospective commissionees with advanced leadership, ethics, service etiquette, and junior training. 3 lecture hours and (2 lab hours contracted students only). Course Attributes: May be used as part of six ROTC credits allowed for degree electives.

**NS 431 Amphibious Warfare 2 Credits**

Required for all senior Marine midshipmen and MECEPs. Provides an overview of the history of amphibious warfare, with a focus on Marine Corps operations. 2 lecture hours and (2 lab hours contracted students only). Course Attributes: May be used as part of the six ROTC credits allowed for degree electives.

## Physical Education (PE)

### Courses

**PE 107 Foundations of Physical Education 3 Credits**

A course designed to provide students with an introduction to the professional aspects of the physical education profession. Includes historical and philosophical implications with emphasis on modern trends in program design. Acquaints students with professional organizations and reviews career possibilities in the field.

**PE 161 Physical Fitness & Wellness Assessment 3 Credits**

Introduces the student to the theory and practice of teaching physical fitness activities. A personalized assessment is conducted of health-related fitness and wellness components. Based on the evaluation results and individual interests, an exercise program is designed by each participant, which she/he is expected to revise and update during her/his professional preparation at Norwich University. Individualized exercise program prescriptions may include aerobics, cycling, jogging, lap swimming, walking, yoga, or weight training. Professional ethics, client privacy, and liability issues are stressed throughout the program.

**PE 199 Phys Ed Topics; 4 Credits**

**PE 223 Motor Skills Development I 3 Credits**

This course teaches students to apply principles of best practice to the development and delivery of appropriate instructional programs in individual and elementary activities currently being taught in the public schools (e.g. dance, throwing, catching, kicking, and gymnastics). Strong consideration is given to the development of personal performance and skill acquisition in order to more effectively lead practical lessons in school. Students must demonstrate an understanding of, and competence in motor skill acquisition. Offered fall semester. 4 hour lab.

**PE 224 Motor Skills Development II 3 Credits**

This course teaches students to apply principles of best practice to the development and delivery of appropriate instructional programs in team, dual, and secondary activities currently being taught in the public schools (e.g. basketball, volleyball, soccer, racquet sports) as well as non-traditional activities (e.g. Indiaka, Takraw, pateka, tchoukball). Consideration is given to the development of personal performance and skill acquisition in order to effectively lead practical lessons in school. Students must demonstrate an understanding of, and competence in motor skill acquisition and physical education pedagogy in the context of public school instruction programs. Offered spring semester. 4 hour lab.

**PE 243 Instructional Design in Physical Education 3 Credits**

This course is targeted for students who plan to teach school physical education. Planning and Instructional Design is the introductory course in a sequence of professional teaching skills courses. The emphasis of the course is to identify and develop the beginning teaching skills and planning that are necessary for effective instruction in physical education and other sport settings. Classroom 3 hours. Prerequisites: PE 107 and PE 223 or PE 224. Offered Spring semester.

**PE 260 Personal and Community Health 3 Credits**

A course that emphasizes principles, problems, and procedures concerned with the improvement of individual and community health. Consideration is given to the nature of communicable diseases and the preventative measures used in schools and community. Health information protection and client privacy are stressed as an integral part of the community health care provider's professional ethics.

**PE 261 Foundations in Health Education 4 Credits**

This course will teach historical development, professional standards, philosophy and program planning, including current best practices in the development, implementation and evaluation of health education programs. It will focus on developing personal and social health skills, including decision making, interpersonal communication, goal setting and self management skills. In addition, this course will integrate teaching students media literacy, personal advocacy, and how to access valid health information, products and services and how to teach this to prospective students. Lecture 3 hours: Field Experience 2 hours. Prerequisite: PE260. Offered even-numbered fall semesters.

**PE 265 Lifelong Motor Development 3 Credits**

This course studies the sequential, continuous age-related process whereby movement behavior changes. The class will cover information processing theories, theories of motor learning, effects of practice regimens and feedback and biological changes experienced over a lifetime, which affect motor skill acquisition. Understanding lifespan motor development is important for educators at all levels, special education teachers, physical educators, coaches, and adult fitness leaders.

**PE 305 Motor Development Activities II 4 Credits**

This course teaches students to apply principles of best practice to the development and delivery of appropriate instructional programs in team sport and group activities currently being taught in the public schools (e.g. cooperative/challenge activities, basketball, volleyball, softball, soccer, lacrosse and floor hockey). Consideration is given to the development of personal performance and skill acquisition in order to more effectively lead practical lessons in school. Students must demonstrate an understanding of, and competence in motor skill acquisition and physical education pedagogy in the context of public school instruction programs.

**PE 306 Outdoor Physical Education I 3 Credits**

This course provides students with a comprehensive background in warm weather Outdoor Physical Education. Skills in trip planning, risk management, equipment selection concerning use and care, and group leadership techniques will be covered. This class will prepare students to recognize the assumption of risk, attractive nuisances, negligence, and the standard of care when facilitating an Outdoor Physical Education program. Students will study and practice principles and protocols for administering safe, high-quality outdoor education experiences in activities such as, canoeing, mountain biking, hiking & backpacking, and adventure. Also covered will be topics in animal and wilderness conservation, nutrition, compass use and navigation, and environmental ethics. 3 classroom/field experience hours. Prerequisites: PE 107, PE 161, or permission of instructor. Offered fall semester.

**PE 307 Outdoor Physical Education II 3 Credits**

This course provides students with a comprehensive background in cold weather Outdoor Physical Education. Students will be actively engaged in winter activities. This class will prepare students to conduct classes in outdoor education during the winter in activities such as, snowshoeing, cross-country skiing, and ice skating. Also presented will be, but not limited to, topics in animal and wilderness conservation, nutrition, mountain and cold weather illness and injuries, and snow science, such as avalanche assessment and ice assessment. An emphasis will be placed on preparing individuals to be active in cold weather under winter conditions. 3 classroom/field experience hours. Prerequisites: PE 107, PE 161, or permission by instructor. Offered spring semester.

**PE 333 Management Sports Facilities 3 Credits****PE 341 Instructional Strategies for Physical Education in Elementary School 4 Credits**

A course that provides classroom and laboratory experience designed to acquaint the student with basic materials, methods, and principles necessary to meet the educational needs of the elementary school child. Emphasis on curriculum development with consideration given to concepts of movement education and perceptual motor development. Application of movement theory to specific sports skills and activities. Health information protection and student privacy issues are included throughout the course of instruction. Classroom 2 hours, laboratory 3 hours on site at Barre Town Middle, Elementary School.

**PE 342 Instructional Strategies for Physical Education in Middle-Secondary School 4 Credits**

A course that places emphasis on ethics, principles, procedures, and techniques related to teaching health and physical education in the elementary and secondary schools. Methods of organization, types of programs, and content and materials of health and physical education courses. Laboratory experience provided in traditional and new media, self and peer evaluation, and micro teaching. Health information protection and student privacy issues are reinforced throughout this course. Classroom 2 hours, laboratory 3 hours on site at U-32 Jr. - Sr. High School.

**PE 355 Coaching:Leadership in Sports 3 Credits**

A course with a strong focus on the philosophy, ethics, principles, and techniques of coaching individual and team sports. Identifying and addressing the ethical dilemmas pervading our sport organizations today will be emphasized. This course provides an emphasis on the organization of interscholastic athletics in relation to the achievement of education objectives, and satisfies the university's General Education Ethics requirement. In addition, students will be prepared for the National Federation of State High School coaching certification. 3 lecture hours.

**PE 365 Kinesiology 4 Credits**

A review of the structure and function of the skeletal and muscular systems with special emphasis on an analysis of human motion as related to human performance. Classroom 3 hours, laboratory 2 hours. Prerequisite: BI 215, BI 216 or permission of the instructor.

**PE 371 Physiology of Exercise 4 Credits**

A review of physiological principles of muscular activity with emphasis on the integration of body systems in the performance of exercise and various athletic activities. Classroom 3 hours, laboratory 2 hours. Prerequisite: BI 215, BI 216 or permission of the instructor.

**PE 373 Activities and Programs for the Disabled and Aging 3 Credits**

A study of activities and programs focused on meeting the needs of special population groups and the aging. Consideration given to teaching methodology and program planning for individuals and groups. Health information protection and client privacy is stressed as it relates to professional ethics and liability.

**PE 399 Topics: 3 Credits****PE 406 Readings in Physical Education 3 Credits**

This course examines the current literature on issues facing future professional educators of an ethical, legal or pedagogical nature. Students are expected to think, read, write and speak critically about these professional issues in the physical education discipline. The submission of a professional portfolio is required. Seminar 3 hours.

**PE 426 Internship 6,12 Credits**

A course designed to provide the Physical Education students with an intern-type experience in a professional setting appropriate to their career goals. Prerequisite: satisfactory completion of all courses in the major through the sixth semester. Cross listed as PE/SM. A student may not receive credit for both.

**PE 432 Organization and Administration in Physical Education 3 Credits**

A course that emphasizes the study of administrative principles, functional organization, and supervision in relation to the total physical education program in grades K-12 and to managing sports facilities and sports programs. Major topics include personnel, curriculum, legal liability, intramurals, evaluation, budgeting and risk management.

**PE 441 Advanced Exercise Physiology and Prescription 4 Credits**

This course prepares and qualifies students to work as personal trainers and fitness specialists in corporate fitness and health club facilities. The course bridges the gap between exercise physiology and the practical application skills of personal training. Advanced exercise physiology knowledge is presented to assure new knowledge and exercise techniques are acquired. Students will learn how to design and implement exercise prescriptions for multiple populations and as well as successful goal attainment. Students will be prepared to sit for certification examinations. Three lecture hours per week and two hour laboratory component. Prerequisites: PE 365, PE 371, or permission of instructor. Offered Fall semesters.

**PE 450 Exercise Testing and Electrocardiography 4 Credits**

This course focuses on the theory and methods of administering exercise stress tests using different modes of exercise and consideration of different populations. Further analysis of information gained from exercise testing, studying deviations from normal, and applications of exercise test information in adult fitness and cardiac rehabilitation programs will be highlighted. Emphasis will be placed on the recognition and interpretation of normal and abnormal resting and exercise ECG monitoring. Three lecture hours per week and two hour laboratory component. Prerequisites: BI 215, BI 216 and PE 371 or permission of instructor. Offered fall semester.

**PE 499 TEST COURSE 12 Credits**

## Philosophy (PH)

### Courses

**PH 210 Foundations of Western Thought I: The Ancient World 3 Credits**

The first in a four-semester sequence which enables students to enter the "great conversation" of western civilization, debating ultimate or philosophical questions about science, religion, self-awareness, ethics and politics. This course examines themes in the thought of Plato, Aristotle and the Stoic, Epicurean and neo Platonist philosophers of the ancient world. Offered fall semester of even-numbered years.

**PH 230 Logic 3 Credits**

A study of the principles of valid reasoning and argument: how to analyze arguments, detect fallacies, apply logical rules, prove and refute conclusions from given premises. Both syllogistic methods of argument and modern systems of symbolic inference are studied.

**PH 303 Survey of Ethics 3 Credits**

An introduction to critical thinking about the fundamental principles on which moral judgments and ethical conduct are based. This course will survey the major historical and contemporary positions.

**PH 305 Foundations of Western Thought II: The Middle Ages 3 Credits**

This course considers the synthesis of Christianity with classical pagan philosophy achieved by St. Augustine and St. Thomas Aquinas (1225-1274). What became of the ancients' ideal of human knowledge (of the universe, the soul, the divine, and the political community) in an age during which philosophy became the "handmaid of theology"? What were the underpinnings of the "natural law" conception of moral and political philosophy? How did this medieval synthesis break down on the scientific side with Galileo's challenge to Aristotelian physics and astronomy, and on the moral and political side with Machiavelli's portrayal of a Renaissance prince? Offered spring semester of odd-numbered years.

