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School of Architecture and Art

Dean: Arthur Schaller

The School of Architecture and Art is comprised of faculty teaching in Architecture, Art History, and Studio Art.

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. 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.

Architecture:

The Architecture Program Director Associate Professor David Woolf.

The Director of Graduate Architecture is Associate Professor Michael Hoffman.

Professor Schmidt; Associate Professors Hoffman, Schaller, Schrenk, Woolf; Assistant Professors Cox, D'Aponte, Lutz, Sagan and van Aalst; Adjunct Professors Anderson, Leytham and Wolfstein.

About fifty years ago, the Dutch architect Aldo van Eyck observed, "Whatever space and time mean, place and occasion mean more. For space in the image of man is place, and time in the image of man is occasion". Two important contextual factors have had continuing influences on the evolution of the Architecture Program's mission. The first of these is this place called Norwich.

Founded by Alden Partridge in the early nineteenth-century, the university pioneered the idea of an "American System of Education". This system recognizes the importance of experiential learning as part of the educational process. The second is this place called Vermont. Not only is it a state recognized internationally for maintaining the strong bond between people and the land, but also as a place where the craftsman's skill and creative expression are still esteemed. The program strives to understand this power of place to shape human ecology and to understand how humans in turn shape the place.

Norwich University offers a Master of Architecture professional degree. The Masters degree will be awarded upon the successful completion of a five and one-half years curriculum. The successful student will also receive a B.S. in Architectural Studies at the completion of their first four years. The combined curriculum is accredited by the National Architectural Accrediting Board (NAAB).

The faculty of the Architecture Program have conscientiously designed and detailed the curriculum to create a professional learning experience that will better prepare graduates for the practice of architecture in the new millennium. The curriculum 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. Within the program, experiential learning goes beyond merely developing skills. Reflection is the other half of this kind of learning process. We are concerned with all the dimensions of

making and meaning.

The first four years of the curriculum lead to a Bachelor of Science in Architectural Studies and offer the students an opportunity to pursue a minor in another field. At the successful completion of the fourth year, all students meeting the degree requirements will be awarded a Bachelor of Science in Architectural Studies Degree. Attaining this degree is a requirement for entering the Masters program. Admission into the Masters of Architecture is not automatic. In their fourth-year, students must submit a portfolio of their studio work for review and approval by an architecture faculty committee. This threshold also requires a minimum university GPA of 2.50 and a GPA of 2.75 for all design studio courses. The Masters' program offers graduate-level professional electives as well as the opportunity to undertake a thesis, or another kind of capstone project, of one's own choosing. Perhaps the most exciting and innovative aspect of the Masters' curriculum is the requirement of an architectural internship in the summer between the fourth and fifth years. For this practicum, students will be required to locate and work in an architecture office (or in another design-related firm). The course work will be completed on-line using distance-learning techniques, which will not only permit students to work in locations of their choosing, but will also give each individual experience in digital communications and technologies which are major evolving aspects of architectural practice today.

The curriculum features the use of threshold points and portfolio reviews for each student in order to better identify individual career objectives as well as to assure the high academic caliber of every Norwich graduate.

Graduates from other colleges are not being accepted into the Master of Architect Program; transfers are accepted into the B.S. in Architectural Studies and are governed under existing university undergraduate academic regulations (including 60 percent of credit hours being earned at Norwich). The Masters of Architecture Program does not accept transfer credit at the 500 level. Students have an opportunity to spend a semester abroad on approved exchange programs, such as at Hochschule Wismar in Germany, the DIS Program in Copenhagen, Denmark, the Lexia Program in Berlin, Germany and biannual summer study abroad trips, organized by the School, typically earning six credits.

As the digital realm is becoming a prevalent tool in architecture, the School has a wireless network system that allows students to bring their own computer to the design studios. It is important to note that students will be required, in their second year of the Bachelor of Architectural Studies, to bring their own computer (preferably laptop) to the design studio. All work produced by students for class assignments is the property of the School of Architecture and Art and will be returned only at the discretion of the faculty. It is common practice to retain representative student work for exhibition and accreditation purposes. Students are required to maintain a portfolio of their studio work. Any student who receives a grade of 'D' for two sequential, numerical or chronological, design studio courses (including AP111 and AP118) must repeat both of these courses and receive a grade of 'C' or better in both to advance to the next design level.

Statement from the National Architectural Accrediting Board:

"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 US professional degree programs in architecture, recognizes two types of degrees: the Bachelor of Architecture and the Master of Architecture. A program may

be granted a six-year, three-year, or two-year term of accreditation, depending on its degree of conformance with established educational standards. Masters degree programs may consist of a pre-professional undergraduate degree and a professional graduate degree, which, when earned sequentially, comprise an accredited professional education. However, the pre-professional degree is not, by itself, recognized as an accredited degree."

B.S. in Architectural Studies – Curriculum Map

Mission:

To understand the power of place to shape human ecology and to understand how humans shape the place in turn. The School emphasizes the development of leadership and skills in the making of place, and recognizes the need to balance creative, technological and social issues.

First Year

	Credits		Credits
AP111 Fund. of Architecture I	4	AP118 Fund. Architecture II	4
MA107 Precalculus Mathematics	4	MA108 Applied calculus (or MA121or approv Geometry *)	4
EN101 Composition & Literature I	3	EN102 Composition & Lit I	3
HI107 History of Civilization I	3	HI108 History of Civilization II	3
SA103 Introduction to Drawing	3	SA104 Intro to Visual Design or other graphics elective	3
	17		17

Second Year

AP211 Architectural Design I	5	AP212 Architectural Design II	5
FA201 Architecture Hist/Thy I	3	FA202 Architecture Hist/Thy II	3
AP225 Intro to Passive Environ.	3	AP325 Materials, Const. & Design	3
PS201 General Physics I	4	Lab Science	4
General Education Elective	3	General Education Elective	3
	18		18

Third Year

AP311 Architectural Design III	5	AP312 Architectural Design IV	5
AP221 Site Develop. & Design	3	AP222 Human Issues in Design	3
AP327 Active Build. Systems I	3	AP328 Active Building Systems II	3
CE455 Structures I	4	CE456 Structures II	3
FA308 Architecture Hist/THY III	3	FA309 Architecture Hist/Thy IV	3
	18		17

Fourth Year:

AP411 Architectural Design V	5	AP412 Architectural Design VI	5
Elective	3	AP436 Proj. Deliv. & Doc.	4
Architectural Elective **	3	Elective	3
Non Architecture Elective	3	Architectural Elective**	3
Non Architecture Elective	3	Non Architecture Elective	3
	17		18

Minimum Credits in Program 140

General Education Electives (as defined by the university) must include at least one

course in literature, one course in social sciences (sociology, psychology, economics, or political science courses).

Non Architecture Electives may not include any courses with AP prefixes

* IN LIEU OF MA108 OR MA121, an approved geometry course may be substituted.

** Students with a declared minor may substitute required courses in the minor for one or both of these AP electives in fourth year only.

Master of Architecture (NAAB-accredited)

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).

Summer	Credits
AP531 Architectural Internship	6

Academic Year

	Credits	Credits	
AP525 Thesis Research	5	AP526 Architectural Thesis	5
AP5XX Architectural Elective	3	AP533 Professional Practice	3
AP5XX Architecture Elective	3	AP5XX Architecture Elective	3
AP558 Global Issues in Arch	3	AP5XX Architecture Elective	3
	14		14

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

Minor in Architectural Studies

A minor in Architectural Studies has the following course requirements:

AP111, AP118, FA201, FA202 and at least three additional courses with AP prefixes, totaling not less than 8 credit hours. Minimum total credit hours for a minor in Architectural Studies is 18. All courses must be passed with a grade of 'C' or better. Enrollment into courses is subject to availability of space.

Art

Adjunct Professors Anders, Hoag, Kippen, Anne Schaller and Wolfstein.

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 subject matter; and they serve as a vehicle for the expression of political religious ideology. Perhaps most abundantly, the fine arts inform us in tangible ways

of our attempts at reconciliation between ourselves and some concept of a creator, through structures and imagery intended to inspire, persuade, and transform the beholder. In so doing, the arts constitute a significant form of humanistic inquiry affording abundant insights as to what it means to be human.

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 and partially fulfilling requirements for a **minor in art**.

SCHOOL OF BUSINESS AND MANAGEMENT

Dean: Michael Puddicombe

Professors Funkhouser, Hurd, Mohaghegh, Rotondi, and Vanecek; Associate Professors Jolley, Kabay and Puddicombe; Assistant Professors Benabess, Fenner and Yandow; Lecturers: Brady, Huebner, Lewis, Stephenson and Zeedick.

Mission:

The mission of the School of Business and Management is to provide 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.

The School of Business and Management offers the following degrees: B.S. in Management, B.S. in Accounting, B.S. in Computer Science and B.S. in Computer Security and Information Assurance. The B.S. in Management degree requires that students choose one of the following concentrations: Leadership, Marketing, Financial Economics and Computer Information Systems. Masters degrees are offered in Management (MBA) and Computer Security and Information Assurance. Minors are offered in Accounting, Business Administration, Computer Information Systems, Computer Science, Economics, Finance, Marketing, Computer Crime & Forensics and Information Assurance.

Accreditation:

Norwich University, through its School of Business and Management, is nationally accredited by the Association of Collegiate Business Schools and Programs (ACBSP) for the offering of the B.S. in Management and B.S. in Accounting. The mission of the ACBSP is to establish, promote, and recognize educational standards that contribute to the continuous improvement of business education and to recognize business schools that adhere to these standards.

School Requirements (undergraduate degree programs):

A 2.0 cumulative grade point average in major-related courses is required for graduation for all majors in the School of Business and Management. Students majoring in Management and Accounting must earn a grade of "C" or better in AC205, AC206, EC201, and EC202. Students majoring in Computer Science and Computer Security & Information Assurance need to pass IS101 and IS102 with a grade of "B-" or better. Additionally, the following courses need to be passed with a grade of "C-" or better: IS131, IS228 and IS240. In addition to required course work, each student must pass a comprehensive examination during the senior year.

Graduate Programs

The School of Business and Management offers two Master degree programs; Master of Business Administration and Master of Science in Information Assurance through the Online Graduate Programs. Descriptions of these programs and their requirements are written in a separate publication.

Accounting

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	Credits		Credits
EN101 English Comp & Lit	3	EN102 English Comp & Lit.	3
IS120 Business Applications & Problem Solving Techniques	3	***EC106 World Economy	3
***MG101 Intro. to Bus	3	EN112 Public Speaking	3
Lab. Science Elective	4	MA107 Pre Calculus	4
	13	Lab. Science Elective	4
			17
Second Year			
*AC205 Acctg. Prin. (Fin)	4	*AC206 Acctg. Prin. (Mngrl)	4
*EC202 Ec. Prin. (Micro)	3	*EC201 Ec. Prin. (Macro)	3
MA108 Applied Calc	4	EN 204 Professional Writing	3
MA212 Finite Mathematics	3	MG309 Management	3
History Elective	3	QM213 Bu. & Ec. Statistics I	3
	17		16

Third Year			
AC335 Inter. Acctg. I	3	AC336 Inter. Acctg. II	3
Humanities Elective	3	MG310 Prod. & Ops. Mgmt.	3
MG314 Marketing	3	EC310 Money & Banking	3
FN311 Finance	3	**AC419 Taxation I or	
IS 300 MIS	3	AC441 Cost Accounting	3
		PH322 Business Ethics	3
	15		15
Fourth Year			
AC442 Adv. Acctg.	4	AC428 Auditing	3
MG 319 International Business	3	**AC441 Cost Acctg. or	
MG341 Bus. Law I	3	AC419 Taxation I	3
Literature Elective	3	MG346 Bus Law II	3
Elective	3	MG449 Admin. Pol.&Strat	3
		Elective	3
	16		15

*These courses must be completed with a grade of "C" or better.

**Offered alternate years.

***MG 101 and EC 106 must be taken first year. Upper level students without credit for these courses will take replacement Business electives.

Computer Science

The program focuses on the design and software development for computational environments. 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

The Bachelor of Science program in Computer Science provides students with a solid foundation for a broad range of career fields and for entry into graduate degree programs. This intense and challenging program provides extensive preparation in data structures, data systems, and mathematics leading to advanced courses in computer architecture, programming languages, operating systems, computer graphics, software engineering, computer networking and digital systems design. The graduates of this program have the in-depth knowledge of hard ware, 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 advisor from their very first day on campus. The faculty advisor assists in the development of an individualized academic program designed to meet your career goals. The student and the faculty advisor, working together, keep your 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 in the labs.

B.S. in Computer Science – Curriculum Map

First Year	Credits	Credits	
EN101 Comp. and Lit.	3	EN102 Comp. & Lit.	3
MA107 Precalculus	4	MA121 Calculus I	4
IS101 Intro to Informatics I	1	IS102 Intro to Informatics II	1
IS130 Intro. to Computing	3	IS131 Computer Program.	3
Lab. Science Elective	4	History Elective	3
		Elective	3
	15		17
Second Year			
EN203 Adv. Composition	3	IS240 Database Manag.	3
PS211 University Physics I	4	PS212 University Physics II	4
IS228 Data Structures	3	EC201 Macro Economics	3
EE215 Fund Digital Systems	4	QM213 Bus & Ec Statistics 1	3
MA122 Calculus II	4	Human./Soc. Sci. Elective	3
	18		16
Third Year			
CP321 Comp. Org. & Prog	4	CP337 Operating Systems	3
IS301 Software Engineering I	3	IS302 Software Engin. II	3
MA306 Discrete Math	3	Elective	3
MG309 Management of Organ	3	Human./Soc. Sci., Elective	3
AC205 Princ. Accounting		Elective	3
or EC202	3-4		
	16-17		15
Fourth Year			
CP423 Comp. Architecture	3	IS440 Software Engin. III	3
CP408 Prog. Languages	3	**Math Elective	3
IS455 Contemporary Issues	3	Human./Arts. Elective	3
Elective	3	Elective	3
Literature Elective	3	Elective	3
	15		15

**Math Elective: MA310, MA370, MA380, MA390 NOTE: Students will need to use elective courses to meet prerequisites for MA 310, 370 and 390.