**PH 306 Foundations of Western Thought III: 17th & 18th Centuries 3 Credits**

This course follows the development of the European philosophical tradition through the age of religious upheaval, secular enlightenment, scientific and democratic revolutions. Included is a discussion of Post-Aristotelian physical science -- especially the concepts of space, time, motion and causation -- from Galileo through Descartes to Newton and a consideration of the foundation of modern moral and political philosophy by Hobbes and its continuation through Locke, Hume, Rousseau and Kant. Includes Kant's Copernican Revolution in moral philosophy and philosophical theology. The Enlightenment ideal. Offered fall semester of odd-numbered years.

**PH 307 Foundations of Western Thought IV: 19th and 20th Centuries 3 Credits**

This course follows themes discussed in Foundations of Western Thought I, II and III into the contemporary period. Works by Hegel, Kierkegaard, Marx, Mill, Nietzsche, Jaspers, Heidegger, Sartre, Russell, Weil and Arendt. Offered spring semester of even numbered years.

**PH 322 Business Ethics 3 Credits**

This course considers a range of ethical issues arising in the business world which are of common public concern. It is intended to provide a working knowledge of the concepts, theories and types of argument characteristic of ethics in general and an appreciation of how they relate to a market environment. The rights and responsibilities of businesses, managers and employees to each other, to stockholders and to society at large are examined in such contexts as marketing, accounting and auditing, job security, pensions and health care, working conditions, affirmative action, product liability and safety, executive compensation and governance, globalization and the natural environment.

**PH 323 Environmental Ethics 3 Credits**

An introduction to ethical issues concerning the human and non-human environment. The course provides a working knowledge of the concepts, theories, and types of argument characteristic of ethics in general. It analyzes and debates a selection of such topics as: ethical implications of continued economic and population growth; designing the infrastructure and architecture of human communities for optimal integration into the natural environment; sustainable agriculture and wilderness management; biodiversity and endangered species; pollution, waste disposal and climate change. Mainstream philosophical approaches will be compared with radical perspectives such as deep ecology and eco-feminism; and responses to ecological hazards ranging from free market strategies, through government regulation, local economic and ecological initiatives, to civil disobedience and eco-sabotage, may be examined.

**PH 324 Criminal Justice Ethics 3 Credits**

This course provides a short introduction to general ethics (about 1/3 of the semester) with applications to practices and problems in the criminal justice field. Its focus is less on specific rules of ethical conduct for criminal justice professionals than on their interface with issues of common public concern. We will debate the legitimate functions and limitations of the criminal law, as well as a selection of moral problems in policing, judicial processing and corrections. In addition, a number of recent high-profile Supreme and Appeals Court cases in the areas of civil rights and civil liberties will be analyzed. The emphasis will be on developing discussion skills and familiarity with essential patterns of legal and moral reasoning.

**PH 340 Philosophy of Non-Violence 3 Credits**

A study of permissible uses of force by individuals and nations. Topics include the theory of the just war, pacifism and non-resistance, conscientious objection, civil disobedience, and the moral problem of nuclear armaments.

**PH 350 Medical Ethics 3 Credits**

This course examines general ethics and professional ethics; patient rights and professional responsibilities; terminating and prolonging life; allocating scarce medical resources; human experimentation and informed consent; genetic intervention; and other issues.

**PH 360 Philosophy of Science 3 Credits**

A course examining the basic principles of scientific reasoning, questions concerning scientific progress and scientific revolutions and ethical issues in the technological application of scientific discoveries. Case studies are drawn both from the history of science and from contemporary controversies. Prerequisites: sophomore standing or above and one course in laboratory science.

**PH 400 Reading and Research 3 Credits**

An inquiry into the pertinent literature and source materials of a specific area concerned with a special project to be agreed upon by instructor and student. Prerequisite: consent of instructor involved.

## Political Science (PO)

### Courses

**PO 105 American Politics 3 Credits**

A study of the theoretical, institutional, and behavioral elements of the U.S. political system. Offered both semesters. Open freshman only, except by permission of department chair or unless a major requirement for another program or major. Open to students with freshmen and sophomore standing only, otherwise instructor permission.

**PO 106 Introduction to Public Policy and Administration 3 Credits**

An introductory examination of theoretical and practical approaches to policymaking and administration, the essential steps in the process, and the roles of key actors at all levels. This course prepares students for more in-depth study of all other facets of the political realm. Open to students with freshmen and sophomore standing only, otherwise instructor permission.

**PO 202 Introduction to Comparative Politics 3 Credits**

An introductory course that acquaints students with the comparative study of politics. The course will compare executive and legislative relationships, electoral systems, ideologies, and political parties. Various countries from around the world will be used to illustrate the application and consequences of different institutions and ideas. Open to students with freshmen and sophomore standing only, otherwise instructor's permission.

**PO 215 International Relations 3 Credits**

An inquiry in assumptions, theories, and dogmas of the modern state system. Examination and evaluation of such topics as realist theory; conflict resolution; game theory; decision-making theory; and ecopolitics. Open to students with freshmen and sophomore standing only, otherwise instructor's permission.

**PO 220 Research Methods 3 Credits**

An introduction to the methods of political analysis, standard nomenclature, and basic research methods relied upon in the study of politics. Emphasis is placed on quantitative methods and ethical issues in conducting research. Not open to freshman without instructor's permission.

**PO 300 Special Topics in Politics 3 Credits**

Select topics offered on occasion. Prerequisite: permission of the instructor.

**PO 301 Special Topics in International Relations 3 Credits**

Select topics in the area of International Relations offered on occasion. Topics courses may be repeated for credit as long as a different topic is offered. 3 lecture hours. pre-req of PO 215, C or higher; open to all students.



**PO 303 Political Philosophy 3 Credits**

After introducing the political philosophies of Socrates, Plato and Aristotle, this course explores the ideas of major Western thinkers from the Renaissance through the Industrial Revolution. The course not only examines each philosopher's understandings of power, justice, equality and freedom, but also contemporary applications and implications of these ideas. Open to Sophomore 2 and above, otherwise instructor permission.

**PO 305 Geopolitics 3 Credits**

Geopolitics will give students an increased appreciation of the influence of geography on political decision-making. This course will help students "visualize" world politics and understand how geography affects both national and transnational political behaviors. Students will learn to think and write critically about such issues and forces as globalization, development, and conflict. Students will develop an understanding of how interests and perceptions are shaped by geography. Pre-req of PO 202 or PO 215, C or higher; open to all students.

**PO 310 European Politics 3 Credits**

A study of the political systems, cultures, and issues of selected countries from western, northern and southern Europe as well as Russia and the European Union. This course will also consider the relationship between domestic and foreign policies and the relationship between the United States and Europe. Pre-req of PO 202, C or higher; open to all students.

**PO 312 The Presidency 3 Credits**

A study of the presidential office and its relationship with the major American political institutions. Pre-req of PO 105, C or higher; open to all students.

**PO 313 Political Parties and Interest Groups 3 Credits**

A study of political parties and interest groups as they influence the decision making process, the formulation of government policy, and the selection of official personnel. Pre-req of PO 105, C or higher; open to all students.

**PO 314 The Legislative Process 3 Credits**

A study of the national and state legislatures in the United States through a combination of lectures, readings, contact with legislators, and actual investigations on the state legislative scene itself. Pre-req of PO 105, C or higher; open to all students.

**PO 315 Public Opinion and Political Behavior 3 Credits**

A study of the development of political attitudes and the formation of public opinion; the influence of public opinion on governmental policy through its relationship to political participation representation and leadership. Pre-req of PO 105, C or higher; open to all students.

**PO 320 Topics in Area Studies 3 Credits**

Selected topics in area studies will be offered on occasion. This course will be used to cover subjects not included in the regular offerings in comparative politics. Topics may include the politics of a particular country or region such as Latin America, Africa, Eastern Europe, or the Middle East. A topics course may also be offered on a particular issue area such as foreign and defense policy, healthcare policy, welfare policy, or environmental policy. Pre-req of PO 202, C or higher; open to all students.

**PO 321 U.S. Constitutional Law 3 Credits**

Introduction to the evolution and structure of the American constitutional system, focusing on the federal relationship, the separation of powers, and judicial review, relying primarily upon the case method of analysis. Open to Sophomore 2 and above, otherwise instructor permission.

**PO 324 Civil Liberties 3 Credits**

An examination of the relationship of individuals to government, relying primarily upon the case method of study, with specific consideration of problems of equal protection, due process, privacy, and freedoms of speech and religion. Open to Sophomore 2 and above, otherwise instructor permission.

**PO 330 American Citizenship 3 Credits**

Using the Declaration of Independence, the Constitution and the Bill of Rights as a foundation, this course examines what it means to be a citizen of the United States. The course addresses such questions as: What are citizens entitled to and what do they owe the state and each other? Is there an obligation to obey political authority? Is there ever an obligation to disobey authority? An important consideration is the role of the military in American political life and in particular, the relationship between the military ethic and republican values. Pre-req of PO 105, C or higher; open to all students.

**PO 331 State and Local Politics 3 Credits**

The primary objective of this course is to gain an understanding of the role of the state and local political institutions within the context of American federalism. Emphasis is placed on procedural and policy differences as well as political issues in state, regional, and local governments. Pre-req of PO 105, C or higher; open to all students.

**PO 333 American Foreign Policy 3 Credits**

Through studies of the three "levels of analysis" personal political psychology, bureaucratic politics, and international relations-this course examines the processes of American foreign policy formulation and execution; it explores the objectives, methods, and consequences of major U.S. foreign and military policies. If practicable, students will take part in role-playing simulations. Pre-req of PO 105 or PO 202, C or higher; open to all students.

**PO 340 Revolution and Forces of Change 3 Credits**

A critical analysis of several revolutions that will examine causes, outcomes, and accepted explanations in an attempt to discern generalities applicable to all revolutions. Pre-req of PO 202, C or higher; open to all students.

**PO 348 Asian Politics 3 Credits**

A study of the political systems, cultures, and issues of the People's Republic of China, Taiwan, Japan, North and South Korea, Vietnam, Indonesia, Pakistan, and India. This course will pay particular attention to the relationship between the West and Asia, the processes of "modernization," and the role of Asia in contemporary international relations. Pre-req of PO 202, C or higher; open to all students.

**PO 400 Independent Study 3 Credits**

An opportunity for qualified upperclass students to engage in an intensive reading or research program in fields of interest not satisfactorily covered by regular course offerings. Periodic conferences will be required. Prerequisite: written consent of the instructor to a specific project presented by the applicant. Offered as occasion demands. Open to upperclassmen, otherwise by permission of the instructor.

**PO 403 Internship 3-15 Credit**

Direct participation in the practical workings of state, municipal, and Federal government. Ordinarily open only to seniors. Offered on availability to internships. Credits to be determined by instructor. Prerequisite: permission of the instructor.

**PO 405 International Organizations 3 Credits**

This course focuses on the increasingly influential and varied roles international organizations play in the world today from peace and security to international development, human rights, and environmental protection. It traces the evolution of the thinking behind, and efforts to establish international organizations, and analyzes not only their promise and challenges, but also their successes and failures to date. Although particular attention is paid to the United Nations and its many affiliated bodies, regional organizations (e.g. European Union, Organization of American States, African Union, NATO), international non-governmental organizations (NGOs), and multi-national corporations are also assessed. Offered alternate years. pre-req of PO 215, C or higher; open to all students.

**PO 410 Capstone Seminar in Political Science 3 Credits**

A research and writing course designed to introduce students to graduate standards of original research and critical writing in political science. Prerequisite: permission of the instructor.

**PO 412 War and Peace 3 Credits**

An inquiry into the ostensible causes of war-- biological, economic, psychological, strategic, and theological; and an examination of the purported causes of war -- personal probity, military counterpoise, political utopia, and world government. Preparation of a substantial paper is required. Prerequisite: permission of the instructor.

**PO 415 International Law 3 Credits**

This course examines the development of international law, and assesses its effectiveness in governing the relations among nation-states. The course examines early as well as more recent efforts to build a body of such law. It compares international law with domestic law, and explores the principal sources of international law. The course uses cases to analyze the development of international law in areas such as extraterritorial jurisdiction, the range of sovereignty, diplomatic relations, the treaty system, arbitration and adjudication, the use of force, human rights, the environment, and economic relations. Offered alternate years. Pre-req of PO 215, C or higher; open to all students.

**PO 490 Honors in Political Science 3 Credits**

A substantial, sequential, research and writing project. See description of department honors program. Offered as occasion demands. Prerequisite: permission of the instructor.

**PO 491 Honors in Political Science 3 Credits**

The second semester of honors in political science. Devoted to writing and defending the honors thesis. Prerequisite: Student must earn a grade of B or higher in PO 490 and permission of the instructor and program coordinator.

## Physics (PS)

### Courses

**PS 100 Elementary Physics 4 Credits**

A selection of topics from kinematics, dynamics, fluids, energy, acoustics, electricity, optics, and modern physics required of an informed citizenry. Classroom: 3 hours; laboratory: 2 hours. Note: Credit cannot be received for PS100 if credit has been earned in PS 201 or PS 211.

**PS 107 Introductory Solar System Astronomy 4 Credits**

A descriptive study of the solar system, including the sun, planets, asteroids, comets and interplanetary space. The role of observation in the evolution of astronomy is emphasized. Classroom: 3 hours; laboratory: 2 hours. Does not count as a lab science if taken for 3 credits.

**PS 108 Stellar and Galactic Astronomy 4 Credits**

A descriptive introduction to the universe, including stars, galaxies, and recent deep space discoveries. Discussions survey the techniques used by astronomers to interpret the wide variety of observed phenomena in the cosmos. Classroom: 3 hours; laboratory: 2 hours. Does not count as a lab science if taken for 3 credits.

**PS 110 Physics of Continuous Media 3 Credits**

An introduction to fluid mechanics, sound and thermal physics. Open only to first year students or by permission of department. Classroom: 3 hours. Pre- or Co-Requisite: MA 108 or MA 121. Offered spring semesters only.

**PS 201 General Physics I 4 Credits**

An algebra-based study of mechanics, sound and heat, with correlated laboratory experiments. Classroom 3 hours, laboratory 2 hours. Prerequisite: MA107. Note: No student will receive credit for both PS201 and PS211, or for both PS202 and PS212.

**PS 202 General Physics II 4 Credits**

An algebra-based study of magnetism, electricity, light, and atomic physics, with correlated laboratory experiments. Classroom: 3 hours; laboratory: 2 hours. Prerequisite: PS 201. Note: Credit cannot be received for both PS 202 and PS 212. Offered spring semesters only.

**PS 205 Basic Instrumentation in the Natural Sciences 4 Credits**

An introduction to instrumentation theory and measurement technique. Emphasis on identification of and models for the behavior of measuring system components, the combinations of components in typical research equipment and the statistical analysis necessary for interpretation of measurements. Classroom: 3 hours; laboratory: 3 hours. Prerequisite: permission of instructor. Offered fall semester of odd-numbered years only.

**PS 207 Meteorology and Climatology 3,4 Credits**

A first study of atmospheric processes, elementary forecasting, and the major climatic classes. Particular emphasis is placed on the effects of these phenomena on human activities. Laboratory practice includes elementary forecasting techniques, observations, calculations, and theoretical analysis of weather and climate patterns. Classroom: 3 hours; laboratory: 2 hours. Prerequisite: PS 201 or PS 202 or permission of the instructor. Does not count as a lab science if taken for 3 credits.

**PS 211 University Physics I 4 Credits**

A calculus-based study of vectors; Newton's laws; uniform, accelerated, rotational and harmonic motion; conservation laws; fluid mechanics; elasticity. Classroom: 3 hours; laboratory: 2 hours. Prerequisite: MA 121. Note: Credit cannot be received for both PS 201 and PS 211. Offered fall semesters only.

**PS 212 University Physics II 4 Credits**

A calculus-based study of topics in electricity, magnetism, waves and optics. Classroom: 3 hours; laboratory: 2 hours. Prerequisite: PS 211; Pre- or Co-requisite: MA 122. Note: Credit cannot be received for both PS 202 and PS 212. Offered spring semesters only.

**PS 232 University Physics III 3 Credits**

A study of topics from quantum phenomena, spectroscopy, relativity, nuclear and solid state physics. Classroom 3 hours. Prerequisite: PS212 or permission of instructor.

**PS 331 Mechanics 4 Credits**

Newtonian Mechanics applied to a particle including rectilinear and general motion, linear oscillations, non-inertial reference frames, gravitation, and central forces. Non-linear oscillators and chaos. Classroom: 3 hours; laboratory: 3 hours. Prerequisites: PS 212 and MA 224 or permission of instructor. Offered fall semester of odd-numbered years only.



**PS 332 Mechanics II 4 Credits**

Newtonian Mechanics applied to a system of particles including planar and general motion of rigid bodies, and oscillating systems. Lagrangian and Hamiltonian dynamical formulations. Introduction to relativistic dynamics. Classroom: 3 hours; laboratory: 3 hours. Prerequisite: PS 331. Offered spring semester of even-numbered years only.

**PS 354 Thermodynamics 4 Credits**

A study of first and second laws of thermodynamics with applications; thermodynamic potentials and applications to systems in equilibrium; introduction to statistical mechanics including Boltzmann statistics, quantum statistics, and statistical interpretation of entropy. Classroom: 3 hours; laboratory: 3 hours. Prerequisites: PS 110, PS 212 and MA 224 or permission of instructor. Offered fall semester of even-numbered years only.

**PS 363 Optics 4 Credits**

A study of the nature and propagation of light; reflection and refraction, thick lenses, lens aberrations, and optical instruments. Interference, dispersion, diffraction, polarization, and color phenomena. Classroom: 3 hours; laboratory: 3 hours. Prerequisites: PS 212 or permission of instructor. Offered spring semester of odd-numbered years only.

**PS 421 Advanced Laboratory I 1-4 Credit**

A laboratory investigation in a specific area of experimental physics designed in consultation with physics faculty. Prerequisite: Permission of the instructor. Offered fall semesters only.

**PS 422 Advanced Laboratory II 1-4 Credit**

A laboratory investigation in a specific area of experimental physics designed in consultation with physics faculty. Prerequisite: Permission of the instructor. Offered spring semesters only.

**PS 423 Electricity and Magnetism I 4 Credits**

A study of electrical circuits, electrostatic fields, application of Gauss' Law and Laplace's equation; dielectric theory; magnetic fields, induced electric fields and currents; theory of magnetic materials; Maxwell's equations and electromagnetic waves. Classroom 3 hours, laboratory 3 hours. Prerequisites: PS212 and MA224; Pre- or Co-requisite: MA223; or permission of instructor. Offered even numbered fall semesters.

**PS 424 Electricity and Magnetism II 4 Credits**

A continuation of PS 423, studying electrical circuits, electrostatic fields, application of Gauss' Law and Laplace's equation; dielectric theory; magnetic fields, induced electric fields and currents; theory of magnetic materials; Maxwell's equations and electromagnetic waves. Classroom: 3 hours; laboratory: 3 hours. Prerequisites: PS 423. Offered spring semester of odd-numbered years only.

**PS 441 Modern Physics I 4 Credits**

An introduction to special relativity, quantum mechanics, structure and spectra of atoms and molecules, nuclear models, and nuclear interactions. Classroom: 3 hours; laboratory: 3 hours. Prerequisites: PS 212 and MA 224 or permission of instructor. Offered fall semester of odd-numbered years only.

**PS 442 Modern Physics II 4 Credits**

A continuation of PS 441, introducing special relativity, quantum mechanics, structure and spectra of atoms and molecules, nuclear models, and nuclear interactions. Classroom: 3 hours; laboratory: 3 hours. Prerequisite: PS 441. Offered spring semester of even-numbered years only.

**PS 451 Seminar I 1 Credit**

A study of special topics of current interest. This capstone course integrates reading, writing, speaking and critical thinking skills. Classroom: 1 hour. Prerequisite: permission of the instructor. Offered fall semesters only.

**PS 452 Seminar II 1 Credit**

A continuation of PS 451, investigating special topics of current interest. This capstone course integrates reading, writing, speaking, and critical thinking skills. Classroom: 1 hour. Prerequisite: permission of the instructor. Offered spring semesters only.

**PS 461 Senior Project I 1 Credit**

A project-oriented capstone experience that integrates reading, writing, speaking and critical thinking. The senior student chooses a project with faculty advice and takes charge of its execution to a satisfying conclusion. The course requires oral and written presentations of the project results. Prerequisites: senior class standing and permission of the instructor. Offered fall semesters only.

**PS 462 Senior Project II 1 Credit**

A project-oriented capstone experience that integrates reading, writing, speaking and critical thinking. The senior student chooses a project with faculty advice and takes charge of its execution to a satisfying conclusion. The course requires an oral and written presentation of the completed project. Prerequisites: senior class standing and permission of the instructor. Offered spring semesters only.

## Psychology (PY)

### Courses

**PY 210 Psychology of Leadership 3 Credits**

This course is designed to introduce students to the theoretical aspects of leadership, and to help them understand how theory applies to real situations. Topics include leadership models, leader behavior, leadership skills, followership, teams and motivation. Students will be expected to analyze cases, current situations and their own leader style. Prerequisite: PY 211, Introduction to Psychology.

**PY 211 Introduction to Psychology 3 Credits**

An introduction to psychology as the science of behavior. Topics to be discussed will include learning, motivation, emotions, perception, personality, tests and measurements, and additional selected topics.

**PY 212 Abnormal Psychology 3 Credits**

A course on the origin and development of psychopathology with emphasis on the biological, social, and psychological determinants. Prerequisite: PY 211 or permission of the instructor.

**PY 220 Developmental Psychology 3 Credits**

A lifespan study of normal development with emphasis on physical, intellectual, social, and emotional growth. Prerequisite: PY 211 or permission of the instructor.

**PY 230 Biopsychology 3 Credits**

This course is a survey of the neurophysiological bases of human behavior. Topics include basic brain anatomy and physiology, neurotransmitters and drugs, sensation and perception, learning and memory, sleep, and neurological disorders.

**PY 232 Engineering Psychology 3 Credits**

The objective of this course is to expose students to the theoretical foundations of research in human factors. Students will be introduced to basic concepts in psychology such as perception, attention, decision making, and motor control. Knowledge of these concepts is critical for the intelligent design of human-technological systems.

**PY 234 Forensic Psychology 3 Credits**

A survey of psychological research and theory dealing with criminal behavior and the legal system. Topics include prediction of violent behavior, sexual assault, victimization, juvenile delinquency, scientific jury selection, criminal investigation and profiling, eyewitness testimony, assessment of mental competency, lie detection, DNA testing, and forensic science.

**PY 236 Cross-Cultural Psychology 3 Credits**

This course will expose students to the influence of culture on human behavior, and will illustrate differences and commonalities in behavior (verbal and non-verbal), attitudes, and values across a range of cultures around the world. Issues concerning cultural contact and inter-cultural relations will be considered to enhance a student's ability to deal with and understand variations in human behavior across cultures and ethnic groups. Methodological issues of particular importance to cross-cultural research will be discussed.