Computer Security and Information Assurance

CENTER OF ACADEMIC EXCELLENCE

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.

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 multi-disciplinary 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.

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. in Computer Security and Information Assurance – Curriculum Map

First Year	Credits		Credits
CJ101 Introduction Criminal Law	3	CJ102 Substantive Criminal Law	3
EN101 Composition & Literature	3	EN102 Composition and Lit	3
IS101 Informatics I	1	IS102 Informatics II	1
IS130 Introduction Computing	3	MG101 Intro to Business	3
History Elective	3	IS131 Computer Programming	3
		MA107 Pre-Calculus	4
	13		17
Second Year			
CJ341 Cyberlaw and Cybercrime	3	IS240 Database Management	3
MA240 Number Theory	3	MA318 Cryptology	3
IS228 Intro to Data Structures	3	PY240 Introduction Soc. Psych.	3
PY211 Introduction Psychology	3	QM213 Business Stat.	3
Lab Science Elective	4	Lab Science Elective	4
	16		16
Third Year			
EN204 Prof. and Tech Writ.	3	CP337 Operating Systems	3
IS301 Software Engineering I	3	IS302 Software Engineering II	3
IS340 Information Assur I	3	IS 342 Information Assur II	3
EN112 Public Speaking	3	IS460 Networking	3
AC201 Accounting	3	EC201 Macro Economics	3
	15		15

Fourth Year

CP431 Network Security	3	CJ442 Computer Forensics	3
MG309 Management	3	MG310 Prod. and Operat.	3
**Comp. Elective	3	Arts/Hum Elective	3
Literature Elective	3	Elective	3
IS455 Contemporary Issues	3	Elective	3
	15		15

*MG101 must be taken during the first year. Upper level students without credit for MG101 substitute a School of Business elective.

**Computer Elective: One of MA380, any 3 credit course with IS prefix, any 3 or 4 credit courses with CP prefix, EE215 or EE242.

Engineering Management

(Construction Concentration)

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 Engineering 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 Engineering 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 Engineering Management, are prepared to sit for the Certified Associate in Project Management (CAPM) and/or the Engineering Management Certification Fundamentals (EMCF) exams, and have a foundational understanding of:

- building materials
- electrical, plumbing, heating, ventilating and air conditioning systems
- economics
- accounting
- law
- information technology
- supply chain integration
- stakeholder management
- emerging structures and issues
- risk management
- time and cost estimation
- materials management
- global sourcing

B.S. Engineering Management – Curriculum Map (construction concentration)

First Year	Credits		Credits
EG109 Intro Engineering I	3	EG110 Intro Engineering II	3
EN101 Composition & Literature	3	EC202 Micro Economics	3
GL110 Introduction Geology	4	EN102 Comp & Literature II	3
MA107 Precalculus	4	EN112 Public Speaking	3
		MA108 Applied Calculus	4
	14		18
Second Year			
AC201 Introduction Accounting	3	AP325 Mat., Const., & Des.	3
AP225 Passive Envir Systems	3	CE212 Site Engineering	3
CE211 Surveying	3	EC201 Macro Economics	3
CH103 General Chemistry I	4	EN204 Technical Writing	3
PS201 General Physics I	4	QM213 Statistics	3
	17		15
Third Year			
AP327 Active Bld Syst I	3	AP328 Active Bld Syst II	3
CE351 Statics & Str of Materials	4	CE464 Specs & Estimating	1
CE460 Construction Management	3	EM301 project Management	3
FN311 Finance	3	MG309 Org. Management	3
MG341 Business Law	3	MG310 Operations	3
		Humanities Elective	3
	16		16
Fourth Year			
CE321 Materials Lab	1	CE456 Structures II	3
CE455 Structures I	3	EM402 Const. Mgt Practices	3
EG450 Professional Issues	3	HI XXX History Elective	3
EM302 Supply Chain Management	3	IS300 Management Info Systems	3
MG314 Marketing	3	MG351 Organizational Behavior	3
Literature Elective	3		
	16		15

Management

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, and Marketing. 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, Financial Economics, Leadership, or Marketing.

B.S. in Management – Curriculum Map

First Year	Credits		Credits
EN101 Comp & Literature	3	EN102 Comp & Literature	3
IS120 Bus. Appl. & Prob. Solving Techniques	3	*EC106 World Economy	3
*MG101 Intro. to Bus	3	Lab. Science ElectivE	4
Lab. Science Elective	4	MA107 Pre Calculus	4
	13	History Elective	3
			17
Second Year			
**AC205 Acctg. Prin. (Fin)	4	**AC206 Acctg. Prin. (Mgrl)	4
**EC202 Ec. Prin. (Micro)	3	**EC201 Ec. Prin. (Macro)	3
MA108 Applied Calculus	4	EN204 professional Writing	3
EN112 Public Speaking	3	MA212 Finite Mathematics	3
Humanities Elective	3	QM213 Bu. & Ec. Statistics I	3
	17		16
Third Year			
MG309 Management	3	MG310 Prod. & Ops. Mgmt	3
MG314 Marketing	3	EC310 Money & Banking	3
FN311 Finance	3	Concentration Elective	3
PH322 Business Ethics	3	Concentration Elective	3
Literature Elective	3	IS300 MIS	3
	15		15
Fourth Year			
MG341 or EC331	3	MG449 Admin. Pol. & Strat.	3
Concentration Elective	3	Concentration Elective	3
Concentration Elective	3	Concentration Elective	3
Elective	3	Elective	3
MG 319 Intern. Business	3	Elective	3
	15		15

*MG101 and EC106 must be taken first year. Upper level students without credit for

these courses will substitute additional School of Business electives.

**These courses must be completed with a grade of "C" or better.

Concentrations

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, Financial Economics, Leadership, or Marketing.

Concentration electives must be chosen from the following list: AC, MG, IS, EC, FN, QM, CP, MA240, MA318, MA370, CJ442, PY210 and all modern foreign language courses.

Leadership Concentration

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

- PY210 Psychology of Leadership
- MG351 Organizational Behavior
- MG408 Human Resources Management
- MG409 Organizational Leadership
- EN244 Literature of Leadership (replaces literature elective)
- Elective
- Elective

Marketing Concentration

The Norwich University's School of Business and Management concentration in Marketing prepares students for careers in the dynamic and exciting fields of brand management, advertising, marketing research, and web marketing. Four critical courses make up the concentration: Advanced Marketing Strategy, Consumer Behavior, Integrated Marketing Communications, and Applied Marketing Research.

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

- MG411 Consumer Behavior
- MG441 Integrated Marketing Communication
- MG416 Advanced Marketing
- QM370 Quantitative Methods for Marketing & Finance
- MG426 Marketing Research
- Elective

Financial Economics Concentration

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

- FN407 Advanced Finance
- FN412 Investments
- EC419 International Economics
- QM370 Quantitative Methods for Marketing & Finance
- Elective
- Elective

Computer Information Systems Concentration

The concentration in Computer Information Systems (CIS) is designed to equip management majors 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.

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.

CIS Concentration Courses

- IS130 Programming
- IS131 Advanced Programming
- IS301 Software Engineering
- IS342 Management of Information Assurance
- Elective
- Elective

Minors in the School of Business and Management:

1. Accounting

Students must complete all of the following courses with a grade of “C” or better:

AC205 Financial Accounting

AC206 Managerial Accounting

AC335 Intermediate Accounting I

AC336 Intermediate Accounting II

Any two of the following courses:

MG341, AC419, AC428, AC441, AC442, FN311 (but not both MG341 and FN311)

2. Business Administration (for non-Business and Management School majors)

Students must complete all of the following courses with a grade of “C” or better:

EC201 Principles of Economics (Macro)

EC202 Principles of Economics (Micro)

AC205 Principles of Accounting Financial

MG309 Management of Organizations

MG314 Marketing Management

One of the following: MG101, EC106, AC206, MG351, MG408, MG319, MG425, FN311,

IS121, MG460/CE460.

3. Economics

Students must complete all of the following courses with a grade of “C” or better:

EC201 Principles of Economics (Macro)

EC202 Principles of Economics (Micro)

Two of the following:

EC 310 Money & Banking

EC301 Intermediate Price Theory

EC302 National Income Analysis

EC406 Public Finance

Two additional courses numbered 300 or above In Economics (EC), finance (FN) or Quantatative Methods (QM).

4. Finance

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

FN311 Managerial Finance

FN407 Advanced Financial Management

FN412 Investments

EC310 Money and Banking

Any two of the following: AC335, AC336, AC419, AC420, EC406, EC419, MG319

5. Computer Information Systems (not open to students with majors In Computer Science, Management, Computer Engineering, or Computer Security and Information Assurance)

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

IS130 Introduction to Computing

IS131 Computer Programming

*IS221 G.U.I. Programming

IS228 Intro to Data Structures

IS240 Database Management

One of the following: IS301, IS353, IS406, IS460

* IS120/121 may be substituted for IS221

6. Computer Science (not open to students with majors In Computer Science, Computer Engineering, or Computer Security and Information Assurance)

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

IS130 Introduction to Computing

IS131 Computer Programming

IS228 Intro to Data Structures

EE215 Fundamentals of Digital Systems

One of the following: CP321,MA306, IS240.

Plus one IS or CP course at 300 or 400 level for which all prerequisites have been satisfied.

7. Computer Crime and Forensics

Minor Prerequisites:

CJ101 Intro. to Criminal Justice

CJ102 Substantive Criminal Law

IS130 Intro. to Computing

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

CJ301 Criminal Procedure

IS131 Computer programming

IS228 Intro. to Data Structures

IS340 Information Systems Security Assurance

CJ341 Cyber Crime

CJ442 Intro. to Computer Forensics

8. Information Assurance

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

CP337 Operating Systems

IS340 Information Systems Security Assurance
IS342 Management of Information Assurance
IS460 Data Communications and Networks
CP431 Network Security
CJ442 Computer Forensics

9. Marketing

Students must complete the following four courses with a grade of “C” or better:

MG314 Marketing Management
MG416 Advanced Marketing
MG425 Advertising Management
PY211 Introduction to Psychology
Any two of the following courses:

AC441 Cost Accounting
MG319 International Business
MG448 Small Business Strategies
MG450 Internship
QM317 Business and Economic Statistics

THE DAVID CRAWFORD SCHOOL OF ENGINEERING

Dean: Bruce A. Bowman

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

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 Offered: Bachelor of Science in Civil Engineering, Computer Engineering*, Electrical Engineering*, Electrical and Computer Engineering, and Mechanical Engineering,. The Master of Civil Engineering program is offered through the On-line Graduate Programs and is described in a separate publication.

*The Electrical Engineering and Computer Engineering degrees are only available to students currently registered in those programs. Matriculating students enroll in the new Electrical and Computer Engineering degree.

Minor in 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 better, in a program approved by the Engineering School Dean.

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

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 Dean).

Civil and Environmental Engineering

Professors E. Sevi, White, and Wight (Chair); Associate Professor Bowman; Assistant Professor A. Sevi.

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 four-year curriculum to accomplish the program's objectives has been accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050,

Baltimore, MD 21202-4012 – 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

First Year		Credits	Credits
EG109 Introduction Engineering I	3	EG110 Introduction Engineering II	3
CH103 General Chemistry I	4	CH104 General Chemistry II	4
EN101 Comp. & Literature I	3	EN102 Comp. & Literature II	3
MA121 Calculus I	4	MA122 Calculus II	4
		Gen. Ed Elective #	3
	14		17
Second Year			
CE211 Surveying	3	CE214 Site Dev. & Engineering	3
EG201 Statics	3	EG202 Dynamics	3
MA223 Calculus III	4	MA224 Differential Equations	4
PS211 University Physics I	4	PS212 University Physics II	4
Gen. Ed Elective	3	EG206 Thermodynamics	3
	17		17
Third Year			
AC201 Intro to Acct.& Fin. Wld.	3	CE322 Fluid Mechanics Lab.	1
CE321 Materials Laboratory	1	CE328 Soil Mechanics	4
EE314 Elements of Elect. Engr	4	CE332 Hydrology	3
Gen. Ed Elective	3	CE348 Structural Anal.	4
EG301 Mech. of Materials	3	EN204 Prof. & Tech Writing	3
EG303 Fluid Mechanics	3		
	17		15
Fourth Year			
CE421 Sanitary Engineering	4	CE422 Water & Wastewater Treatmt3	
CE460 Construction Management	3	CE464 Specs. & Estimating	1
CE475 Sr. Project Planning	1	CE480 Sr. Design	3
CE442 Design of Metal Structures	3	Science Elective	3
CE419 Foundations Engineering	3	CE444 Reinforced Concrete Design	3
EG450 Professional Issues	3	Gen. Ed Elective	3
		EG044 Prep for FE Exam	0
	17		16

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

*ROTC is required 6 semesters for members of the Corps of Cadets.