**PY 238 Political Psychology 3 Credits**

This course will examine key research in political psychology which includes the interactions of political and psychological processes and their impact on behavior in personal, local and global communities.

**PY 240 Introduction to Social Psychology 3 Credits**

A general survey of theories, methods and research on individual behavior in a social context. Among topics to be considered are: aggression, interpersonal attraction, affiliation, person perception, attitudes, group processes, and social influence. Prerequisite: PY 211.

**PY 241 Introduction to Personality Theory 3 Credits**

An overview of selected influential statements regarding the structure, dynamics, and development of the human personality. Included are the theories of the Freudians (Freud, Jung, Adler), the Environmentalists (Dollard and Miller, Skinner), and the Existentialists and Humanists (Rogers, Maslow, Frankl). Comparisons among theorists are organized around philosophical and historical themes. Prerequisite: PY 211.

**PY 263 Perception 3 Credits**

Coverage of the major themes and research in perception. Topics include perception of color, form, motion, depth, illusions, perceptual learning, development, and the physiology of perception. Prerequisite: PY 211 or permission of the instructor.

**PY 299 Leadership at Norwich Univ. 3 Credits****PY 313 Experimental Psychology I 3 Credits**

A course on the principles and skills required to plan, execute, and interpret psychological research. Topics include the nature of science, the value of empirical evidence, psychology viewed as a science, the logic of experiments, and the ethics of using human subjects. Students are taught to develop a testable idea, to write and read research reports, and to design, conduct, and analyze univariate and correlational studies. Prerequisite: PY 211 or permission of the instructor.

**PY 314 Experimental Psychology II 3 Credits**

This course will teach students how to design, conduct, and report psychological experiments. The purpose of the course is to link the academic subject matter of psychology to the conduct of research in the laboratory and the field. Topics include the nature of science, formulation of hypotheses, measurement and reliability, research methods (including experimental, correlational, and observational techniques), research design, and ethics of using human subjects. Issues of experimental control, its relation to confounding and research design, and internal and external validity will be included. The course will also focus on the teaching of library research and scientific writing skills. Students will design, implement, analyze, and report results of several research projects. Prerequisite: PY 313, or MA 232, or permission of instructor.

**PY 321 Organizational Psychology 3 Credits**

An analysis of organizational behavior including motivation, climate, leadership, and the use of such techniques as behavior modification in changing human behavior. Theoretical consideration will be followed by application experiences through role playing and case analysis. Prerequisite: PY 211 or permission of the instructor.

**PY 324 Adolescent Psychology 3,4 Credits**

This course examines the physical, emotional, social, cognitive aspects of adolescence from a developmental perspective. Identity, autonomy, sexuality, achievement, and intimacy are examined within the context of the school, the peer group, and the family. Students will have the opportunity to work with adolescents in schools, recreational centers, counseling centers, or through youth service agencies. Required for secondary teacher licensure candidates (Formerly ED 324, Educational Psychology). Prerequisite: PY 211 or permission of the instructor.

**PY 344 Cognition 4 Credits**

Overview of research and theory on human cognitive processes emphasizing the acquisition, storage, representation, retrieval and use of knowledge. Topics include memory, concept formation, language and thought, problem solving and creativity, and cognitive development. Laboratory will include hands-on experiments in cognitive research paradigms.

**PY 350 Environmental Psychology 3 Credits**

A study of the relationship between people and the environment, the use of space as a means of regulating social interaction, and human responses to environmental stressors such as overcrowding, toxic agents, noise, air, and water pollution. Also a brief look at ecological psychology in which setting-specific rather than person-specific determinants of a person's reaction to the environment are analyzed. Prerequisites: minimum junior standing, PY 211, and permission of the instructor.

**PY 352 Learning and Memory 4 Credits**

This course provides an overview of historical and current research findings in the area of learning and memory. The subject will be approached from various theoretical approaches, including behaviorist, cognitive, and neurobiological paradigms. Laboratory will include hands-on experiments using research paradigms from the field of learning and memory.

**PY 355 Psychology and the Law 3 Credits**

A course that examines the research of psychology as it relates to the judicial process; the nature, source, and development of antisocial behavior; and forensic psychology relative to the development of law and policy at the national and international levels. Prerequisites: PY 211, junior standing and permission of the instructor.

**PY 360 History and Systems of Psychology 3 Credits**

An overview of significant movements, theories and individuals in the development of contemporary psychology. The course is organized around significant themes and includes discussion of the philosophy of scientific growth, structuralism, functionalism, behaviorism, Gestalt psychology and psychoanalysis. Included will be examples, cases, and discussions of the APA ethics code that governs the performance of professionals in the field of psychology. This course satisfies the university's General Education Ethics requirement. Prerequisite PY 211 and permission of the instructor. 3 lecture hours.

**PY 398 Thesis Preparation 3 Credits**

The students will prepare a senior thesis prospectus in accordance with the ethical standards of the Human Subjects Committee. This course precedes PY 498. Prerequisites: junior standing, permission of the instructor, PY 211, PY 313, PY 314.

**PY 401 Senior Seminar 3 Credits**

This course is the capstone experience marking the end of a student's undergraduate studies. Students both majoring and minoring in psychology will be provided the experience of synthesizing their learning across their courses in the context of a liberal arts education. Prerequisite: senior status or permission of the instructor, PY 211, PY 313, PY 314.

**PY 402 Conference 0 Credits**

Each Psychology major, must during his/her tenure at Norwich attend at least one professional Psychology meeting.

**PY 403 Presentation 0 Credits**

In order to complete the process of psychological inquiry and communication, each psychology major must present his/her senior research at an appropriate professional forum, spring semester, senior year.

**PY 451 Thematic Seminar 3 Credits**

A seminar course which deals with particular theories or areas of psychology not elsewhere covered in depth or within present course offerings. Prerequisite: PY 211 and permission of the instructor.

**PY 452 Thematic Seminar 3 Credits**

A seminar course which deals with particular theories or areas of psychology not elsewhere covered in depth or within present course offerings. Prerequisite: PY 211 and permission of the instructor.

**PY 453 Internship 3-9 Credit**

Assignments will include work and observation in local, state, and federal institutions or agencies concerned with the education, health, or the protection of society. Written and oral reports. Prerequisites: PY 211 and permission of the instructor.

**PY 471 Directed Readings 3 Credits**

A course in which there is an opportunity to select and read in a specific area of interest that is not available through regular course offerings. Prerequisites: three psychology courses and permission of the instructor.

**PY 498 Senior Thesis 3 Credits**

A research course designed to enable a student to experience all phases of the experiment from literature research, experimental design, data collection and analysis, and written and oral reports. The student will learn all of the procedures, considerations, and standards necessary to ensure the ethical treatment of human participants. Prerequisites: PY 211, PY 313, PY 314, PY 398, senior standing and permission of the instructor.

## Quantitative Methods (QM)

### Courses

**QM 213 Business and Economic Statistics I 3 Credits**

A course emphasizing the development and presentation of statistical data for business and economic decision-making. Topics will include survey methods, statistical description measures, sampling distributions, statistical inference procedures, simple regression and time series analysis, and construction and use of index numbers. Prerequisite or corequisite: MA 212.

**QM 317 Business and Economic Statistics II 3 Credits**

A course in which the statistical concepts developed in QM 213 are continued. New topics developed are multiple correlation and regression theory and analysis, the assumptions of regression analysis and econometric problems, and an introduction to simultaneous models and advanced topics. Prerequisite: QM 213. Offered in the fall-even years.

**QM 370 Quantitative Methods for Marketing & Finance 3 Credits**

A course in which the statistical concepts developed in QM 213 are continued. The focus of the course will be the application of statistical techniques to real world issues in Finance and Marketing. Emphasis will be placed on problem solving, class participation, computer applications and completion of a term paper. Prerequisite QM 213. 3 lecture hours.

## Studio Arts (SA)

### Courses

**SA 103 Introduction to Drawing 3 Credits**

An introduction to drawing, emphasizing articulation of space and pictorial syntax while developing abilities of perception and ways of seeing. Class work is primarily based on observational study. Assigned projects address fundamental and conceptual problems through historical and contemporary artistic practice. Three-hour studio, one-hour lecture per week.

**SA 104 Introduction to Visual Design 3 Credits**

An introduction to the language of visual expression, using studio projects to explore the basic principles of visual art and design as a fundamental component of visual communication. Students acquire a working knowledge of visual syntax applicable to the study of art history, popular culture, and the art of composition. Three-hour studio, one-hour lecture per week.

**SA 105 Introduction to Painting 3 Credits**

An introduction to the issues of contemporary painting, stressing a beginning command of the conventions of pictorial space, narrative, and the language of color. Students explore painting as a means of communicating ideas through visual symbols and metaphors. Class assignments and individual projects explore technical, conceptual, and historical issues central to the language of painting. Three-hour studio, one-hour lecture per week.

**SA 106 Introduction to Printmaking 3 Credits**

An introduction to a diverse range of printmaking media: linocut, woodcut, and screen-printing process. Both color and black-and-white printing methods are explored. Class assignments and individual projects explore technical, conceptual, and historical issues central to the language of printmaking and its connections to contemporary culture. Three-hour studio, one-hour lecture per week.

**SA 107 Introduction to Photography 3 Credits**

An introduction to photographic principles as a means of visual communication and its relationship to history and contemporary issues. The class examines the invention and history of photography. A single-lens reflex manual 35mm film camera is required. Three-hour studio, one-hour lecture per week.

**SA 200 Intermediate Studio 3 Credits**

This course level is for students pursuing further study in one of the following areas: drawing, design, painting, photography, and printmaking. The focus is on developing more complex levels of thought more thorough incorporation of theory and individual initiative in project content and completion. Only one area of study will be pursued each semester. Can be repeated for credit. Six hours of studio per week. Prerequisite: SA100-level studio in area of study or permission of the instructor.

**SA 205 Water Media 3 Credits**

This course examines water media, stressing an advanced command of the conventions of pictorial space, narrative, and the language of color and design. Class assignments and individual projects explore technical, conceptual, contemporary, and historical issues central to water media. Attention is given to each student's unique and expressive handling of the media. Six hours of studio per week. Prerequisite: SA 103 or instructor's permission.

**SA 210 The Portrait 3 Credits**

This course explores the perceptual and conceptual means to construct the human face as a way to explore, understand, and portray the human condition. The structure of the head is examined as anatomy and as form. Historical examples are presented and examined as well as contemporary theory of the portrait and self-portrait. Six hours of studio per week. Prerequisite: SA 103, or instructor's permission.

**SA 265 Life Drawing 3 Credits**

The course focuses on study and exploration of the human figure using a range of approaches, with emphasis on observation, anatomy, spatial structure, and the use of life drawing as a means to analyze and explore the nature of the human condition. Historical examples ranging from cave painting to contemporary art are presented, researched, and discussed. Six hours of studio per week. Prerequisite: SA 103, or instructor's permission.

**SA 299 Life Drawing 3 Credits****SA 299L Inter Studio: Sketching 0 Credits****SA 300 Advanced Studio 3 Credits**

This course is for students who have completed SA 100 and SA 200 level courses in their area of study and have a demonstrated ability to be self-directed and self motivated in their purposes and goals. Prior to registration, the student must have an approved outline for their individual course of study. Can be repeated for credit. Six hours of studio per week. Prior to registration, the student must submit in writing, and the instructor must accept, a proposed course of study.

**Sports Medicine (SM)****Courses****SM 128 Clinical Anatomy I 3 Credits**

This course is part one of a two part series of anatomy courses in a modular format aligned with clinical practice. It provides an introduction to human anatomy with a basic survey of the body and pathological processes. Students will learn basic concepts related to anatomy, pathology and medical assessment of the head, eyes, ears, nose, throat, neck, back, and upper extremities. Classroom 2 hours, laboratory 2 hours. Offered fall semesters.

**SM 129 Clinical Anatomy II 3 Credits**

This course is part two of a two part series of anatomy courses in a modular format aligned with clinical practice. It provides an introduction to human anatomy with a basic survey of the body and pathological processes. Students will learn basic concepts related to anatomy, pathology and medical assessment of the thorax, abdomen, pelvis, cranial nerves, and lower extremities. Classroom 2 hours, laboratory 2 hours. Offered spring semesters.

**SM 136 Emergency Care, Injury/Illness 3 Credits****SM 138 Introduction to Sports Medicine 3 Credits**

This course provides students with an introduction to the principles of pharmacology, medical terminology, and documentation used in the care of physically active individuals.

**SM 139 Health Science Research Methods 2 Credits**

This course provides the foundation for understanding basic research methods and the application of research findings to health care. Current literature is used to demonstrate the fundamentals of research design, research ethics, basic biostatistics, and other research-related issues applicable to future health care providers. Classroom 2 hours. Prerequisite: MA 232. Offered spring semesters.

**SM 200 Clinical Education in Athletic Training I 1 Credit**

This course provides students the opportunity to integrate clinical proficiencies introduced in prerequisite courses during a supervised practicum in an athletic training setting. Clinical rotation(s) (3 hours/week) and clinical proficiency evaluations. Prerequisites: SM 136, SM 138, and SM 220.

**SM 201 Clinical Education in Athletic Training II 2 Credits**

This course provides students the opportunity to integrate clinical proficiencies introduced in prerequisite courses during a supervised practicum in an athletic training setting. Clinical rotation(s) (6 hours/week) and clinical proficiency evaluations. Prerequisites: SM 212 and 231, MA 235.

**SM 210 Assessment of Injury and Illness 4 Credits**

Building on the assessment principles acquired in SM 138 and SM 220; this course focuses on the techniques necessary to evaluate body systems for injury/illness. Classroom 3 hours, laboratory 3 hours. Prerequisites: SM 220. Co-Requisite: BI 216.

**SM 212 Health Promotion 3 Credits**

This course provides students with the knowledge and skills essential for understanding the etiology and prevention of common injuries and illness. Special emphasis is placed on acute and chronic conditions of the musculoskeletal system and chronic conditions of the cardiovascular, endocrine and respiratory systems. Classroom 3 hours. Offered fall semesters.



**SM 220 Care and Prevention of Athletic Injuries 4 Credits**

Course provides students with the knowledge and skills essential for the proper prevention, evaluation, and treatment of common athletic injuries. Risk management and professional ethics are stressed. Classroom 3 hours, laboratory 3 hours. Prerequisite: SM 138.

**SM 226 Clinical Education in Sports Medicine 2 Credits**

Emphasis will be placed on the application of knowledge and skills introduced in SM 135, SM 138, SM 210 and BI 215. This course provides students the opportunity to develop clinical proficiencies introduced in preceding courses. Supervised practicum in athletic training setting. Class meets for 2 hours/week utilizing lecture, demonstrations and hands-on instructional techniques, plus Clinical Rotation (average 4 hours/week). Prerequisites: SM 135 and SM 138.

**SM 227 Clinical Anatomy & Biomechanics 3 Credits**

This course is designed to explore clinical anatomy and biomechanical principles, exposing students to the structural interrelationships that serve to form the basis for normal function and as a means to understanding structural and functional pathology. Classroom 3 hours. Co-requisite: SM 220.

**SM 228 Clinical Physiology I 4 Credits**

This course is part one of a series of two physiology courses in a modular format aligned with clinical practice. It provides an introduction to human physiology with a basic survey of the physiologic and pathological processes. Students will learn concepts related to cellular, neuromuscular, renal, and cardiovascular physiology. Classroom 3 hours, laboratory 3 hours. Offered fall semesters.

**SM 229 Clinical Physiology II 4 Credits**

This course is part two of a series of two physiology courses in a modular format aligned with clinical practice. It provides an introduction to human physiology with a basic survey of the physiologic pathological processes. Students will learn concepts related to respiratory, gastrointestinal, endocrine, and reproductive physiology and temperature regulation. Classroom 3 hours, laboratory 3 hours. Prerequisite: SM 228. Offered spring semesters.

**SM 230 Fundamentals of Evidence-Based Practice 2 Credits**

This course prepares students to make independent judgments about the validity of clinical research and implement evidence-based clinical practice in their careers. Focus is on concepts of evidence-based practice with emphasis on forming answerable clinical questions, effective literature search strategies, and structured evaluation of the strength and relevance of clinical evidence. Classroom 2 hours. Offered spring semesters.

**SM 231 Management of Spine and Pelvic Conditions 3 Credits**

This course will focus on a critical analysis of injuries and conditions that may affect the spine and pelvis in physically active individuals. The application of joint and musculoskeletal anatomy will be utilized to assess the various joints and body regions of the spine and pelvis to determine the appropriate management of these conditions. Classroom 2 hours, Laboratory 2 hours. Offered fall semesters.

**SM 232 Lower Extremity Injuries 3 Credits**

This course will focus on a critical analysis of injuries and conditions that may affect the lower extremity in physically active individuals. The application of joint and musculoskeletal anatomy will be utilized to assess the various joints and body regions of the lower extremity to determine the appropriate management of these conditions. Classroom 2 hours, Laboratory 2 hours. Offered spring semesters.

**SM 233 Upper Extremity Injuries 3 Credits**

This course will focus on a critical analysis of injuries and conditions that may affect the upper extremity in physically active individuals. The application of joint and musculoskeletal anatomy will be utilized to assess the various joints and body regions of the upper extremity to determine the appropriate management of these conditions. Classroom 2 hours, Laboratory 2 hours. Offered fall semesters.

**SM 299 Topics 1-3 Credit****SM 300 Clinical Education in Athletic Training III 4 Credits**

This course provides students the opportunity to integrate clinical proficiencies introduced in prerequisite courses during a supervised practicum in an athletic training setting. Clinical rotation(s) including non-traditional seasons (12 hours/week) and clinical proficiency evaluations. Prerequisites: SM 228, SM 229, and SM 232.

**SM 301 Clinical Education in Athletic Training IV 4 Credits**

This course provides students the opportunity to integrate clinical proficiencies introduced in prerequisite courses during a supervised practicum in an athletic training setting. Clinical rotation(s) (12 hours/week) and clinical proficiency evaluations. Prerequisites: SM 233 and SM 420.

**SM 400 Clinical Education in Athletic Training V 4 Credits**

This course provides students the opportunity to integrate clinical proficiencies introduced in prerequisite courses during a supervised practicum in an athletic training setting. Clinical rotation(s) including non-traditional seasons (12 hours/week) and clinical proficiency evaluations. Prerequisites: SM 212, SM 420, SM 422; BI 253 and PE 371.

**SM 401 Clinical Education in Athletic Training VI 4 Credits**

This course provides students the opportunity to integrate clinical proficiencies introduced in prerequisite courses during a supervised practicum in an athletic training setting. Clinical rotation(s) (12 hours/week) and clinical proficiency evaluations. Prerequisites: SM 400 and SM 439.

**SM 420 Therapeutic Modalities 4 Credits**

Investigation of the physiological response of selected human body tissues to trauma and inactivity as well as the implications of said responses for the selection, use, and application of therapeutic modalities. Classroom 3 hours, laboratory 3 hours. Prerequisites: SM 220.

**SM 422 Therapeutic Exercise 4 Credits**

Investigation of principles, objectives, indications, contraindications and progression of various modes of conditioning and reconditioning exercises. Methods for evaluation, progress assessment and development of criteria for return to activity. Classroom 3 hours, laboratory 3 hours. Prerequisite: SM 420.

**SM 426 Internship 12 Credits**

A course designed to provide the Sports Medicine students with an intern-type experience in a professional setting appropriate to their career goals. Prerequisite: satisfactory completion of all courses in the major through the sixth semester. Cross listed as PE/SM. A student may not receive credit for both.

**SM 439 Leadership & Management in Sports Medicine 3 Credits****SM 440 Evidence-Based Sports Med 3 Credits**

Part of a two-semester capstone experience in sports medicine/athletic training. This course focuses on the development and utilization of evidence-based practice research as it is applied to sports medicine. Prerequisites: SM 439 and MA 232.

**SM 450 Capstone Experience I 1 Credit**

This course will focus on the development of two evidence-based practice projects that have direct application to clinical practice. Classroom 1 hour. Offered fall semesters.

**SM 451 Capstone Experience II 1 Credit**

This course will focus the presentation and evaluation of two evidence-based practice projects from SM 450. Classroom 1 hour. Offered spring semesters.

**SM 460 Emerging Practice Skills 3 Credits**

This course will focus on emerging topics in sports medicine practice. Included in the course will be advanced airway management, advanced wound closure techniques, IV therapy, advanced cardiac examination and advanced immobilization techniques. Classroom 2 hour, Laboratory 2 hours. Offered spring semesters.

## Sociology (SO)

### Courses

**SO 201 Introduction to Sociology 3 Credits**

An analysis of the order and change in social life, both at the micro (interactional) and macro (societal) levels. An examination of fundamental concepts and research methods applied to understanding culture and socialization; social groups and organizations; social stratification; and social change.

**SO 202 Problems of Modern Society 3 Credits**

This course examines the problems of American social institutions such as the family, the economy, and education, using basic sociological principles and paradigms. The course also covers problems of inequality, deviance, and problems of change and modernization.

**SO 209 Methods of Social Science Research 4 Credits**

An examination of the methodological foundations of the social sciences; the logic and technique of empirical inquiry; the nature of social facts, the operationalization of concepts, and the construction of hypotheses; research designs including surveys, interviews, experiments, observation, and evaluation; the organization and analysis of data; graph and table construction and interpretation; the common problems of empirical social research; and research ethics. Emphasis given to criminal justice applications. The lab part of the course instructs students how to use and apply SPSS and other relevant software. Cross-listed with CJ 209. Offered fall semester. Classroom and Laboratory 4 hours.

**SO 212 Cultural Anthropology 3 Credits**

Principles and methods in the comparative study of cultures. An examination of the concepts and theories in terms of which cultural anthropology is pursued. Offered in fall semesters.

**SO 214 Racial and Cultural Minorities 3 Credits**

A study of relations between racial and ethnic groups in modern America. Attention is also given to selected subordinate groups in the U.S. and other countries.

**SO 216 Soc of Health, Wellness & Med 3 Credits**

Introduction to the sociology of health, wellness and medicine. Examines the cultural and institutional aspects of health, wellness, and healthcare systems through basic sociological principles, paradigms and methods. Explores inequality in health outcomes, access to resources, and within the medical field. Includes an international comparative approach. Offered annually in the fall semester. Open only to Nursing majors in their third semester of the degree program, students with a Sociology minor, or by permission of the Instructor and the Department Chairperson (3 credits).

**SO 300 Topics in Criminal Sociology 3 Credits**

Selected topics offered on occasion.

**SO 316 Aging in Society 3 Credits**

Introduction to the sociological study of aging in society. This course examines the cultural, relational and institutional interpretations of aging through the life course using basic sociological principles, paradigms and methods. Students will explore inequality as it relates to aging and diverse populations in terms of health outcomes, in access to resources, and within the medical field. Offered annually in the fall semester. Prerequisites: SO 216 or SO 201, or by permission of the instructor. 3 lecture hours.