#University general education requirement dictates that the Engineering Humanities-Social Science Electives be distributed as follows: one history course, one literature course, one course in psychology, sociology, economics or political science, and one arts or humanities course beyond the literature course

Science Electives: BI220, BI260, BI275, GL110, GL156, GL253, GL257, GL262, GL265, ID110

+Available Civil Engineering Electives

CE419 Foundation Engineering
CE433 Groundwater Hydrology
CE442 Design of Metal Structures
CE450 Air Pollution Control

CE422 Water & Wastewater Treatment
CE441 Transportation Engineering
CE444 Reinforced Concrete Design
CE451 Air Poll. Control Equip. Design

@Available Tech electives

BI220 Introductory Microbiology
CE422 Water & Wastewater Treatment
CE441 Transportation Engineering
CH204 Quantitative Analysis
CP321 Comp Organ & Programming
MA310 Linear Algebra
ME307 Thermodynamics II

BI275 Environmental Biology
CE433 Groundwater Hydrology
CE450 Air Pollution Control
CH205 Organic chemistry
EM 301 Project Management
MA311 Statistical Methodology I

Electrical and Computer Engineering

Professor Lessard; Associate Professor Fitzhugh (Chair) and Beneat; Assistant Professor Prairie.

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.

The graduates of the Electrical and/or Computer Engineering programs will:

- Contribute to the engineering profession through the application of the requisite knowledge of engineering fundamentals, mathematics, science, and modern tools to conceive and implement solutions for problems in the electrical and computer engineering field.
- Effectively communicate the results of their work.
- Work professionally in team environments to design electrical/computer systems.
- Maintain a positive outlook on professional life, and recognize the need for professionals and citizens in an evolving global society to pursue a course of life-long learning and continued professional development.
- Demonstrate initiative and perform leadership roles in an ethical manner.
- Perceive the impact on society of their professional decisions.

Students in the Electrical and/or 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 multi-disciplinary / multi-cultural 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 Engineering curriculum is accredited by the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone: (410) 347-7700. Students matriculating in the fall of 2008 and later will be enrolled in the Electrical and Computer Engineering program. The Electrical Engineering and Computer Engineering programs are only available to students currently enrolled in those programs.

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

First Year	Credits		Credits
EG109 Intro to Engineering I	3	EG110 Intro to Engineering	3
CH103 General Chemistry I	4	EE200* or CH104	3/4
EN101 Composition & Literature I	3	EN102 Comp & Literature II	3
MA121 Calculus I	4	MA122 Calculus II	4
		Gen. Ed Elective	3
	14		16/17
Second Year			
EE215 Fund of Digital Design	4	EE356 Electric Circuits II	3
EE204 Electric Circuits I	3	EG206 Thermodynamics	3
MA223 Calculus III	4	MA224 Differential Equations	4
PS211 University Physics I	4	PS212 University Physics II	4
Ged. Ed Elective	3	EE200 Engineering Programming*	3
	18		14/17
Third Year			
EE321 Embedded Systems.	4	EE325 Comp. Arch. & Op Sys	3
EE303 EM Field Theory I	3	EE350 Linear Systems	3
EE357 Electronics I	3	EE366 Electronics II	4
MA306 Discrete Math	3	EE373 Electrical Energy Conversion	4
EE359 Electrical Engineering Lab	1	EN 204 Prof. & Tech. Writing	3
Gen. Ed Elective	3		
	17		17
Fourth Year			
EE491 Systems Design I	3	EE494 Systems Design II	3
EE411 Microproc Based Sys	4	EE486 Digital Sig. Proc.	3
MA311 Statistical Methodology	3	EE487 Digital Signal Proc. Lab	1
EE463 Comm. Systems	4	EE459 Power Systems Analysis	3
EG450 Professional Issues	3	EE478 Control Systems	3
		Gen. Ed Elective	
	3		
	17		16

*EE200 Engineering Programming is to be taken no later than the end of the Sophomore year.

*ROTC is required 6 semesters for members of the Corps of Cadets.

University general education requirement dictates that the Humanities-Social Science Electives be distributed as follows: one history course, one literature course, one course in psychology, sociology, economics or political science, and one arts or humanities course beyond the literature course.

B.S. in Electrical Engineering – Curriculum Map

First Year	Credits		Credits
EG109 Intro to Engineering I	3	EG110 Intro to Engineering	3
CH103 General Chemistry I	4	EE200 Engineering Programming	3
EN101 Composition & Literature I	3	EN102 Comp & Literature II	3
MA121 Calculus I	4	MA122 Calculus II	4
		Gen. Ed Elective #	3
	14		16
Second Year			
EE215 Fund of Digital Design	4	EE204 Electric Circuits I	3
IS228 Data Structures	3	EE242 Digital Systems Design	4
MA223 Calculus III	4	MA224 Differential Equations	4
PS211 University Physics I	4	PS212 University Physics II	4
Gen. Ed Elective	3	Gen. Ed Elective	3
	18		15
Third Year			
EE321 Embedded Systems	4	EE303 EM Field Theory I	3
EE356 Electric Circuits II	3	EE350 Linear Systems	3
EE357 Electronics I	3	EE366 Electronics II	4
EE359 Electrical Engineering Lab	1	EE373 Electrical Energy Conversion	4
MA311 Statistical Methodology	3	Gen. Ed Elective	3
Gen. Ed Elective	3		
	17		17
Fourth Year			
EE411 Microproc Based Sys	4	EE463 Comm. Systems	4
EE478 Control Systems	3	EE468 Integrated Circuits	3
EE487 Digital Signal Proc. Lab	1	EE494 Elec Systems Design II	3
EE486 Digital Sig. Proc.	3	Gen. Ed Elective	3
EE491 Electrical Systems Design I	3	Program Elective	3
EG450 Professional Issues	3		
	17		16

Program Electives

Program electives for the Electrical Engineering program must be a course of at least 3 credits selected from the following, conditional on the course not being required for the program and the prerequisites have been satisfied: any EE or CP course at the 300-level or greater; any EG course at the 200-level or greater; and any CH, MA, or PS course at the 300-level or greater, except MA360.

*ROTC is required 6 semesters for members of the Corps of Cadets.

#University general education requirement dictates that the Humanities-Social Science Electives be distributed as follows: one history course, one literature course, one course in psychology, sociology, economics or political science, and one arts or humanities course beyond the literature course. Additional Humanities-Social Science Electives beyond the four required for the university general education requirements must be selected from the general education list.

B.S. Computer Engineering – Curriculum Map

First Year		Credits		Credits
EG109 Intro to Engineering I	3	EG110 Intro to Engineering	3	
CH103 General Chemistry I	4	EE200 Engineering Programming	3	
EN101 Composition & Literature I	3	EN102 Comp & Literature II	3	
MA121 Calculus I	4	MA122 Calculus II	4	
		Gen. Ed Elective #	3	
	14		16	
Second Year				
EE215 Fund of Digital Design	4	EE204 Electric Circuits I	3	
IS228 Data Structures	3	EE242 Digital Systems Design	4	
MA223 Calculus III	4	MA224 Differential Equations	4	
PS211 University Physics I	4	PS212 University Physics II	4	
Gen. Ed Elective	3	Gen. Ed Elective	3	
	18		18	
Third Year				
EE321 Embedded Systems	4	CP337 Operating Systems	3	
EE356 Electric Circuits II	3	EE350 Linear Systems	3	
EE357 Electronics I	3	EE366 Electronics II	4	
EE359 Electrical Engineering Lab	1	MA380 Theory of Computation	3	
MA306 Discrete Math	3	Program Elective	3	
Gen. Ed Elective	3			
	17		17	
Fourth Year				
CP495 Computer Systems Design I	3	CP423 Computer Architecture	3	
CP433 Computer Comm. Networks	3	CP440 Software Engineering	3	
MA311 Statistical Methodology	3	CP496 Comp Systems Design II	3	
EG450 Professional Issues	3	Gen. Ed Elective	3	
Program Elective	3	Program Elective	3	
	17		16	

Program Electives

Program electives for the Computer Engineering program must be a course of at least 3 credits selected from the following, conditional on the course not being required for the program and the prerequisites have been satisfied: any EE or CP course at the 300-level or greater; any EG course at the 200-level or greater; and any CH, MA, or PS course at the 300-level or greater, except MA360.

*ROTC is required 6 semesters for members of the Corps of Cadets.

#University general education requirement dictates that the Humanities-Social Science Electives be distributed as follows: one history course, one literature course, one course in psychology, sociology, economics or political science, and one arts or humanities course beyond the literature course. Additional Humanities-Social Science Electives beyond the four required for the university general education requirements must be selected from the general education list.

Mechanical Engineering

Professors Tartaglia, and Wallace; Associate Professor Stephens (Chair); Assistant Professor Friend.

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:

- Have a strong foundation and ability to apply engineering fundamentals, modern tools, mathematics, science, and humanities to conceive, analyze and implement solutions to problems in the mechanical engineering field.
- Have a broad-based, laboratory-oriented, hands-on engineering education that will enable graduates to practice in a variety of mechanical engineering fields including energy conversion and transfer, materials and manufacturing, and mechanical systems design.
- Be able to 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.
- Be able to work effectively as a team member and be able to lead a multidisciplinary team.
- Be able to design a component, system or process in the mechanical engineering field and communicate that design effectively 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 the Engineering Accreditation Commission of ABET, 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 – telephone (410) 347-7700.

B.S. in Mechanical Engineering – Curriculum Map

First Year

	Credits		Credits
CH103 General Chem. I	4	CH104 General Chem. II	4
EG109 Introduction Engineering I	3	MA122 Calculus II	4
EN101 Composition & Literature I	3	EG110 Intro to Eng. II	3
MA121 Calculus I	4	EN102 Comp & Lit. II	3
		Gen. Ed elective#	3
	14		17

Second Year

EG201 Statics	3	EE240 Electrical Concepts	3
EE204 Circuits I	3	EG206 Thermodynamics	3
MA223 Calculus III	4	MA224 Differential Eqns.	4
PS211 University Physics I	4	PS212 University Physics II	4
ME211 Mech Engineering Tools	2	EG202 Dynamics	3
	16		17

Third Year

EG203 Material Science	3	ME356 Manufacturing Proc.	4
ME311 Mech Engineering Tools II	2	EG303 Fluid Dynamics.	3
EG301 Mechanics of Materials	3	ME368 Des. of Mach. Element	3
ME307 Thermodynamics II	3	ME370 Mech. Syst. Design	3
ME363 Kinematics	3	ME382 M.E. Lab II	1
ME381 M.E. Lab I	2	Gen. Ed Elective	3
	16		17

Fourth Year

EE321 Embedded Systems	4	EG044 FE Review	0
EG043 Professional Issue	0	ME Elective	3
ME467 M.E. Design I	3	Math/Science/Engineer elect	3
ME487 M.E. Lab III	2	ME468 M.E. Design II	3
ME435 Vibrations and controls	3	Gen. Ed Elective	3
ME465 Heat Transfer	3	Gen. Ed Elective	3
Gen. Ed Elective	3		
	18		15

*ROTC is required 6 semesters for members of the Corps of Cadets.

#University general education requirement dictates that the Humanities-Social Science Electives be distributed as follows: one history course, one literature course, one course in psychology, sociology, economics or political science, and one arts or humanities

course beyond the literature course

B.S. Engineering Management – Curriculum Map (construction concentration)

First Year	Credits	Credits	
EG 109 Intro to Engineering I	3	EG 110 Intro to Engineering II	3
MA107 Precalculus	4	EC202 Prin of Econ Micro	3
GL110Intro to Geology	4	EN102 Comp& Literature II	3
EN101 Composition & Literature I	3	EN102 Public Speaking	3
MA108 Applied Calculus	4		
	14		16
Second Year			
AC201 Intro to Accounting	3	AP 325 Materials, Const & Design	3
AP225 Passive Environmental Sys	3	CE214 Site Engineering	4
CE211 Surveying	3	EC201 Prin of Econ Macro	3
PS201 General Physics I	4	EN204 Technical Writing	3
CH103 General Chemistry I	4	QM213 Statistic	3
	17		16
Third Year			
AP327 Active Building Systems I.	3	AP328 Active Building Systems II	3
CE351 Statics and Strength of Mat.	4	CE464 Specs and Estimating	1
CE460 Construction Mgt	3	EM301 Project Management	3
FN311 Finance	3	MG309 Organizational Mgmt	3
MG341 Business Law	3	MG310 Operations	3
		Humanities Elective	3
	16		16
Fourth Year			
CE321Materials Lab	1	CE456 Structures II	3
CE455Structures I	3	EM402 Construction Mgt. Practices	3
EG450 Professional Issues	3	IS300 Mgt. Information Systems	3
EM302 Supply Chain Mgt.	3	MG 351 Organizational Behavior	3
MG314 Marketing	3	History Elective	3
Literature Elective	3		
	16		15

SCHOOL OF HUMANITIES

Dean: Jonathan Walters

The School of Humanities is composed of the Department of English and Communications and the Department of Modern Languages. In addition, the school is the administrative home of courses in philosophy and music.

Mission:

The School of Humanities, through its programs of academic major as well as its programs of support and enrichment, seeks to bring to students a more mature and sophisticated understanding of the nature of the human condition, its struggle to attain satisfaction in life through the telling of its stories, and its attempts to communicate in an unsettled world. Through the study of text and language, and through learning to appreciate the power of media, the school promotes sympathy for our shared condition and a heightened ability to communicate through our verbal symbols.

Co-Curricular Activities:

Through its academic programs, the School of Humanities 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 newsmagazine, *Our American Journey*; the campus literary magazine, *Chameleon*; the student radio station, WNUB-FM; the campus theatrical troop, 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.

Humanities Electives

The following courses qualify as Humanities electives: CM109, 261, 335, 436; All Fine Arts (FA) courses; all English courses numbered above 206 (except 240, 241, 242); all courses offered by the Department of Modern Languages numbered 205 and above; MU101 and MU 271; and all philosophy courses.

Literature Electives

The following courses qualify as Literature Electives: EN201, 202, 205, 206, 210, 220, 225, 226, 227, 228, 244, 250, 251, 270, 292, 333, 334, 372, 375, 376, 377, 391, 393, 394, 395, 396, 397, 398, 399, 406, 420, 450, FR321, 322, 327, 328, 415, 421; GR322, 324, 326, 415, 421; SP321, 322, 327, 328, 415, 421.

EN425 may be designated as a literature course when specified.

Philosophy Ethics Electives

The following courses are Philosophy Ethics Electives: PH303, PH322, PH323, PH324, PH350.

English and Communications

Professors Batra, Bush, Caudill, Estill, Fields, Karch, Knauf, Morris, Liberman, and Walters; Associate Professors Cox, Ferreira, Lane (Chair), and Williams; Assistant Professors McDonald; Professors Emeriti Facos, Gould, Kloeckner, Richards, Shelley, Stuart, Turner; Adjunct Faculty Beckwith, Dana, Donley, Emmons, Logan, Murray, Paige, Parker, Piasecki, Poirier, Richards, D., Smith, Stewart, and Youngwood.

Communications

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.

To graduate with a major in Communications, the student must earn the grade of "C" or better in EN101, EN102, EN112, and all required CM courses.

Minor & Concentrations:

Three distinct programs of minor or concentration exist within the curricula in Communications:

1. **A minor in "Communications,"** consisting of six courses completed with a grade of "C" or higher: CM 109, CM 207, and four additional courses numbered CM 208 or higher.

2. **A concentration in "Digital Media Technology,"** including six of the following:

CM270: Internet Communications

CM271: Television Production

CM391: Advanced Television Production

CM392: Documentary Television Production

CM393: Non-Linear Digital Television

CM491: Media Composer Techniques

CM492: Advanced Media Composer Techniques

CM493: Media Composer Graphics and Effects

CM494: Advanced Media Composer Graphics and Effects

CM495: Systems Configuration and Media Database Management

3. **A concentration in "Integrated Corporate Communications,"** including each of the following:

CM270: Internet Communications

CM303: Communications in Advertising

CM304: Corporate Communications

CM311: Speech Communications in the Workplace

CM207: Journalism I: Newsgathering

A course with prefix MG, EC, AC, QM, or FN

B. S. in Communications – Curriculum Map

First Year	Credits		Credit
EN101 Comp & Literature I	3	EN102 Comp & Literature II	3
EN112 Public Speaking	3	CM271 Television Production	3
MA (excluding MA005 or 103)	3/4	MA (excluding MA005 or 103)	3/4
CM109 Introduction Mass Media	3	PY Elective	3
		CM261 Interper Communications	3
	12/13		15/16
Second Year			
CM207 Journalism I	3	CM208 Journalism II	3
CM211 Broadcasting Techniques	3	CM351 Radio Production or	
EN201 World Literature I	3	CM491 Media Composer Tech	3
HI Elective	3	EN202 World Literature II	3
IS Elective (ex. 120)	3	EC/PY/HI/PO/SO Elective	3
		MG 101, AC 205, or EC 201	3
	15		15
Third Year			
CM209 Broadcast Writing	3	CM303 Comm Advertising	3
*MU/FA/PH/ML Elective	3	PY Elective	3
Laboratory Science Elective	4	Laboratory Science Elective	4
Elective	3	**Film, theater, or TV criticism elec	3
Elective	3	Elective	3
	16		16
Fourth Year			
CM436 Comm. Law & Ethics	3	CM408 Comm Internship	3
SA107 Photography or		CM407 Senior Comm. Seminar	3
CM270, 391, 392, 393, 491,		Literature Elective	3
492, 494, or 495	3	Elective	3
Literature Elective	3	Elective	3
Elective	3		
Elective	3		
	15		15

*SA107 does not fulfill this requirement.

**CM 335; EN239, 240, 241, 307, 308, 310, 333, 334.

ROTC Courses as required are in addition to the above.

English

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 English in a global context and the ways literature written in English represents and examines a variety of cultures. 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, including graphic texts, gaming narratives, and cyber texts. Specialty courses also include literature of the third 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 an excellent preparation 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 represents excellent preparation for post-graduate study in a variety of fields.

For the English major, the student must complete EN101, EN102, EN201/5, EN202/6, and a minimum of twelve English courses (36 degree credits) above EN202/6. The student must earn a grade of “C” or higher in all of these courses, except EN101/6 or EN102/7, in one of which a grade of “D” may be earned. Required courses above EN202/6 are as follows:

- 1, 2. EN225, EN226 (Survey of English Literature I and II);
3. EN227 (Survey of American Literature I);
4. EN203, 204, or 306 (Advanced Writing);
5. EN 333 or 334 (Shakespeare);
6. One course in American literature from the group numbered EN391 through EN399;
7. One course in British literature from the group numbered EN370 through EN379;
8. EN 450 (Senior Seminar)
- 9, 10, 11, 12 Four additional English courses numbered above 202/6.

EN101 and EN102 are prerequisites for all English courses numbered above EN200. Although EN101 and EN102 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 in, or permission to substitute other courses for, English 101 and/or 102. Students requiring instruction in English preliminary to that received in the freshman sequence must enroll in EN005 during their first semester at Norwich.

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 better, six courses: EN201 or 205, EN202 or 206, and four additional English courses numbered above EN202/6.

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.

B. A. in English – Curriculum Map

First Year	Credits		Credits
EN101/106 Comp & Literature I	3	EN102/7 Comp & Literature II	3
*CN/FR/GR/SP Mod.		*CN/FR/GR/SP Mod.	
Foreign Language	3-6	Foreign Language	3-6
HI Elective (excluding HI109)	3	**EC/PY/HI/SO or PO Elective	3
Elective	3	Elective	3
	12-15		12-15
Second Year			
EN201/5 World Lit. I	3	EN202/6 World Lit. II	3
EN225 Survey of En. Lit. I	3	EN226 Survey of En. Lit. II	3
PH/FA/ML Elective	3	MA Elective (excluding 005,103)	3/4
MA Elective (excluding 005, 103)	3/4	Elective	3
Elective	3	Elective	3
	16/17		16/17
Third Year			
EN333 or 334 Shakespeare	3	EN37X (British Lit. of a Period)	3
EN 227 Survey of American Lit. I	3	EN39X (American Lit. of a Period)	3
Lab Science Elective	4	Lab Science Elective	4
Elective	3	Elective	3
Elective	3	Elective	3
	16		16
Fourth Year			
EN Elective (above EN202)	3	EN Elective (above EN202)	3
EN Elective (above EN202)	3	EN Elective (above EN202)	3
EN203 or 204 or 306	3	**EC/PY/HI/SO or PO Elective.	3
**EC/PY/HI/SO or PO Elective	3	Elective	3
Elective	3	EN 450 Senior Seminar	3
	15		15

*Modern language credit is determined in accordance with department placement.

**At least one of the EC/PY/HI/SO/PO electives must be in a discipline other than History (HI).

NOTE: ROTC as required are in addition to the above requirements.

*** Please note that EN450 is usually taught only in the spring semester.

NOTE: A student must either pass or receive **department-authorized** waiver for both EN101 or EN107 and EN 102 or EN108, before registering for any **English class above EN112**.

Modern Languages

Professors Chevalier, Robertson (Chair), D. Ward; Assistant Professors Stallings-Ward, Song; Adjunct Faculty Lutgen, Martin, Miana, and Rioux.

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, French, German, and Spanish, 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 prior to the summer and before they are enrolled for classes.

Students interested in a career in the military, international business, diplomacy, international relations, research, teaching, or in any field in which they might encounter representatives or data from foreign countries are encouraged to consider earning a **minor in Chinese, French, German, or Spanish**, or a **major in Spanish**.

Achieving demonstrated proficiency in a foreign language enables graduates to communicate with individuals around the globe. For example, French is used in an official capacity in over forty countries, including our neighboring Canadian province to the North. German is spoken in several European countries. Both France and Germany are very active in high-tech industries and in international peacekeeping efforts. Spanish, of course, is spoken not only in Spain but also in many major cities throughout the United States as well as in Central and South America. Many important trade and law enforcement policies are established between the United States and our neighbors to the South. Additionally, the rapid rise of China with a population of 1.3 billion people has created an urgent need to prepare a new generation to understand Chinese culture, politics, the economy, and the military.

A student seeking an academic minor in one of the languages must complete, with a grade of "C" or higher, six courses (18 credit hours) beyond the 112 level in that language.

Suggestions for Completing the Minor in Chinese, French, German, or Spanish:

Pathway 1: For the student entering at the beginning level:

First year CN/FR/GR/SP 111-112 (6 credits/semester) The 100 level courses do not count toward the minor.

Second year CN/FR/GR/SP 205-206 (3 credits/semester).

Third year One 300-level course each semester (a second foreign-language course may be taken concurrently; check with your advisor for

curriculum and scheduling requirements appropriate to your major).

Fourth year One 300- or 400-level course each semester.

Pathway 2: For the student entering at the intermediate or advanced level:

First year CN/FR/GR/SP 205-206 or one 300-level course each semester.

Second year One 300- or 400-level course each semester.

Third and

Fourth years At least two courses numbered 300 or above.

Other options include taking two language courses each semester.

A major in Spanish is available to students who complete a minimum of eight courses (i.e. 24 credit hours) beyond the 206-level and receive a “C” or better in all the courses taken for the major. A minimum of four upper-level courses (i.e., 12 credits hours) must be taken at Norwich. All Spanish majors are strongly urged to combine their study at Norwich with a summer or semester of study in an approved overseas program where the target language is spoken, thus enabling them to experience language immersion and gain additional insights into the Hispanic cultures and peoples. Study abroad courses counting toward the major are approved in advance by the department chair and the faculty in the major.

B. A. in Spanish – Curriculum Map

First Year	Credits		Credits
EN 101 Comp & Literature I	3	EN 101 Comp & Literature II	3
SP 111 Beginning Spanish I	6	SP 112 Beginning Spanish II	6
HI Elective (excluding HI 109)	3	*EC/PY/HI/SO or PO Elective	3
Math Elective (excluding 005, 103)	3	Math Elective (excluding 005, 103)	3
	15		15

Second Year

EN 201 World Literature I	3	EN 202 World Literature II	3
SP 205 Intermediate Spanish III	3	SP 206 Intermediate Spanish III	3
**PH Elective	3	Lab Science Elective	4
Lab Science Elective	4	Elective	3
Elective	3	Humanities Elective	3
	16		16

Third Year

SP 301 Advanced Spanish I	3	SP 302 Advanced Spanish II	3
SP Elective	3	SP Elective	3
*EC/PY/HI/SO or PO Elective	3	*EC/PY/HI/SO or PO Elective	3
Elective	3	Elective	3
Humanities Elective	3	Humanities Elective	3
	15		15

Fourth Year

SP Elective	3	SP Elective	3
SP Elective	3	SP 415 Seminar	3
*EC/PY/HI/SO or PO Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	15		15

*At least one of the EC/PY/HI/SO or PO electives must be in a discipline other than History (HI).

**Must satisfy the General Education ethics requirement.

NOTE: ROTC as required are in addition to the above requirements.

The goal of the minor in Chinese, French, German and Spanish, and the major in Spanish is to encourage students to develop oral, written, and cultural proficiency in order to be able to use the language professionally upon graduation. The more language courses successfully completed, the more the graduate offers as a linguist, translator, interpreter, researcher, negotiator, etc.

In accordance with recommendations of the Modern Language Association of America, the department encourages students seeking an academic major or minor in a foreign language to supplement their Norwich coursework with either a summer or a semester of study abroad. See the Chair, Department of Modern Languages to discuss suitable programs of study.

Norwich maintains student-exchange program with the French military academy, **l'Ecole Speciale Militaire de Saint-Cyr**, and with the German military university, **die Universität der Bundeswehr**, located near Munich. Civilian or Corps students interested in participating in these programs must maintain a distinguished GPA, and demonstrate advanced proficiency in French or German. Students who hold military scholarships are especially encouraged to apply. For further information, please contact the Chair of Modern Languages. Inquiries concerning study abroad should be addressed to the department chair by the beginning of the fall semester of the student's sophomore year.

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

Philosophy

Philip A. Gauss Professor McKay, Professor Maultsby; Adjunct Faculty Logan and Orlando.

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.

For a **minor in philosophy**, the student must complete PH210 and 15 additional credits in philosophy, all with a grade of "C" or better.

Music

Professor Emeritus Bennett. Adjunct Faculty A. Cerutti, N. Cerutti, and L. Porter.

Note. Students can earn no more than one, three credit free elective course, by combining three of the same one credit music courses.

SCHOOL OF MATHEMATICS AND SCIENCES

Dean: Cathy Frey

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

Mission:

The mission of the Mathematics and Sciences School 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.

Teacher Licensure:

Students seeking teacher licensure as secondary or elementary teachers should review the Teacher Education section under the offerings of the Psychology Department in the School of Social Sciences and consult with the Director of Teacher Education during the first semester enrollment of the freshman year.

Biology and Physical Education

Professors Barnard (Chair), Carney and Howard; Associate Professor Page; Assistant Professors Hinkle; Roberge, Wuorinen, Yesalonia; Lecturer Fenner.

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.