**SO 320 Drugs and Society 3 Credits**

This course focuses on the interrelationships between drugs and the social order. Issues considered include: the nature and effects of legal and illegal drugs; the determinants of drug effects, especially the social determinants; the history of drug prohibition; drug addiction and drug treatment; and drug policy. Cross-listed with CJ 320. Offered every other year.

**SO 330 Military Sociology 3 Credits**

This course provides a sociological perspective of the military as both an institution as an occupation. It examines the social structure and functions of the military and the social factors that influence behavior in and of the military. In terms of function, it examines the changing purposes of the military in view of changing national and international conditions; and in terms of structure, it examines the norms, values, traditions, organizations, and culture of the military. It is designed to provide greater insight into the routine life within the military and into contemporary issues confronting the military. Course taught in spring every other year.

**SO 400 Independent Study 3 Credits**

An opportunity for qualified upper class students to engage in an intensive research program in fields of interest not satisfactorily covered by regular course offerings. Periodic conferences will be required. Prerequisite: written consent of the instructor to a specific project presented by the applicant. Open only to students with a cumulative quality point average of 2.5. Offered on occasion. Prerequisite: Sociology minor and SO 201. 3 lecture hours.

**SO 402 Law and Society 3 Credits**

An analysis of various theoretical perspectives on the nature, courses, organization and operation of law and legal systems. Emphasis will be placed on law creation, conflict resolution, the legal profession, and the role of law in social change. Cross listed with CJ 402. Offered every other year.

## Spanish (SP)

### Courses

**SP 111 Beginning Spanish I 6 Credits**

An intensive course providing an introduction to the Spanish language, in which speaking proficiency, aural comprehension, vocabulary acquisition, reading, and writing are brought to a level enabling students to use the language actively in everyday situations. Classroom: 6 hours, laboratory: 2 hours. Not open to students who have successfully completed SP 205 or higher.



**SP 112 Beginning Spanish II 6 Credits**

A continuation of SP 111, in which language skills are brought to a level enabling students to participate more fully in general conversation, to read more sophisticated passages, and to write with a firmer command of syntactical structures. Classroom: 6 hours, laboratory: 2 hours. Prerequisite: SP 111 or equivalent, NU placement. Not open to students who have successfully completed SP 205 or higher.

**SP 150 Topics Course 3 Credits**

Specialized topics offered relating to culture, literature, business practices, language or linguistics. Topic will be indicated in the schedule of classes. May be repeated for credit, as topics vary. May be taught in Spanish or English; see schedule of classes. (When taught in English, this course may not count towards fulfilling the foreign language requirement.) Classroom: 3 hours.

**SP 205 Intermediate Spanish I 3 Credits**

A course that provides aural-oral practice in Spanish, in which students are enabled to enter into full discussion of topics that include abstract themes; review and expanded use of syntactical structures; intensive and extensive reading; and composition. Classroom 3 hours, laboratory 1 hour. Prerequisite: SP 112, NU placement, a score of 500 on the CEEB Spanish Reading Test, or permission of instructor.

**SP 206 Intermediate Spanish II 3 Credits**

A course that provides aural-oral practice in Spanish, in which students are enabled to enter into full discussion of topics that include abstract themes; review and expanded use of syntactical structures; intensive and extensive reading; and composition. Classroom 3 hours, laboratory 1 hour. Prerequisite: SP 205 or the equivalent, NU placement, a score of 500 on the CEEB Spanish Reading Test, or permission of the instructor.

**SP 250 Topics Course 3 Credits**

Specialized topics offered relating to culture, literature, business practices, language, or linguistics. Topic will be indicated in the schedule of classes. May be repeated for credit, as topics vary. The number ascribed to the course will reflect the level of the material under study as well as the level of proficiency expected of the student. May be taught in Spanish or English; see schedule of classes. Classroom 3 hours. (When taught in English, this course may not count towards fulfilling the foreign language requirement.)

**SP 301 Advanced Spanish I 3 Credits**

Oral and written practice of the language through class discussions of selected Hispanic authors. Selective review of grammar, especially of the more difficult and subtle aspects, designed to facilitate an idiomatic and fluent use of the language. Classroom 3 hours. Prerequisite: SP 206 or permission of instructor.

**SP 302 Advanced Spanish II 3 Credits**

Oral and written practice of the language through class discussions of selected Hispanic authors. Selective review of grammar, especially of the more difficult and subtle aspects, designed to facilitate an idiomatic and fluent use of the language. Classroom: 3 hours. Prerequisite: SP 206 or permission of instructor.

**SP 321 Introduction to the Literature of Spain I 3 Credits**

A survey of peninsular Spanish literature from prehistoric Spain to the Modern Age. Lectures, readings, discussion, and written reports in Spanish. Prerequisite: SP 206 or a 300-level course (may be taken concurrently), NU placement, or permission of the instructor.

**SP 322 Introduction to the Literature of Spain II 3 Credits**

A survey of peninsular Spanish literature from the Modern Age up through the 20th Century. Lectures, readings, discussion, and written reports in Spanish. Prerequisite: SP 206 or a 300-level course (may be taken concurrently), NU placement, or permission of the instructor.

**SP 327 Hispano-American Literature I 3 Credits**

A survey of Hispano-American literature from the pre-Columbian period up through the 19th Century. Lectures, readings, discussion, and written reports in Spanish. Prerequisite: SP 206 or a 300-level course (may be taken concurrently), NU placement, or permission of the instructor.

**SP 328 Hispano-American Literature II 3 Credits**

A survey of Hispano-American literature from the end of the 19th Century up through the 20th Century. Lectures, readings, discussion, and written reports in Spanish. Prerequisite: SP 206 or a 300-level course (may be taken concurrently), NU placement, or permission of the instructor.

**SP 331 Advanced Spanish Composition and Conversation I 3 Credits**

A study of Spanish stylistics, translation into Spanish from modern English texts, oral reports, and discussion in Spanish. Prerequisite: SP 206 or a 300-level course (may be taken concurrently), NU placement, or permission of the instructor.

**SP 332 Advanced Spanish Composition and Conversation II 3 Credits**

A study of Spanish stylistics, translation into Spanish from modern English texts, oral reports, and discussion in Spanish. Prerequisite: SP 206 or a 300-level course (may be taken concurrently), NU placement, or permission of the instructor.

**SP 350 Topics Course 3 Credits**

Specialized topics offered relating to culture, literature, business practices, language, or linguistics. Topic will be indicated in the schedule of classes. May be repeated for credit, as topics vary. May be taught in Spanish or English; see schedule of classes. Classroom: 3 hours. (When taught in English, this course may not count towards fulfilling the foreign language requirement.)

**SP 415 Seminar: Topics in Spanish or Latin-American Literature and Culture 3 Credits**

A study of a particular author, theme, genre, or literary movement including cultural themes. Topic varies each year these courses are offered. Prerequisite: SP300-level course.

**SP 421 Reading and Research in Spanish or Latin-American Literature and Culture 3 Credits**

A report on an approved project of original research in Spanish or Latin-American literature or civilization under the direction of a department member. Limited to students who have demonstrated aptitude for independent work. May be scheduled either or both semesters. Prerequisite: SP300-level course and permission of the department chair and course instructor.

## Athletic Training (ST)

### Courses

**ST 310 Upper Extremity Injuries 3 Credits**

Advanced athletic training course that incorporates areas of assessment/diagnosis, clinical anatomy and biomechanics utilizing evidence-based medicine to provide a comprehensive approach to caring for upper extremity and cervical/thoracic spine injuries. Classroom 3 hours. Prerequisite: SM 220.

**ST 311 Clinical Education in Athletic Training I 2 Credits**

Emphasis will be placed on the application of knowledge and skills introduced in BI 216 (Human Anatomy and Physiology), PE 260 (Personal and Community Health), and SM 220 (Care and Prevention of Athletic Injuries). This course will also provide the opportunity for students to further develop clinical proficiencies introduced in preceding courses. Supervised practicum in an athletic training setting. Class meets for 2 hours/week utilizing lecture, demonstrations and hand-on instructional techniques plus Clinical Rotation (average 4 hours/week). Prerequisites: SM 226 and SM 220, PE 260 and BI 216. Open only to declared Sports Medicine-Athletic Training Concentration students.

**ST 320 Lower Extremity Injuries 3 Credits**

Advanced athletic training course that incorporates areas of assessment/diagnosis, clinical anatomy and biomechanics utilizing evidence-based medicine to provide a comprehensive approach to caring for lower extremity, pelvis and lumbar spine injuries. Classroom 3 hours. Prerequisite: SM 220.

**ST 321 Clinical Education in Athletic Training II 2 Credits**

Emphasis will be placed on the application of knowledge and skills introduced in PE 365 (Kinesiology) and ST 310 (Upper Extremity Injuries). This course will also provide the opportunity for students to further develop clinical proficiencies introduced in preceding courses. Supervised practicum in an athletic training setting. Class meets for 2 hours/week utilizing lecture, demonstrations and hands-on instructional techniques plus Clinical Rotation (average 4 hours/week). Prerequisites: ST 310.

**ST 410 Clinical Education in Athletic Training III 3 Credits**

Emphasis will be placed on the application of knowledge and skills introduced in PE 371 (Physiology of Exercise), SM 420 (Therapeutic Modalities) and ST 320 (Lower Extremity Injuries). This course will also provide the opportunity for students to further develop clinical proficiencies introduced in preceding courses. Supervised practicum in an athletic training session. Class meets 2 hours/week utilizing lecture, demonstrations and hands-on instructional techniques plus Clinical Rotation (average 7 hours/week). Prerequisites: ST 321 and ST 320, SM 420 and PE 371.

**ST 421 Clinical Education in Athletic Training IV 3 Credits**

Emphasis will be placed on the application of knowledge and skills introduced in SM 422 (Therapeutic Exercise) and SM 437 (Senior Seminar I). This course will also provide the opportunity for students to further develop clinical proficiencies introduced in preceding courses. Supervised practicum in an athletic training setting. Class meets for 2 hours/week utilizing lecture demonstrations and hands-on instructional techniques plus Clinical Rotation (average 8 hours/week). Prerequisites: ST 410, SM 422, PE 371 and SM 437.

## Faculty & Administration

### Faculty

*The year after a name indicates the year hired at Norwich University; the date after the academic title indicates year of that title; the year after each degree indicates the year the degree was earned.*

DEBORAH AHLERS (1991) Head of Reference and Interlibrary Loan Services with Rank of Assistant Professor (1991); B.A., 1989, SUNY Binghamton; M.L.S., 1991, SUNY Albany.

AKHAN ALMAGAMBETOV (2013) Lecturer in Computer Science and Computer Security & Information Assurance (2013); B.S. 2008, Norwich University; M.S. 2011, Syracuse University; Ph.D. 2013, Syracuse University.

CARA ARMSTRONG (2011) Visiting Professor of Architecture (2011), Director of the School of Architecture & Art (2013); B.E.D. (1991) Miami University; B. Phil. (1991) Miami University; M.F.A. (2013), Drew University; M.Arch. (1994), Columbia University.

NADIA AL-AUBAIDY (2014) Assistant Professor of Civil Engineering (2014); B.Sc. 1998, M.Sc. 2005, University of Technology Iraq; Ph.D. 2014, University of Texas at Austin.

MICHAEL C. ANDREW (1993) Associate Professor of Political Science (2002); B.A. 1986, de Sales University M.A. 1990; Ph.D. 1994, SUNY Binghamton.

JIMMY L. ANDERSON Major, Field Artillery, U.S. Army, Assistant Professor of Military Science (Executive Officer) (2011); B.A., 1996, Metropolitan State College of Denver; M.H.R. 2003, University of Oklahoma, 2008, U.S. Army Command General Staff College Intermediate Level Education

ELISABETH ATEMS (2014) Lecturer of Physics (2014); A.B., 1977, University of Michigan, Ph.D. 1993, Wayne State University.