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. Anyone interested in teaching biology can build in an education minor,

including student teaching, to meet all criteria necessary for licensure.

The **Bachelor of Science in Physical Education** prepares students for immediate employment or graduate work in the areas of physical education, coaching, and/or working in health centers and recreation facilities. Future physical educators will develop knowledge, skills, disciplinary concepts and instructional strategies through reflection and practice. Partnerships have been established with Barre Town Elementary School for grades K-8 and Union 32 Jr-Sr High School for grades 7-12, so that students can be exposed to hands-on learning. Students become reflective practitioners by critically analyzing the actions of role models and the reactions of learners. Physical Education majors are provided with the opportunity to fulfill all instructional, assessment and organizational competencies for licensure in Vermont with an endorsement for teaching Physical Education for grades K-12. An additional licensure endorsement is available for Health Education as well. PRAXIS I and PRAXIS II examinations are required for all teacher licensure candidates. Vermont licensure is reciprocal in most other states, especially in the eastern United States. The physical education program includes a minor in biology as part of its science core.

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

First Year	Credits		Credits
BI101 Principles of Biology I	4	BI 102 Principles of Biology II	4
CH103 General Chemistry I	4	CH104 General Chemistry II	4
MA107 Precalculus	4	MA108 Applied Calculus	4
EN101 Composition & Literature	3	EN102 Composition & Literature	3
	15		15
Second Year			
BI202 Genetics	4	BI Elective	4
CH225 Organic Chemistry I	4	CH226 Organic Chemistry II	4
EN201 World Literature I	3	EN202 World Literature II	3
Free Elective	3	Free Elective	3
	14		14
Third Year			
BI Elective	4	BI Elective	4
PS201 General Physics I	4	PS202 General Physics II	4
History Elective*	3	Humanities Elective**	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	17		17
Fourth Year			
BI Elective	4	BI Elective	4
BI Elective	4	BI Elective	4
BI 401 Senior Seminar	3	Social Science Elective***	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	17		17

- Biology electives must include at least one course from each of the following areas: anatomy (A), physiology (P), systematics (S), and field biology (F). [A single course can satisfy only one requirement.]
- Every biology major must take at least one botany (B) and one zoology (Z) course.
- All biology courses to be used toward major degree requirements must be passed with a "C" or better.

* History Elective = any History Department course (HI) except HI 109.

** Humanities Elective = EN (above 206, excluding 240-242); FA; MU 101; CM 109,261,335,436; CN; Modern Language (above 112); or PH.

*** Social Science Elective = any PY, SO, EC or PO course.

Pre-medical/Pre-dental Track

The following courses are recommended as biology electives or free electives within the B.S. program for students interested in the Pre-medical/Pre-dental Track: BI201, BI220, BI301 or BI302, BI304, BI306, BI330, BI405, CH324, PY211 and PY212. A Premedical Advisor is available within the department to help you in your decision making and guide you through the application process. Similar help is available for students wishing to pursue graduate studies in other areas of biology.

Minor in Biology

BI101, BI102 and 4 additional BI 200 + courses (of three or four credits), three of which must be 4-credit laboratory courses. PE365, PE371, or CH324 may be used as a substitute for one BI200+ course toward the minor. All courses must be passed with a "C" or better.

B. S. in Physical Education – Curriculum Map

First Year	Credits	Credits	
PE161 Physical Fitness & Wellness	3	PE107 Foundations Physical Educ.	3
BI101 Principles of Biology I	4	CH or PS Elective	4
PY211 Intro. to Psychology	3	PY220 Developmental Psych or PY324 Adolesc. Psychology	3
EN101 Composition & Literature	3	EN102 Composition & Literature	3
+Math Elective	3	PE265 Lifelong Motor Develop	3
	16		16
Second Year			
PE260 Personal & Comm Hlth	3	PE305 Motor Skills Development II	4
PE304 Motor Skills Development I	4	PE342 PE Middle/Second School	4
PE341 P.E. for Elementary School	4	MA232 Elementary Statistics	3
BI215 Anatomy & Physiology I	4	BI216 Anatomy & Physiology II	4
	15		15
Third Year			
PE 355 Leadership in Sports	3	PE432 Organization & Mgmt	3
BI253 Foods & Nutrition	4	PE371 Physiology of Exercise	4
History Elective*	3	PE373 Activities Disabled & Aging	3
Literature Elective**	3	Science Elective (BI, CH, GL, PS)	4
Free Elective	3	Free Elective	3
	16		17

Fourth Year

PE 365 Kinesiology	4	ED425 Student Teaching	12
PE406 Reading Physical Ed	3	or	
Biology Elective (BI 200+)	4	PE426 Internship	6 or 12
Humanities Elective***	3	or	
Free Elective	3	Free Electives	6 or 12
	17		12

All Physical Education courses must be passed with a grade of "C" or better. A cumulative GPA of 3.00 is required for student teaching.

* History Elective = any History Department course (HI) except HI 109.

** Literature Elective = must meet General Education literature requirement.

*** Humanities Elective = EN (above 206, excluding 240-242); FA; MU 101; CM 109,261,335,436; CN; Modern Language (above 112); or PH.

+Math 005 and MA103 do not count as requirements (free electives only), must use one free elective for an IS course

BI102 must be completed for the Biology minor

All sciences must be taken as lab sciences (4 credits courses)

Either PE365 or PE371 can count for Biology minor

Certification in First Aid & CPR is required for graduation

Minor in Physical Education: 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: PE161, PE305, PE355, PE432, plus two courses from the following list: PE304, PE341, PE342, PE371, SM220, SM310, or PY324. Physical Education majors can declare a Concentration in Coaching. All courses must be passed with a grade of C or better.

Minor in Physical Education: 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 PE161, PE260 and BI253. Three additional courses must be completed from the following list: BI220, BI240, BI330, BI364, PE261, PE365, PE371, SM220, SO320, PY211, PY220, or PY324. Physical Education majors may earn a Concentration in Health by completing this minor. All courses must be passed with a grade of C or better.

Licensure in Health Education

Physical Education majors seeking **Licensure in Health Education** must take PE161, PE260, PE261, BI253, and SO320. All courses must be passed with a grade of C or better. At this time, health licensure can be achieved through the Vermont Department of Education upon licensure in Physical Education, 60 hours of practicum experience, and transcript review.

Chemistry and Biochemistry

Shinquin Programs of Chemistry and Biochemistry

Professors J. Byrne and Hoppe (Chair); Associate Professors Rizzolo and Fisher; Assistant Professor Blank; Lecturers Frisbie and Milius.

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 §).

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.

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

First year	Credits		Credits
CH 103 Gen. Chemistry I	4	CH 104 Gen. Chemistry II	4
EN 101 Comp. and Lit.	3	EN 102 Comp. and Lit.	3
MA 121 Calculus I	4	MA 122 Calculus II	4
Elective	3	¹ Intro. Computer Science	3
	14		14

¹ MA 241 OR IS 121 OR EG 112 OR EG110

Second year

CH 225 Org Chem I or		CH 226 Org Chem II or	
§CH 327/337 Phys Chem I	4	§CH 328/338 Phys Chem II	4
PS 211 University Physics I	4	PS 212 University Physics II	4
² EN 201 World Literature	3	² EN 202 World Literature	3
HI Elective (except HI 109)	3	MA 224 Differential Equations	4
§CH 214 Communication Chem		§CH 204 Quantitative Analysis	
or in 3 rd year	0-1	or Elec	3-4
	14-15		18-19

Third year

§CH 327/337 Phys Chem I or		§CH 328/338 Phys Chem II or	
CH 225 Org Chem I	4	CH 226 Org Chem II	4
³ SC/MA Elective or		§CH 204 Quant Anal or	
§CH 438 Adv Inorg Chem	3-4	§CH 314/315 Instr Anal	4
Elec or §PS 205 Instrumentation	3-4	³ SC/MA Elective or	
Elective	3	§CH 324 Biochemistry I	3-4
§CH 214 Communication in Chem		Elective	3
or in 2 nd year	0-1	Elective	3
	13-16		17-18

Fourth year

CH 421 Synthesis (Inorganic)	3	CH 422 Synthesis (Organic)	3
§CH 438 Adv Inorg Chem or		§CH 314/315 Instr Anal or Elective	3-4
³ SC/MA Elective	3-4	§CH 324 Biochemistry I or	
§PS 205 Instrumentation or Elec	3-4	³ SC/MA Elective	3-4
CH 413 Seminar	1	⁴ PH Elective in Ethics	3
⁵ SS Elective	3	Elective	3
	13-15		15-17

§ 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

First year	Credits		Credits
CH 103 Gen. Chemistry I	4	CH 104 Gen. Chemistry II	4
EN 101 Comp. and Lit.	3	EN 102 Comp. and Lit.	3
MA 107 Precalculus	4	MA 121 Calculus I	4
BI 101 Principles of Biology I	4	BI 102 Principles of Biology II	4
	15		15

² EN 112 or EN 204 may be substituted for one semester of EN 201 – 202.

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

⁴ A Philosophy (PH) course in ethics. Use the General Education Ethics list for one of the ethics requirements.

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

Second year

CH 225 Organic Chemistry I	4	CH 226 Organic Chemistry II	4
⁶ PS 201 General Physics I	4	⁶ PS 202 General Physics II	4
⁷ EN 201 World Literature	3	§CH 324 Biochemistry I or	
BI 202 Genetics	4	§CH 204 Quant Anal	4
§CH 214 Communication in Chem		MA 122 Calculus II	4
or in 3 rd year	0-1		
	15-16		16

Third year

§CH 327 Physical Chemistry I or		§CH 328 Physical Chem II or	
Elective	3-4	§CH 324 Biochemistry I	3-4
§CH 325 Biochemistry II or		§CH 204 Quant Anal or	
Elective	3-4	§CH 314/315 Instr Anal	4
§BI 306 Cell Biology or		⁷ EN 202 World Literature	3
HI Elective (except HI109)	3-4	⁸ Elective or §BI 304 Physiology	3-4
⁹ SS Elective	3	Elective or in 4 th year	0-3
¹⁰ PH Elective in Ethics	3		
§CH 214 Communication in Chem			
or in 2 nd year	0-1		
	16-19		13-18

Fourth year

³ Elective or		⁸ Elective or	
§CH327 Physical Chemistry I	3	§CH 328 Physical Chemistry II	3
Elec or §CH 325 Biochemistry II	3-4	§CH 314/315 Instrumental Analysis	
HI Elective (except HI109) or		or Elective	3-4
§BI 306 Cell Biology	3-4	§BI 304 Physiology or Elective	3-4
CH 413 Seminar	1	CH 422 Synthesis (Organic)	3
Elective	3	Elective or in 3 rd year	0-3
	13-15		12-17

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

⁶ PS 211 – 212 may be substituted for PS 201 – 202.

⁷ EN 112 or EN 204 may be substituted for one semester of EN 201 – 202.

⁸ Recommended Science courses as electives: CH 438; BI 417

⁹ Social Science Elective; may enroll in any course in Sociology, Economics, Psychology or Political Science.

¹⁰ A Philosophy (PH) course in ethics. Use the General Education Ethics list for one of the ethics requirements.

Geology and Environmental Science

Charles A. Dana Professor Westerman; Associate Professor Dunn (Chair); Lecturer Low; Adjunct Clift, Grigg; Research Associate Springston

Norwich University, in the middle of the Green Mountain State, is ideally situated for unhurried and unhampered studies of our natural environment. Both the Bachelor of Science in Geology and the Bachelor of Science in Environmental Science degree programs are designed to take advantage of this location.

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 to the solid foundation in geology and supportive sciences, students often use their ten free electives to develop an additional concentration. Geology graduates are prepared for a variety of possible careers, such as to begin work in industry, consulting, state and federal surveys, or teaching, or to go on to graduate school. For a **minor in Geology**, the student must complete six geology courses with at least four at the 200-level or higher.

The Bachelor of Science in Environmental Science is a highly interdisciplinary degree designed to provide an education for students with interests and career goals related to the environment. Environment Science majors start their curriculum with the development of a firm base in the sciences and mathematics in their first two semesters. Each student must develop an area of specialization by selecting a Concentration from one of the two Options defined below. 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.

Environmental Science students have access to the facilities and equipment of the Department of Geology and Environmental Science as well as of the primary departments of their 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.

All Geology courses and Environmental Science courses except ES/GL251, 260, ES/GL450, and ES/GL451 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	Credits		Credits
GL110 Intro to Geology	4	GL156 Historical Geology	4
EN101 Comp. and Lit	3	EN102 Composition Literature	3
MA107 Precalculus Math	4	MA108 Applied Calculus	4
CH103 Gen. Chemistry	4	CH104 General Chemistry	4
	15		15
Second Year			
*GL2XX Elective	3-4	*GL2XX Elective	3-4

EN201 World Literature	3	EN202 World Lit	3
PS201 General Physics	4	PS202 General Physics	4
§Social Science Elective	3	Humanities Elective	3
Elective	3-4	Elective	3-4
GL251 Soph. Sem in Geology	1		
	17-19		16-18

Third Year

*GL2XX Elective	3-4	*GL2XX Elective	3-4
**Tech Elective	3-4	**Tech Elective	3-4
***History Elective	3	Ethics Elective	3
MA232 Elementary Statistics	3	Elective	3-4
Elective	3-4	Elective	3-4
	15-18		15-19

Fourth Year

*GL2XX Elective	3	*GL2XX Elective	3-4
GL450 Dir. Study in Geology	4	GL451 Senior Seminar	3
‡Tech Elective	3-4	§Science/Computer Elective	3-4
Elective	3-4	Elective	3-4
Elective	3-4	Elective	3-4
	16-20		15-19

*These six electives must include Sedimentation (GL257), Structural Geology (GL262), and Mineralogy (GL263).