JASON BALDWIN (2008) Associate Professor of Studio Art (2008); B.F.A., 2001, University of Louisiana at Lafayette, M.F.A., 2004, University of Mississippi.

RAMON BALLESTER III (2013) Marine Officer Instructor (2013); B.S. 2005, San Diego State University; Captain, U.S. Marine Corps.

CAROLE L. BANDY (1995) Professor of Psychology (2012); B.A. 1970, Rhodes College; M.S. 1973, University of Memphis; Ph.D. 1989, George Washington University.

WILLIAM H. BARNARD (1974) Professor of Biology (1992); B.A., 1968, Franklin College; Ph.D. 1979, Indiana University.

NARAIN D. BATRA (1986) Professor of Communications (1990); B.A. 1956, Punjab University; M.A. 1958, Delhi University; Ph.D. 1980, Gujarat University.

JANICE BEAL (2006) Coordinator of Public Services with rank of Assistant Professor (2006); B.A. 1974, University of Illinois; MSLA, 1975, University of Illinois.

NAJIBA BENABESS (2007) Associate Professor of Economics (2012), Director of the School of Business and Management (2012); B.S. 1997, University of Mohammed Fifth Rabat; M.A. 2000, Western Illinois University; Ph.D. 2007, University of Wisconsin.

JACQUES N. BENEAT (2002) Associate Professor of Electrical and Computer Engineering (2002); DEA, 1990, Universite de Brest; Ph.D., 1993 Worcester Polytechnic Institute; Doctorate, 1994, Universite de Bordeaux.

NATALIA F. BLANK (2005) Associate Professor of Chemistry (2011); B.S., M.S. 1996, Nizhegorod State University; Ph.D., 2005 Dartmouth College.

DAVID J. BLYTHE (1991) Associate Professor of Management (2010); B.S. 1981, Rutgers University; J.D. 1986, Vermont Law School.

MATTHEW W. BOVEE (2010) Lecturer in Computer Security & Information Assurance; B.S. 1981, Arizona State University; M.A. 1986, The University of Kansas; Ph.D. 2004, The University of Kansas.

ERIC W. BRIGHAM (2014) Professor of Military Science and Commanding Officer Army ROTC (2014); B.S. 1988, Norwich University; M.S. 2000, Central Michigan University; M.S. 2009, National War College; Colonel, U.S. Army.

JOHN BROOM (2006) Associate Program Director of Academics, M.A. in Military History program (2008); B.A. 1976, University of Minnesota; M.A. 1989, Norwich University Ph.D. 1993, Union Institute.

SHERI BROWN (2003) Assistant Professor of Nursing (2010); B.S.N 2001, Norwich University; MSN, 2006 SUNY, Stony Brook.

ROWLAND BRUCKEN (2001) Professor of History (2013); Chair of Department of History and Political Science (2011); B.A. 1991, College of Wooster; M.A. 1993, and Ph.D. 1999, Ohio State University.

KENNETH W. BUSH (1986) Professor of Communications (2001); B.A. 1980 and M.A. 1982, Brigham Young University.

ANNE BUTTIMER (2004) Lecturer of Criminal Justice (2010); B.S. 1979, Northeastern University; M.A. 1982, Anna Maria College; J.D. Vermont Law School 1993.

DIANE BYRNE (2002) Associate Professor of Psychology and Education (2008), Director of the Teacher Education Program (2002); B.S. 1973, Wright State University; M.Ed. 1991 University of Vermont; National Board Certified Teacher (2000); Ph.D. 2008, Union Institute and University.

JOSEPH E. BYRNE (1973) Professor of Chemistry (1989), Associate Vice President for Academic Affairs (2006); B.A., 1967, LaSalle College; M.S., 1970, Ph.D., 1972, University of Maine.

HELEN SUE CAUDILL (1984) Professor of English and Theater (2000); Director of Pegasus Players, (1984); B.A. 1977, Catawba College; M.A. 1979, Pennsylvania State University; Ph.D. 1988, University of Pittsburgh.

FRANCES S. CHEVALIER (1990) Professor of French (2005); Chair of Department of Modern Languages (2014); B.S. 1969, Douglass College; M.A. 1979, Rutgers University; Ph.D. 1995, Rutgers University.

HARRY D. CHRISTMAN (2013) Assistant Professor of Biology (2013); B.S., 2002, University of Illinois; Ph.D., 2011, University of California, Davis.

ALEX W.H. CHUNG (2013) Assistant Professor of Economics and Finance (2013); B.A. 1992, Chinese Culture University; M.A. 1995, Chinese Culture University; M.A. 1998, Drexel University; M.A. 2001, City University of New York; Ph.D. 2009, City University of New York.

MURRAY R. CLARK (2012) Dean of National Services (2014); Professor of Aerospace Studies and Commanding Officer Air Force ROTC (2012); B.S., 1987, United States Air Force Academy; M.A., 1996, University of Notre Dame; Colonel, U.S. Air Force.

WILLIAM H. CLEMENTS (1987) Professor of Criminal Justice (2001); Vice-President for Academic Affairs (2011), Dean of the College of

Graduate and Continuing Studies (2005); B.S. 1980, Clarkson University; M.A. 1982 and Ph.D. 1987, University of Delaware.

JAMES CLOSE (2014) Military Science Instructor (2014); Sergeant First Class, U. S. Army.

JOSE A. CORDOVA (2008) Director, Master of Business Administration (2008); M.A. Administrative Studies, 1978, Ohio University; M.A. Economics, 1979, Ohio University; Ph.D. 1987, Ohio University.

FRANCIS BRETT COX (2002) Associate Professor of English (2008); B.A. 1981, University of South Carolina; M.A. 1984, University of South Carolina; Ph.D. 1992, Duke University.

WENDY COX (2000) Associate Professor of Architecture (2010); B.S. 1981, Miami University (Ohio); M. Arch. 1989, Colorado State University. Registered Architect.

ELEANOR D'APONTE (2000) Assistant Professor of Architecture (2004); B.A. 1988, Barnard College; M.Arch 1991 University of Virginia. Registered Architect.

THOMAS J. DESCOTEAUX (2002) Professor of Civil Engineering (2007), Director of Master of Civil Engineering (2004); Master of Science in Business Continuity programs (2011); B.S., 1985, M.S., 1987 and Ph.D., 1992, The University of Connecticut. Registered Professional Engineer.

MEGAN A. DOCZI (2011) Assistant Professor of Biology (2011); B.A., 2003, Drew University; Ph.D., 2010, University of Vermont.

RICHARD K. DUNN (2000) Charles A. Dana Professor of Geology (2014); B.A., B.S., 1987, University of Minnesota Duluth; M.S., 1990, Wichita State University; Ph.D., 1998, University of Delaware.

JAMES EHRMAN (2004) Director, Master of Arts in Military History (2006) and Master of Arts in History programs (2011); B.A. 1991, Creighton University; M.A., 1997, and Ph.D. 2006, Kansas State University.

WILLIAM ESTILL (1987) Professor of Communications (2001); B.A. 1976, Loyola University; M.A. 1978, Loyola Marymount University.

MARSHA DELAINE FARNUM (2011) Lecturer in Nursing (2011); B.A., 1975 University of South Florida, M.S.N. 2011, Liberty University.

JAMES FEICCABRINO (2013) Assistant Professor of Aerospace Studies (2013); B.A. 2007, Washington University; M.S. 2009, Lulea University of Technology; Lic. D, 2012 Lulea University of Technology; Lieutenant, U.S. Air Force.

DAVID FEINAUER (2012) Lecturer in Electrical and Computer Engineering (2012); B.S. 2003, University of Kentucky; Ph.D. 2011, University of Kentucky. Registered Professional Engineer.

PATRICIA FERREIRA (1996) Professor of English (2012); B.A. 1982, Keene State College; M.A. 1988, University of Vermont; Ph.D. 1996, McGill University.

STEPHEN L. FITZHUGH (2002) Professor of Electrical and Computer Engineering (2014), Director of the David Crawford School of Engineering (2014); B.S., 1975, Worcester Polytechnic Institute; M.S.E.E., 1988, M.S.C.S., 1998, Ph.D. 2004, Rensselaer Polytechnic Institute. Registered Professional Engineer.

KEVIN FLEMING (2006) Professor of Psychology (2009); Interim Chair of Department of Psychology and Education (2014); B.A. 1985, Lehigh University; M.A. 1987, Ph.D. 1990, University of New Hampshire.

CHRISTOPHER E. FOURACRE (2013) Assistant Professor of Military Science (2013); B.A. 2001, Castleton State College; Major, U.S. Army.

CATHY M. FREY (1985) Professor of Mathematics (2001); B.S., 1983, M.S., 1985, University of Vermont.

DANNER FRIEND (2003) Associate Professor of Mechanical Engineering (2003); B.S., 1987, Virginia Military Institute, 1991, M.S., Clemson University, Ph.D., 1999, Texas A& M. Registered Professional Engineer.

SETH FRISBIE (2006) Associate Professor of Chemistry (2014), Director of Introductory Chemistry Labs; B.S., 1986, University of Massachusetts; M.S., 1989, Cornell University; Ph.D., 1992, Cornell University.

NATHAN L. GAINES (2013) Military Science Instructor (2013); B.A., 2008, Columbia Southern University; Master Sergeant, U.S. Army.

JASON GALLIGAN-BALDWIN (2008) Associate Professor of Art (2008); B.F.A. 2001, University of Louisiana; M.F.A. 2004, University of Mississippi.

EMILY GRAY (2007) Associate Professor of History (2013); B.A. 1996, University of Utah; Ph.D. 2004, University of Pennsylvania.

LAURIE GRIGG (2011) Lecturer in Geology (2011); B.S., 1991, Colorado College; Ph.D., 2000, University of Oregon.

ELIZABETH GURIAN (2011) Assistant Professor of Criminal Justice (2012); B.S. 2001, Boston University; M.S. 2006, Northeastern University; Ph.D. 2012, University of Cambridge (UK).

ETHAN GUTH (2011) Assistant Professor of Chemistry (2011); B.S., 1999, Goucher College; Ph.D., 2007, University of Vermont.

JEREMY A. HANSEN (2010) Assistant Professor of Computer Science (2010); B.S. 1998, University of Wisconsin Madison, M.S. 2005, University of Wisconsin Milwaukee; Ph.D. 2009, University of Wisconsin Milwaukee. Certified Information Systems Security Professional.

LISA HARDY, Lecturer in Nursing (2014); B.A., 1988, University of Michigan; M.S.N. 2004, Yale University.

KATE T. HEALY (2011) Assistant Professor of Nursing (2011), B.S.N. 2003, University of Pennsylvania; M.S.N. 2007, University of Pennsylvania.

PHILIP S. HEIL (2014) Military Science Instructor (2014); Sargent First Class, U. S. Army.

EDUARDO H. HERNANDEZ (1979) Associate Professor of Sports Medicine (1988); B.S., 1972; B.A., 1981, and M.Ed., 1976, Norwich University; M.A. 1986, Middlebury College.

KAREN L. HINKLE (2003) Associate Professor of Biology (2009); B.S., 1995, University of California; Ph.D., 2002, University of Michigan.

AMY M. HOELTGE (2009) Lecturer in Chemistry (2009); B.S., 2000, Framingham State College; Ph.D., 2007, University of Vermont.

MICHAEL COURTNEY HOFFMAN (1991) Associate Professor of Architecture (1997); B.A., 1976, St. Lawrence University; M. Arch., 1986, University of Virginia. Registered Architect.

WALTER J. HOOPER (2013) Military Science Instructor (2013); B.S., 2007, Campbell University; Master Sergeant, U. S. Army.

MARY E. HOPPE (1981) Professor of Chemistry (1995), Chair of Department of Chemistry and Biochemistry (2006); B.A., 1973, College of St. Teresa; M.S., 1975, University of Michigan.

LAUREN D. HOWARD (1976) Professor of Biology (1993); B.A., 1971, Hartwick College; Ph.D., 1979, University of Vermont.

RICHARD A. HYDE (1989) Associate Professor of Physics (1993); Chair of the Physics Department (2012); B.A., 1968, College of Wooster;



M.S., 1973, University of Minnesota; M.S., Ph.D., 1982, University of Wisconsin.

JASON F. JAGEMANN (2000) Associate Professor of Political Science (2006); B.A. 1993, SUNY Potsdam; M.A. 1995, Ph.D. 2000, Western Michigan University.

GREGORY A. JANCAITIS (2014) Lecture in Sports Medicine (2014); B.S., 2005, University of New England; M.Ed., 2006, University of Virginia.

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WADE SMITH (2014) Adjunct Professor of Sociology; B.A. 2005, Thomas Edison State College; M.A. 2012, University of Colorado Boulder; ABD August 2014, University of Colorado Boulder.

KAREN STEWART (2004) Adjunct Professor of English; B.A. 1994, University of Vermont; M.A. 1996, University of Vermont.

C. DART THALMAN (2000) Adjunct Professor of Political Science (2012); B.A. 1966, University of Utah; M.A. 1967, M.A.L.D. 1969, Ph.D. 1979, Fletcher School of Law and Diplomacy, Tufts University.

FIANNA VERRET (2013) Adjunct Professor of Management; B.A. 2000, Saint Michael's College; M.A. 2006, Norwich University.

TRINA KAE YOUNG (2014) Adjunct Professor of German; B.A. 1999, Brigham Young University; M.A. 2003, Brigham Young University; Ph.D. 2011, University of Utah.

RAYMOND P. ZIRBLIS (2001) Adjunct Professor of History (2001); B.A. 1976, Goddard College; M.S. 1986, University of Vermont.

## Professors Emeriti

***The dates after names indicate years of full-time service to Norwich University.***

ARNOLD J. AHO (1990-2007) Charles A. Dana Professor Emeritus of Architecture B.S., 1965 and B.Arch., 1966, Rensselaer Polytechnic Institute; M.Arch., 1971, University of Pennsylvania. Registered Architect.

ROY DUANE BAIR (1973-2003) Professor Emeritus of Biology B.S., 1965, Norwich University; M.S., 1968 and Ph.D., 1973, University of Cincinnati.

JOHN DONALD BARON (1976-2002) Professor Emeritus of Civil Engineering B.S.C.E., 1965, M.S.C.E., 1967 and Ph.D., 1973, Purdue University. Registered Professional Engineer.

PETER NEVIUS BARTRAM (1985-2009) Professor Emeritus B.S., 1967, Michigan State University; M.Sc., 1969 and Ph.D., 1974, The Ohio State University. Registered Professional Engineer.

JAMES RICHARD BENNETT (1983-2008) Professor Emeritus of Music B.S. 1965, Gorham State College; M.M. 1966, University of Michigan.

LEROY C. BUTLER (1977-2005) Professor Emeritus of Chemistry B.S., 1960, Wake Forest College; Ph.D., 1966, University of Vermont.

EDWARD M. CARNEY (1972-2013) Charles A. Dana Professor Emeritus of Biology (2003); B.S., 1965, Southern Connecticut State College; M.S., 1969, University of Montana; Ph.D., 1973 University of New Hampshire.

ELIZABETH ANN CARNEY (1981-1998) Professor Emeritus of Nursing B.S., 1963, Southern Connecticut State University; M.Ed., 1977, St. Michael's College; M.S.N., 1988, Southern Connecticut State University.

KENNETH W. CARTER (1981-1992) Professor Emeritus of Graduate Studies A.B., 1952, Antioch College; M.A., 1957, Columbia University; Ph.D., 1971, Ohio State University.

JAMES EDWARD CATONE (1967-2002) Professor Emeritus of Psychology and Education B.S. 1962, SUNY at Albany; Ed.D. 1965, SUNY at Buffalo; D.Ed. 1976, University of Massachusetts.

CHARLES ELWOOD CHEVALIER (1967-1990) Professor Emeritus of Mechanical Engineering B.S., 1952 and M.S., 1960, Pennsylvania State University.

LOUISE JANZ DAVIS (1972-1989) Professor Emeritus of Nursing Diploma, 1954, Trinity Hospital School of Nursing; B.S.N., 1955, Capital University; M.A., 1957, Columbia University.

MARY ELLEN DAWSON (1977-1998) Professor Emeritus of Nursing B.S.N., 1971 and M.S.N., 1973, University of Maryland School of Nursing.

EARL LEON FECHTER (1976-2006) Professor Emeritus of Studio Arts B.S., 1959, SUNY at Buffalo; B.F.A., 1964 and M.F.A., 1966, Boston University.

SCOTT C. FIELDS (1978-2013) Professor Emeritus of English; B.A. 1968, Williams College; M.F.A. 1970, Columbia University; Ph.D. 1979, New York University.

ROBERT W. GOODRICH (1997-2005) Professor Emeritus of Electrical Engineering B.S.E.E., 1957, University of New Hampshire; MS.E.E., 1958, Purdue University; Ph.D., 1970 Western Reserve University. Registered Professional Engineer.

KEITH ALAN GOULD (1973-2004) Professor Emeritus of English; B.A. 1963, University of Vermont; M.A. 1966, University of Connecticut; Ph.D. 1973, Pennsylvania State University.

ELLEN HALL (2002-2011) Librarian Emeritus B.A., 1969, University of Minnesota; M.L.S., 1970 University of Minnesota.

JOSEPH JAMES HEED (1962-1997) Professor Emeritus of Mathematics B.S., 1954, United States Military Academy; M.S. 1961, St. John's University; D.Sc., 1965, l'Universite de Nancy.

RICHARD W. HERRMANN (1981-2000) Professor Emeritus of Liberal Studies A.B., 1954, Union College; A.M., 1955; and Ed.D., 1974, Harvard University.

JOHN HURD, II (1978-2010) Professor Emeritus of Economics, B.A., 1959, Yale University; Ph.D., 1969, University of Pennsylvania.

LINDA KARCH (1988-2013) Professor Emeritus of English; B.A. 1981, Millikin University; M.A. 1984, University of Illinois at Champaign-Urbana; Ph.D. 1992, Texas Christian University.

MARY PATRICIA KENNEDY (1972-1994) Professor Emeritus of Management B.S., 1951, Trinity College; M.A.T., 1961, St. Michael's College; Ed.D., 1985, Nova University.

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FRIEDA HERTHA KLOECKNER (1967-1991) Professor Emeritus of Modern Languages B.S. 1951, University of Wisconsin; M.A. 1955, Indiana University.

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JAN PURDUM McCLEERY (1972-2005) Professor Emeritus of Physical Education B.S., 1963, Kent State University; M.Ed., 1967, University of Pittsburgh.

JOSEPH WHITON McDANIEL (1970-1999) Professor Emeritus of Biology B.A., 1957, Bowdoin College; M.S., 1965 and Ph.D., 1968, University of Massachusetts.

CHRISTOPHER D. MORRIS (1973-2010) Professor Emeritus of English; B.A. 1966, Swarthmore College; M.A. 1971, and Ph.D. 1972, SUNY Buffalo.

JOAN MARY MUSSMACHER (1972-2000) Professor Emeritus of Physical Education B.S., 1957, Boston University; M.S., 1978, Northeastern University.

HENRY VICTOR MUSE (1978-1996) Professor Emeritus of Political Science B.A. 1960 and M.A. 1965, Boston University; M.A. 1971 and Ph.D. 1974, Syracuse University.

MANUEL NUNEZ-de-CELA (1977-1999) Professor Emeritus of Spanish; Bachillerato 1950, Universidad de Murcia; Licentiate in Law 1957, Universidad de Salamanca; M.A. 1966, Middlebury College; Ph.D. 1974, University of Toronto.

GARY D. PARKER (1978-2013) Charles A. Dana Professor Emeritus of Physics (2007); B.A., 1965, Dartmouth College; M.S., 1970, University of Colorado; Ph.D., 1973, University of Denver.

CARLOS F. A. PINKHAM (1982-2009) Professor Emeritus of Biology B.S., 1965, Norwich University; M.S., 1969 and Ph.D., 1971, University of Illinois.

EDWARD LAMBERT RICHARDS, JR. (1970-1997) Professor Emeritus of English; B.A. 1953, Yale University; M.A. 1960, Columbia University; Ph.D. 1975, New York University; CDR, USNR (Ret.).

ANITA FREGOSI RISTAU (1972-1993) Professor Emeritus of Nursing B.S.N., 1959, University of Vermont; M.S., 1977, St. Michael's College.

ROBERT THOMAS ROTONDI (1977-2010) Professor Emeritus of Accounting, B.S., 1969 and M.B.A., 1971, Fordham University. Certified Public Accountant. Certified Fraud Examiner.

ROBERT EDWARD SCHMIDT (1981-2009) Professor Emeritus of Architecture B.S.C.E., 1968, Newark College of Engineering; M.S., 1979, University of Vermont.

T. GENE SESSIONS (1974-1998) Professor Emeritus of History; B.A. 1959 and M.A. 1963, Southern Methodist University; Ph.D. 1974, American University.

EUGENE ANTHONY SEVI (1975-2013) Professor Emeritus of Civil Engineering; Sc.B., 1968, Brown University; M.S., 1969, University of Colorado. Registered Professional Engineer; Diplomat, American Academy of Environmental Engineers.

GEORGE LEROY SHELLEY III (1978-2005) Professor Emeritus of Linguistics and Anthropology; A.B. 1951, Duke University; M.S. 1959,



Georgetown University; Ph.D. 1978, Hartford Seminary Foundation; COL, USMC (Ret.)

JOHN BELMONT STEVENS (1979) Professor Emeritus of Civil Engineering B.S.C.E., 1964, Norwich University; M.S.C.E., 1966, West Virginia University. Registered Professional Engineer.

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ANN BESSARAB TURNER (1961-1990) Librarian Emeritus B.A., 1944, Skidmore College; M.L.S., 1945, Columbia University.

DOUGLAS FRANCIS WHITE (1982-1992) Professor Emeritus of Mechanical Engineering B.S. 1947 and B.M.E. 1948, Rensselaer Polytechnic Institute; Ph.D., 1958, Pennsylvania State University. Registered Professional Engineer.

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MARGARET BLACKBURN WHITE (1981-1992) Professor Emeritus of Graduate Studies B.A., 1956, Maryville College; M.A., 1966 and Ph.D., 1968, University of Rochester.

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## Alumni Association

### Vision

We are committed to creating a unified, informed, and proud body of alumni who will collectively involve themselves with the interests and activities that perpetuate Norwich University and the Norwich family.

### Mission

Our mission is to understand the various needs of our members and the Norwich Family, in order to develop and support meaningful programs and services that will enhance the value of being a Norwich alumnus.

### General

The Norwich University Alumni Association was founded in 1856 and serves the University in an advisory capacity. The board represents a broad range of alumni who contribute their time and talents to supporting the work of the Alumni Office and Norwich University. The Alumni Association represents the more than 20,000 living alumni of Norwich University. The Association directs the programs designed to foster the continued participation of alumni in the activities of their alma mater. These programs include the annual Homecoming Weekend, the class agent system, coordination of a nationwide system of regional alumni clubs, and cooperation in both the admissions ambassadors and the alumni career network programs. Graduates from the university automatically become lifetime members of the Association and are able to participate in all of the programs available to every alumnus.

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