**Technical Electives for this degree include Science, mathematics (above MA103), Engineering or Information Systems (above IS120) courses

***except HI 109

‡Sociology, Psychology, Political Science, or Economics

∞PH323 Environmental Ethics strongly recommended

B. S. in Environmental Science – Curriculum Map

First Year	Credits		Credits
EN101 Composition & Literature.	3	EN102 Composition & Literature	3
MA107 Precalculus Math	4	*MA108 Applied Calculus	4
BI101 Principles of Biology I	4	BI102 Principles of Biology II	4
GL110 Introduction to Geology	4	GL111 Oceanography	4
	15		15

* Or equivalent, especially if needed as a prerequisite for minor courses; EG and PS minors take MA121 (Calculus).

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. Graduate 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.

Second Year

CH103 General Chem. I	4	CH104 General Chem. II	4
GL261 Field Geology	4	**Tech. Elective	3-4
ES251 Soph. Sem. In Env. Sci	1	MA232 Elementary Statistics	3
§Elective	3-4	PH323 Envir. Ethics	3
Humanities Elective	3	Literature Elective	3
	15-16		16-17

Third Year

PS201 General Physics	4	PS202 General Physics II	4
EN204 Technical Writing	3	EC201 or EC202	3
Tech. Elective	3-4	*Chemistry Elective	4
Elective	3-4	Elective	3-4
‡History Elective	3	Elective	3-4
	15-18		17-19

Fourth Year

ES450 Dir. Study Envir. Sci.	4	ES451 Envir. Seminar	3
BI405 Ecology	4	CE432 or CE433	3
CE220 Intro. Envir. Protect. Tech.	3	CJ Law Elective	3
Elective	3-4	Elective	3-4
Elective	3-4		
	14-15		12-13

**Science, Mathematics, Engineering or Information systems at the 200+ level; in different disciplines & outside the minor for BI, CH, & GL, but one may be in the minor for EG & PS.

***CH203 or higher, CH204 highly recommended; not to include directed study or seminar.

§PS and EG minors may need additional prerequisites.

‡ except HI 109

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.

Second Year	Credits		Credits
EN203 Advanced Comp.	3	Literature Elective	3
MG101 Intro. to Business	3	PY211 intro to Psychology	3
CHXXX Chemistry Elective	4	PO105 American Politics	3
PO215 International Relations	3	*HIXXX History Elective	3
ES251 Soph. Sem. in Env. Science	3	MA232 Elementary Statistics	3
	16		15
Third Year			
EN204 Technical Writing	3	PH323 Environmental Ethics	3
EC201 Econ. Prin. (Macro)	3	GL253 Geomorphology	4
SO201 Intro. to Sociology	3	EC202 Econ. Prin. (Micro)	3
Elective	3-4	CJXXX Law Elective	3

Elective	3-4	Elective	3-4
	15-17		16-17
Fourth Year			
ES450 Dir. Study Envr. Sci.	4	ES451 Envr. Seminar	3
BI405 Ecology	4	CE220 Intro. Envir. Protect Tech.	3
Elective	3-4	Elective	3-4
Elective	3-4	Elective	3-4
Elective	3-4	Elective	3-4
	17-20		15-18

*except HI 109

Available Concentrations – Option I

Environmental Biology

BI 275	Environmental Biology	(4)
BI 316	Plant Taxonomy	(4)
or BI 351	Dendrology and Silvics	
BI326	Natural History of the Vertebrates	(4)
or BI 424	Woodland Ecology and Management	
BI 220	Introduction Microbiology	(4)
or BI240	Environmental and Food Microbiology	
GL 261	Field Geology	(4)
CH elective		(3/4)

Environmental Geology

GL 253	Geomorphology	(4)
GL 257	Sedimentation	(4)
GL 261	Field Geology	(4)
GL 263	Mineralogy	(4)
GL 200	Elective or EG 203 Materials Science	(3/4)
CH elective		(3/4)

Environmental Chemistry

CH 204	Quantitative Analysis	(4)
CH 205	Survey of Organic Chemistry	(4)
GL 263	Mineralogy	(4)
BI 240	Environmental & Food Microbiology	(4)
Two(2) of the following:	GL 261 Field Geology	(3/4)
	CH 314 or 315 Instr Methods	
	EG 203 Materials Science	

Environmental Engineering

EG 109	Introduction to Engineering	(3)
CE 211	Surveying	(3)
EG 203	materials Science	(3)
AP 221	Site Development & Design	(3)
GL 253	Geomorphology	(4)
One(1) of the following:	GL261 Field Geology	(3/4)
	BI 275 Environmental Biology	
	MA 241 mathematical Comp & Modeling	
	CH elective	

Climate Science

CH elective (CH204 Quant. Analysis recommended)	(3/4)
GL 265	Glacial Geology (4)
GL 253	Geomorphology (4)
PS 207	Meteorology & Climatology (4)
MA 241	Math Computation & Modeling (3)
One(1) of the following: PO 215 International Relations	(3)
PO 305 Geopolitics recommended, PO 415 International Law	

Available Concentrations – Option II

Environmental Policy and Management

MG 101	Introduction to Business (3)
IS 120	Busi Applications & Problem Solving (3)
PO 314	Legislative Process (3)
PO 321	US Constitutional law (3)
MG 309	Management of Organizations (3)
MG 341	Business Law (3)

Environmental Law and Protection

CJ 101	Introduction to Criminal Justice (3)
CJ 102	Substantive Criminal Law (3)
CJ 402	Law and Society (3)
Two(2) of the following four:	(6)
PO 321 US Constitutional Law	
PO 314 Legislative Process	
PO 3XX/4XX International Environmental Policy	
PO 331 State and Local Politics	
SO 202 Problems in Modern Society	

Environmental Writing

EN 203	Advanced Composition (3)
EN 251	Literature of the Sea (3)
EN 306	Creative Writing (3)
EN 320	Literature of the Third World (3)
CM 109	Introduction to Mass Media (3)
CM 209	Broadcast Writing (3)

Green Design

AP 111	Fundamentals of Architecture I (4)
AP 118	Fundamentals of Architecture II (4)
AP 221	Site Development and Design (3)
AP 225	Intro to Passive Environmental Sys (3)
AP 325	Materials, Construction & Design (3)
FA 201	History of Architecture I (3)
or FA 202	History of Architecture II
or FA 308	Modern Architecture

Education*

PY 220	Developmental Psychology (3)
PY 315	Exceptional Child I (3)
ED 234	Learning & Teaching Strategies (3)
ED 351	Methods of Teaching Sci to Elem Stud (3)
ED 360	Language Arts & Teaching Reading (3)
MA 360	Teaching Math at the Elem & Middle (3)

*For Education concentration students seeking licensure, ED 232 substitutes for MA232, electives must be used to take PY352 and ED 425, and the 1 credit courses ED101, 102, 201, 202 must be taken as an overload

For minors outside the sciences or engineering, students must meet the published requirements. Additional necessary courses for a minor, beyond those specified above, will be taken as electives and may not include directed study or seminar courses unless specifically required by a department for the minor.

Mathematics

Professors Frey, LaVarnway (Chair) Marsden, True and Wiitala; Associate Professors McQuillan, Poodiack and Timoszyk; Assistant Professors Mathia, and Olsen; Lecturers Desorda and Olson.

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 better in at least three of the four courses MA121, MA122, MA223, MA224 and in at least six math courses at the 300-400 level, other than MA360. Courses listed in the third year and fourth year of the program as math electives are taken at the 300-400 level.

For a **minor in mathematics** 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 better. 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.

B.S. in Mathematics – Curriculum Map

First Year	Credits		Credits
MA121 Calculus I	4	MA122 Calculus II	4
EN101 Comp. & Lit.	3	EN102 Comp. & Lit.	3
Lab Science Elective	4	Lab Science Elective	4
Elective	3	MA241 Math Comp & Modeling	3
	14		14
Second Year			
MA223 Calculus III	4	MA224 Diff. Equations	4
MA306 Discrete Math	3	MA310 Linear Algebra	3
EN201 World Lit.	3	EN202 World Lit.	3
¹ General Education Elective	3	¹ General Education Elective	3
PS211 Univ. Physics I	4	PS212 Univ. Physics II	4
		MA250 Comm Mathematics	1
	17		18

Third Year

§MA303 or 309	3	²MA304 or MA312	3
MA311 Statistical Methodology	3	MA Elective	3
¹General Education Elective	3	¹General Education Elective	3
Elective	3	Elective	3
Elective	3	MA Elective	3
	15		15

Fourth Year

§MA309 or 303	3	MA Elective	3
MA411 Senior Seminar	3	MA Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	15		15

§MA303 and MA309 alternate as fall semester courses; both courses are required. For years these courses are offered. See Course Descriptions.

¹The four required general education electives are

1. a course in History (except HI109).
2. a Social Science Elective.
3. a course in Ethics, either PH 303 or PH 350.
4. a Humanities Elective.

² MA304 and MA312 alternate as spring semester courses; one of the two courses is required.

B.S. in Mathematics – Curriculum Map

(meeting requirements for Teacher Licensure - grades 7-12 mathematics teacher)

First Year	Credits		Credits
MA121 Calculus I	4	MA122 Calculus II	4
EN101 Comp. & Lit.	3	EN102 Comp. & Lit.	3
Lab Science Elective	4	Lab Science Elective	4
PY 211 Intro to Psych	3	MA241 Mathematical	
ED101 Found. Ed. I	1	Computation & Modeling	3
ED102 Found. Ed. II	1	ED201 Found. Ed. III	1
		ED202 Found. Ed. IV	1
	16		16

Second Year

MA223 Calculus III	4	MA224 Diff. Equations	4
MA306 Discrete Math	3	MA310 Linear Algebra	3
EN201 World Lit.	3	EN202 World Lit.	3
ED234 Learn Strat.	4	PY220 Devel. Psych	3
PS211 Univ. Physics I	4	PS212 Univ. Physics II	4
		MA250 Comm Mathematics	1
	18		18

Third Year

§MA303 or 309	3	¹ MA304 or MA312	3
MA311 Statistical Methodology	3	MA Elective	3
MA Elective	3	MA Elective	3
Elective (HI or PH or MA360)	3	HU Elect, if program inc MA360	3
PY342 Learn. and Motivation	4	PY324 Adoles. Psych.	3/4
PY315 Excep. Child	3	ED 363 Reading	4
	19		19/20

Fourth Year

§MA309 or 303	3	ED425 Student Teaching	12
MA411 Senior Seminar	3		
MA Elective	3		
Elective (HI or PH or MA360)	3		
HU Elective	3		
ED368 Curriculum Methods	4		
	19		12

§MA303 and MA309 alternate as fall semester courses; both courses are required. For years these courses are offered, see Course Descriptions.

Nursing

Professor McCarthy, Chair, Associate Professors Hansen and Carr-Warner; Lecturers S. Barnard, E. Byrne, H. Martin, A. Moore-Cox, and S. Mayo; Clinical Instructors D. Badger, S. Carr, T. Taylor, L. Volz, and M. Watson.

The Nursing Department offers a Baccalaureate Degree Nursing Program and an RN to BSN Degree Nursing Program.

Mission:

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). The first year of the BSN program is dedicated to courses in the Humanities, Sciences, Social Sciences and Introduction to Professional Nursing. This format provides an opportunity for students to begin foundation work before clinical courses. The clinical experience begins in the fall of the sophomore year and continues through the remainder of the program. By graduation students will have completed 1053 clinical hours in a variety of settings. Integrated into the curriculum are the concepts of the nursing process, principles of teaching and learning, concepts of leadership, caring and therapeutic communication, and the concepts of critical thinking and research. Clinical settings include hospitals, extended care facilities, community/home health agencies, doctor's offices, and clinics. A well equipped, modern, simulation laboratory provides an on-campus supervised area for skill and health assessment practice. Morning, evening, and weekend hours are utilized for the

¹ MA304 and MA312 alternate as spring semester courses; one of the two courses is required.

clinical experience. Nursing faculty present theory in the classroom, select clinical learning experiences, and guide and supervise students in the clinical area. Students will take a pre-NCLEX exam in their senior year to determine readiness for NCLEX exams after completing requirements for graduation. Students are required to purchase student uniforms. Specific requirements and costs are sent to students prior to their sophomore year. Students are responsible for their own transportation to and from clinical agencies. Nursing majors must have current 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 located in the front of this catalogue, nursing applicants must have successfully completed high school math including Algebra, Geometry, and Trigonometry and 3 years of science courses including Biology and Chemistry courses within the last 10 years. The Biology and Chemistry courses must include laboratory components.

Progression and Graduation:

A minimum grade of “C+” is required in all nursing courses. “C” grades are required in BI101, BI215, BI216, BI220, BI360, and CH112 to progress within the program. In order to progress, students must meet the criteria for academic progress as stated in the Academic Regulations. Upon successful completion of the program, the graduate is awarded the Bachelor of Science Nursing degree. Graduates become eligible to take the National Council Licensure Examination for Registered Professional Nursing (NCLEX-RN) when they meet the state board of nursing criteria for the state. In which the graduate plans to practice. Passing the NCLEX-RN examination entitles the graduate to practice nursing as an RN. State boards of nursing have 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 for conviction of a crime or felony and habitual intemperate use of or addiction to habit forming substances. The BSN Program is accredited by the National League for Nursing Accrediting Commission** and approved by the Vermont State Board of Nursing***.

**NLNAC, 61 Broadway 33 Floor, New York, NY 10006 (212) 363-5555

***Vermont State Board of Nursing, 81 River St., Drawer C, Montpelier, VT 05602 (802) 828-2396

B.S. in Nursing – Curriculum Map

First Year	Credits		Credits
EN101 Comp. & Literature I	3	EN102 Comp. & Literature II	3
BI101 Principles of Biology I**	4	CH112 Living Chem.**	4
PY211 Introduction to Psychology	3	PY220 Developmental Psych	3
SO201 Introduction to Sociology	3	Math Elective	3
NR103 Intro to Prof Nursing*	3	Humanities Elective	3
	16		16

Second Year

NR207 Fundamentals of Nursing I* 6	NR208 Med/Surgical Nursing I* 7
BI215 Anatomy and Physiology I** 4	NR403 Nursing Research* 3
NR211 Pharmacology* 3	BI216 Anatomy & Physiology II** 4
MA232 Statistics 3	NR305 Health Assessment* 3
	16
	17

Third Year

NR312 Med/Surgical Nursing II* 9	NR313 Mental Health Nurs* 4
BI360 Pathophysiology** 3	NR315 Matern/Child Health Nurs* 7
PY321 Organizational Psychology 3	BI220 Microbiology** 4
	15
	15

Fourth Year

NR405 Nurses Role in Health Promotion & Protection* 8	NR412 Nurses Role in Collaborative Health Care Practices* 8
NR404 Nursing Leadership* 3	NR300 Thematic Seminar* 3
Literature Elective++ 3	History Elective (except HI109) 3
	14
	14

*To progress in the Nursing Program a grade of "C+" or better is required in all Nursing courses. ** A grade of "C" or better is required in all science courses.

++Literature elective: The following courses qualify as Literature Electives: EN201,202, 205, 206, 210, 220, 225, 226, 227, 228, 244, 250, 251, 270, 333, 334, 372, 375, 376, 377, 391, 393, 394, 395, 396, 397, 398, 399, 406, 420, 450; FR321, 322, 327, 328, 415, 421; GR322, 324, 326, 415, 421; SP321, 322, 327, 328, 415, 421.

+Math elective must be MA 101, MA 102 or above (except MA 005 or MA 103, which are not considered Math Gen Ed requirements).

RN to BSN Baccalaureate Degree Nursing Track

The purpose of this track is to prepare professional nurses as generalists who can assume responsibility for planning and providing health care for individuals, groups, and populations in collaboration with other health professionals. This educational foundation provides a base for graduate study. Designed for graduates of associate degree and diploma nursing programs, it allows these graduates to expand their educational and professional experience. The program provides learning experiences that enable the student to develop the attitudes, knowledge, and skills essential to professional nursing practice.

The nursing courses in the curriculum are taken sequentially, each course building upon previous nursing courses. These courses focus on developing the personal and professional growth, leadership, caring, and teaching role of the nurse; assessing, planning, implementing, and evaluating care for individuals, groups, and populations; enhancing communication skills and preparing nurses to be critical consumers of research. Clinical nursing experiences take place in a variety of settings. Students are responsible for their own transportation to and from clinical agencies. A grade point average of 2.0 ("C" average) and a grade of "C+" or above in each nursing course and safe practice in all clinical experiences are required to progress in the program. In order to progress, students must meet the criteria for academic progress as stated in the Academic Regulations. The basic science, social science, and humanities courses provide a broad educational base for the student.

Admission requirements include current professional licensure and evidence of graduation from either an associate degree nursing program or a diploma nursing program, reference from the most recent employer and/or the administrator of the applicant's basic nursing program, a cumulative GPA of 2.0 ("C" average) with grades of "C" or better in all basic science and nursing courses.

Sixty pre-requisite credits (30 credits from support courses and 30 credits from nursing courses) may be transferred from an accredited college or university. All prerequisites required for the RN to BSN Program must be completed prior to entering the first clinical course, and students must satisfy all course prerequisites before enrolling in a university class. New graduates are admitted on a conditional basis and must successfully pass the National Council Licensure Examination for Registered Nurses (NCLEX-RN). Licensure is required prior to the first clinical course.

Applicants meeting these admission requirements who have graduated within the past ten years from an NLN-accredited associate degree nursing program are admitted directly into the program. Applicants who do not have transferable college credit for their basic nursing component (i.e. diploma graduates, graduates of non-NLN accredited associate degree nursing programs) and applicants who did not graduate from an associate degree nursing program within the past ten years can earn 30 college credits for nursing by successfully completing three nursing exams given by the American College Testing Program or the National League for Nursing. Students are admitted on a full-time as well as part-time basis and are required to complete the program within ten years. The RN to BSN Baccalaureate Degree Program is accredited by the National League for Nursing and approved by the Vermont State Board of Nursing, as part of the Baccalaureate Nursing Program.

RN to BS in Nursing – Curriculum Map

Third Year	Credits		Credits
NR303 Nursing in Today's World*	3	PY321 Organizational Psychology	3
BI360 Pathophysiology**	3	Chemistry Elective	4
Humanities Elective	3	NR305 Health Assessment*	3
MA232 Statistics	3	NR403 Nursing Research*	3
NR211 Pharmacology*	3	Math+ or Computer+ elective	3
	15		16
Fourth Year			
NR405 Nsg. Role in Health Promotion and Protection*	8	NR412 Nsg. Role in Collaborative Health Care Practices*	8
Literature Elective ++	3	Social Science Elective	3
NR404 Nursing Leadership*	3	NR300 Thematic Seminar	3
		Free Elective	3
	14		17
Pre-Requisite Courses (30 credits) + Nursing (30 credits)			
BI220 Intro. Microbiology	4	PY220 Developmental Psy	3
BI215-216 Human Anat & Physio	8	EN101-102 Comp. & Literature	6
SO201 Introduction to Sociology	3	History Elective (except HI 109)	3
PY211 Introduction Psychology	3	Nursing	30

*To progress in the Nursing Program a grade of "C" or better is required in all Nursing courses.

** A grade of "C" or better is required in all science courses.

++Literature elective: The following courses qualify as Literature Electives: EN201,202, 205, 206, 210, 220, 225, 226, 227, 228, 244, 250, 251, 270, 333, 334, 372, 375, 376, 377, 391, 393, 394, 395, 396, 397, 398, 399, 406, 420, 450: FR321, 322, 327, 328, 415, 421; GR322, 324, 326, 415, 421; SP321, 322, 327, 328, 415, 421.

+Math elective must be MA 101, MA 102 or above (except MA 005 or MA 103, which are not considered Math Gen Ed requirements)

Physics

Charles A. Dana Professor Parker; Professors Syed (Chair) and Tallman; Associate Professor Hyde.

B. S. in Physics – Curriculum Map

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.

First Year	Credits		Credits
EN101 Composition & Literature	3	EN102 Composition & Literature	3
MA121 Calculus I	4	MA122 Calculus II	4
CH103 Gen. Chemistry	4	CH104 Gen. Chemistry	4
¹ PS201 Gen. Physics I	4	¹ PS202 Gen. Physics II	4
	15		15
Second Year			
EN201 World Literature	3	EN202 World Literature	3
MA223 Calculus III	4	MA224 Diff. Equations	4
§PS205 Instrumentation or elec	4 or 3	PS232 University Physics III	3
² Electives (2)	6	² Electives (2)	6
	17 or 16		16
Third Year			
³ Mathematics	3	³ Mathematics	3
§PS331 Mechanics I or §PS354	4	§PS332 Mechanics II or §PS363	4
§PS441 Mod. Physics I or §PS423	4	§PS442 Mod. Physics II or §PS424	4
² Elective (1)	3	² Electives (2)	6
² Elective (1) or §PS205	3 or 4		
	17 or 18		17
Fourth Year			
§PS354 Thermodynamics or §PS331	4	§PS363 Optics or §PS332	4
§PS423 Elec. & Mag. I or §PS441	4	§PS424 Elec. & Mag. II or §PS442	4
PS461 Senior Project I	1	PS462 Senior Project II	1
PS451 Seminar I	1	PS452 Seminar II	1
² Electives (2)	6	² Electives (2)	6
	16		16

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

¹ PS211-212 may be substituted for PS 201-202.

² One elective must be a semester of history.

² One elective must be a course in psychology, sociology, economics, or political science.

² One elective must be an ethics course offered by the philosophy program.

³ These math courses are subject to approval of Physics Dept.

Minor in Physics

The student must complete six physics courses each valued at three or four degree credits. These courses must include PS205, PS232, and at least one course numbered above 300

Sports Medicine Athletic Training and Health Sciences

Assistant Professor Neuharth (Chair); Clinical Coordinator and Lecturer Osterman; Associate Professor Hernandez; Approved Clinical Instructors Botelho, Moylon, Taylor, and Therrien.

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 have 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 physical active populations. Educational content is based on cognitive (knowledge), psychomotor (skills), and clinical proficiencies (professional, practice-oriented outcomes). The Athletic Training Education Program incorporates hands-on experience in various professional settings. An optional summer internship provides the opportunity for exciting field placements, including the Olympic training center, professional sports training camps, sports medicine clinics, or campus-based sports camps. The Athletic Training Education Program is accredited by the Commission on the Accreditation of Athletic Training Education (CAATE). Graduates are eligible to sit for the National Athletic Trainers Association Board of Certification examination. Students may also elect to continue their studies in graduate school (recent graduates have entered graduate programs in athletic training, physical therapy, exercise physiology, chiropractic medicine, and physician-assistant schools).

Entrance Requirements:

All students must meet the University's General Admission Requirements located in the front of the catalogue. Students may decide to pursue the Athletic Training coursework track during the fall semester of their freshman year, but they must apply for entrance into the Athletic Training Education Program during the spring of their sophomore year. By that time they must have completed the following courses with a minimum grade of "C": SM 135, SM 138, SM 220, BI 215 and PE 161. Students not meeting the minimum criteria will need to correct any deficiencies before they can be formally accepted in the Athletic Training Education Program.

Progression and Graduation:

In order to progress in the Athletic Training Concentration, students must complete

the following additional courses, each with a minimum grade of "C": BI 216, BI 364, PE 260, PE 365, PE 371, and all sports medicine (SM) and athletic training (ST) courses (with the exception of SM437 and SM438). Students not meeting the minimum criteria will need to correct any deficiencies before continuing in the Athletic Training Education Program. Athletic Training students must adhere to Norwich University policies and procedures, including the policies and procedures of the Athletic Training Education Program and of clinical sites.

The **Health Science** concentration provides students with additional free electives to complete coursework necessary for graduate studies in physical therapy, exercise physiology, chiropractic medicine, health, fitness and wellness fields and physician-assistant programs.

B. S. in Athletic Training – Curriculum Map

First Year	Credits		Credits
BI101 Principles of Biology I	4	Free Elective	3-4
MA107 Precalculus	4	MA232 Elementary Statistics	3
EN101 Composition & Literature	3	EN102 Composition & Literature	3
SM135 Emer Care of Illness/Injury	2	PY211 Intro. Psychology	3
PE161 Physical Fitness & Wellness	3	SM138 Intro. Sports Medicine	3
	16		15-16
Second Year			
BI215 Anatomy & Physiology I	4	BI216 Anatomy & Physiology II	4
PS100 Elementary Physics	4	CH112 Living Chemistry	4
Literature Elective*	3	SM210 Assessment Injury & Illness	4
SM220 Care & Prevention	4	SM226 Clin Ed. in Sports Medicine	2
		PE260 Personal & Comm Hlth	3
	15		17
Third Year			
PE 365 Kinesiology	4	PE371 Physiology of Exercise	4
ST310 Upper Extremity Injuries	3	ST320 Lower Extremity Injuries	3
ST311 Clin Ed. Athletic Training I	2	ST 321 Clin Ed. Athletic Training II	2
SM422 Therapeutic Exercise	4	SM420 Therapeutic Modalities	4
Free Elective	3-4	Free Elective	3-4
	16-17		16-17
Fourth Year			
SM437 Senior Seminar I	2	SM438 Senior Seminar II	2
ST410 Clin Ed Athletic Training III	3	ST421 Clin Ed Athletic Training IV	3
History Elective	3	Humanities Elective ***	3
Free Elective	3-4	BI364 Pathophysiology Sports Med	
Free Elective	3-4	or Free Elective	3-4
		Free Elective	3-4
	14-16		14-16

All competency courses (BI, SM and ST) must be taken in the order presented and passed with a "C" or better before progressing.

* Literature Elective = must meet General Education literature requirement.

** History Elective = any History Department course (HI) except HI 109.

*** Humanities Elective = EN (above 206, excluding 240-242); FA; MU 101; CM 109,261,335,436; CN; Modern Language (above 112); or PH.

• SM426 Internship may be taken by qualified students in the summer between the

junior and senior year in place of two or four free electives.

B. S. in Sports Medicine – Curriculum Map

Health Science Concentration

First Year	Credits		Credits
BI101 Principles of Biology I	4	BI102 Principles of Biology II	4
MA107 Precalculus	4	MA232 Elementary Statistics	3
EN101 Composition & Literature	3	EN102 Composition & Literature	3
SM135 Emer Care of Illness/Injury	2	PY211 Intro. Psychology	3
PE161 Physical Fitness & Wellness	3	SM138 Intro. Sports Medicine	3
	16		16
Second Year			
BI215 Anatomy & Physiology I	4	BI216 Anatomy & Physiology II	4
PS201 General Physics I	4	PS202 General Physics II	4
Literature Elective*	3	SM210 Assess of Injury & Illness	4
SM220 Care & Prevention	4	SM226 Clin Ed. in Sports Medicine	2
		PE260 Personal & Comm Hlth	3
	15		17
Third Year			
PE 365 Kinesiology	4	PE371 Physiology of Exercise	4
SM422 Therapeutic Exercise	4	SM420 Therapeutic Modalities	4
CH111/103 General Chemistry I	4	CH112/104 General Chemistry II	4
Free Elective	3-4	BI Elective or	
		BI 364 Pathophysiology S.M.	4
		Free Elective	3-4
	15-16		19-20
Fourth Year			
SM437 Senior Seminar I	2	SM438 Senior Seminar II	2
CH205/225 Organic Chemistry	4	BI364 Pathophysiology Sports Med	
		or Biology Elective	4
History Elective	3	Humanities Elective***	3
Free Elective	3-4	Free Elective	3-4
Free Elective	3-4	Free Elective	3-4
	15-17		16-17

All SM (and ST courses if taken as free electives) must be taken in the order presented under the Athletic Training Concentration.

* Literature Elective = must meet General Education literature requirement.

** History Elective = any History Department course (HI) except HI 109.

*** Humanities Elective = EN (above 206, excluding 240-242); FA; MU 101; CM 109,261,335,436; CN; Modern Language (above 112); or PH.

• SM426 Internship may be taken by qualified students in the summer between the junior and senior year in place of two or four free electives.

Minor in Sports Medicine

A minor in sports medicine, designed to enhance student awareness in the sports injury and rehabilitation area without leading to certification, requires the following courses with a grade of C or higher SM210, PE260, SM220, PE353; plus two of the following six courses: PE365, PE371, PE373, SM422, SM420, or PE432. Completion of BI215-216 is necessary in order to satisfy prerequisites for courses in the minor.

SCHOOL OF NATIONAL SERVICES

Dean: Jonathan VanGuilder

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

Army Military Science

Professor COL Carney (Chair); Assistant Professors LTC Piper (Executive Officer), MAJ Hooks, MAJ Forsyth (Army ROTC Detachment Operations Officer and Dartmouth Liaison Officer), MAJ Gallagher, CPT Roszkowski, CPT Winker, CPT Stafford, Assistant Military Instructors MSG Allard, MSG Butcher, SFC Berry, SFC Brunzell, Senior Military Instructor SGM Bennett (Detachment Sergeant Major) and MAJ Sutton (Army ROTC Detachment Recruiting, Scholarship and Retention Officer)

The instructional program of the Department of Military Science is designed to attract, motivate, and prepare 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. The curriculum is structured to provide an appreciation and understanding of the importance land power has played and will continue to play in the defense of the United States. In addition it will develop the dynamic leadership required in the 21st century. It is also designed to complement the Cadet's goal of acquiring a baccalaureate degree in the course of study of his or her own choosing.

The Department's Leadership Laboratory is a weekly two-hour period of practical instruction that is an integral part of the Military Science curriculum. It is conducted one afternoon a week throughout each semester. Its objective is to provide practical application of classroom instruction to enhance leadership, physical fitness, and military skills training. The Mountain and Cold Weather Company and the Rescue Team offer additional training in military mountaineering, search and rescue, cold weather survival, and small unit light infantry tactics. The Ranger Challenge Team provides the opportunity for cadets to further develop their military and leadership skills by providing hands-on training in small unit patrolling. In the fall of each year, Ranger Challenge cadets compete against other New England schools. Armor Company is a special unit that trains in tank warfare, utilizing simulations. The Armory Company conducts training largely out of the National Guard Army, but is augmented with dismounted small unit tactics. Inside the armory students use some of the most advanced simulators to hone their maneuver skills and reinforce application of previous lessons. Each year, select members of the Armor Company vie for award of their spurs. To qualify for enrollment in the Army ROTC Advanced Course, MS-III and MS-IV, cadets must have a minimum academic cumulative average of 2.0, must meet established physical requirements, must attain a 2.0 or higher grade point average in the Army ROTC Basic Course (MS-I and MS-II), must demonstrate leadership potential, and must be accepted by the Professor of Military Science. The Advanced Course requires cadets to attend and successfully complete a thirty-five day Advanced Camp in the summer normally following the MS-III (junior) year.

In addition to the Military Science courses listed below, each cadet is required to complete the following courses: written communication, human behavior, computer literacy, and mathematical literacy. It is also recommended that each cadet complete

the following courses: management and national security. For specific details on these courses see your Assistant Professor of Military Science.

Air Force Aerospace Studies

Professor Col VanGuilder (Chair); Assistant Professor Maj Mercier, Maj Cooper, Capt Burt, Capt Bushey; Capt Peterson, NCOIC TSgt Bizier; Administration SSgt Hill.

The curriculum of the Air Force ROTC program provides professional preparation for future Air Force officers. It is designed to assist men and women to apply their total college experience toward responsible service as commissioned officers. The AFROTC curriculum 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. Course work in the GMC deals with the structure, doctrine, and function of the Air Force; communicative skills; and the historical role of airpower. 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 deals with 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 effected. 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.

Naval Science

Professor Col Patrick Delatte (Chair); Associate Professor GySgt Tsang; Assistant Professors CDR Hagenlocher, Maj Bloomquist, Capt Tedeschi, LT Batchelder, LT Kindred, LT Mariano.

The mission of the Department of Naval Science at Norwich University is to develop young men and women morally, mentally, and physically and to instill in them the highest ideals of courage, honor, and commitment. The program educates and trains young men and women for leadership positions in the increasingly technical U.S. Naval service. Through the National Scholarship Board and the College Program, midshipmen are prepared for service as commissioned officers in the active components of the U.S. Navy or U.S. Marine Corps reserve.

The primary goals of the Naval ROTC Program are to provide students: (1) a strong sense of personal integrity, honor, and individual responsibility; (2) leadership training that will enable them to successfully lead others under stressful and demanding conditions; (3) an understanding of the fundamental concepts of naval science and a

basic level of military aptitude; (4) an academic background that will allow them to successfully undertake the demanding leadership and managerial positions they will receive; (5) a high state of physical fitness for personal health and performance.

The Naval Science Laboratory is a weekly laboratory, normally two hours in length, conducted during each academic semester. Emphasis is placed on professional training that is not of an academic nature. 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.

SCHOOL OF SOCIAL SCIENCES

Dean: Thomas Taylor

Mission:

It is the mission of the School of Social Sciences, in the spirit of the liberal arts, to guide and educate students: (1) to undertake an in-depth exploration of the social sciences as a major field of study; (2) to consider and analyze a variety of perspectives on domestic and global issues; (3) to appreciate the complexities of social, cultural, and political interactions, past and present; and (4) to become critical thinkers and active citizens in an ever-changing world.

The School of Social Sciences is comprised of the Departments of History and Political Science; Justice Studies and Sociology; and Psychology with Teacher Education Licensure.

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.

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.

History and Political Science

Department Chair: M. Andrew.

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.

History

Charles A. Dana Professor Lord; Professor Taylor; Associate Professors Brucken, McCann and Pennington; Assistant Professors Gray and Sodergren; Visiting Associate Professor Greenstein; Adjunct Faculty Zirblis.

Requirements for History Major:

History majors must complete at least 36 credits in History (HI) and PO202 and PO105 with a grade of "C", or higher. All history majors are required to complete 12 History courses including the distribution requirements and HI109; 221; 222; 430, 431, 432, or 433 with a grade of "C" or higher.(HI 430, 431, 432, and 433 may count in the distribution requirements.) Additionally, majors are required to pass EC201 or EC202.

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 1648)- 1 course

Non-Western – 1 course

Minor in History:

For a minor in history, the student must complete six history courses (HI) with a grade of "C" or better. Required courses:

HI221 American History to 1865

HI222 American History since 1865

HI108 World Civilization

Elective courses: Three history (HI) courses chosen from the other offerings of the Department, only one of which is in the field of United States history.

B.A. in History – Curriculum Map

Program Director: Christine McCann

Suggested Sequence of Courses for History Majors

First Year	Credits		Credits
EN101 Composition & Literature I	3	EN102 Composition & Literature, II	3
*HI107 World Civ. I or HI elective	3	*HI108 World Civ II or HI elective	3
Modern Language	6	HI109 Historical Methods	3
Elective	3	Modern Language	6
	15		15
Second Year			
EN201 World Literature I	3	EN202 World Literature II	3
Math Elective (except MA 103)	3	Math Elective (except MA103)	3
HI221 U.S. History Survey, I	3	HI222 U.S. History Survey, II	3
PO105 American Politics	3	PO202 Comparative Government	3
Humanities Elective	3	Humanities Elective	3
	15		15
Third Year			
EC201 or 202 Economics	3	History Elective	3
History Elective	3	History Elective	3
History Elective	3	Elective	3
Humanities Elective	3	Humanities Elective	3
Lab Science Elective	4	Lab Science Elective	4
	16		16
Fourth Year			
History 43X Seminar	3	History Elective	3
History Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
	15		15

*HI107 and 108 are open only to first year students. If not taken in the first year, students must substitute upper level History (HI) courses.

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 Juniors and Seniors, otherwise by written permission of instructor.

400 level open only by permission.

International Studies

Program Director: D. Thalman

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, multi-national corporations, non-profit organizations, law, or the military.

Program Requirements

In addition to the Bachelor of Arts and General Education requirements, all International Studies (IS) majors are required to complete IN101, IN410, PO105, PO202, PO215, HI108, EC201 and EC202. IS majors must also complete two history electives, and EC419. IS majors must select four Area Studies courses, two in political science and two in history. The political science options are: PO310, PO320, PO340, and PO348. The history options include any history course in this catalogue designated as European or Non-Western, as well as HI338 and HI339 (U.S. Diplomatic History).

In addition, all IS majors are required to study abroad for at least one semester. Ideally, students will engage in foreign study in their Junior Year. Accommodations for study abroad at other times can be made for students with extenuating circumstances. Study abroad can also include an internship or other approved work experience. IS majors are required to take all courses, and any internship, during their time abroad in a foreign language they have been studying prior to their departure. At least one of their 300 level modern language courses will be taken abroad and transferred to Norwich.

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).

In order to study abroad and successfully complete the major, IS majors must have at least a 2.5 GPA by the end of their Sophomore year. For an IS major to graduate, the following courses must be completed with a grade of "C" or better: IN101, IN410, PO105, PO202, PO215, Modern Language 205 and 206, EC201, EC202.

B.A. in International Studies – Curriculum Map

First Year

	Credits		Credits
EN101 Composition I	3	EN102 Composition II	3
HI 108 World Civilization I	3	PO105 American Politics	3
IN101 Intro International Studies	3	Modern Language 112	6
*Modern Language 111	6	Math Elective	3
	15		15

Second Year

EN201 World Literature I	3	EN202 World Literature II	3
EC201 Principles Economics (macro)	3	EC202 Prin. of Econ. (micro)	3
*Modern Language 205	3	Modern Language 206	3
Math Elective	3	**PH Elective	3
PO 215 International Relations	3	PO 202 Comparative Politics	3
	15		15

Third Year – (Study Abroad)

Elective	3	Humanities Elective	3
Elective	3	*** Comp. Pol./Hist. Elec.	3
Elective	3	Lab science	4
Modern Language (300 level)	3	Modern Language (300 level)	3
Elective	3	Elective	3
	15		16

Fourth Year

Humanities Elective	3	Humanities Elective	3
EC 419	3	Elective	3
Lab Science	4	History Elective	3
***COMP. PO./Hist. Elective	3	***COMP. PO./Hist Elective	3
***COMP. PO./Hist. Elective	3	IN410 Sem International Studies	3
	16		15

*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.

**Must satisfy the General Education ethics requirement.

***Comparative Politics or History Elective chosen as follows: two courses from PO310, PO320, PO340, or PO348 and two history courses in this catalogue designated as European or Non-Western, as well as HI338 and HI339 (U.S. Diplomatic history).

War and Peace

Program Director: S. 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. A particular emphasis is on the "Western Way of War"—the experiences and characteristics that distinguish warfare in the West from the rest of the world. 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.

BA Program in Studies in War and Peace

University General Education and BA Requirements (14 courses)

EN101/102 Composition and Literature (2 courses)

EN 201/202 World Literature (2 courses)

Laboratory Science (2 courses)

Mathematics (2 courses other than 005/103)

Modern Language (2 intensive courses)

Humanities Electives are chosen from the list below. Four courses in two different disciplines are required.

1. EN270 Military Literature or EN251 Literature of the Sea or EN244 Literature of Leadership

2. PH 340 Philosophy of Non-Violence or PH 303 Survey of Ethics.

3 and 4. Any two of the following: CM 109, 261, 335, or 436; any English course above 206 (except 240, 241, 242), FA 221, 22, 240, 250, 250; MU 101; any Philosophy course, any Modern Language above 112 and all Chinese courses

Core Courses (11 courses with a grade of "C" or higher)

HI 107/108 History of World Civilization (2 courses)

HI 235/236 Military History (2 courses)

PO101 Introduction to Politics or GE 104 Introduction to Geography

PO105 American Government

Core electives (4 courses chosen from the following)

HI222: American History II

HI343: Recent History of the US

HI338: US Diplomatic History I

HI339: US Diplomatic History II

HI334: The Citizen-Soldier

HI332: The American Revolution

HI341: US Civil War Era

PO333: American Foreign Policy

PO330: American Citizenship

PO305: Geopolitics

SO300: Topics in Sociology (Sociology of the Military)

Seminar (choose one of the following)

HI430, 431, 432, 433 or 434: History Seminar

HI490 and 491: Honors in History

PO410: Capstone Seminar in Political Science

PO490 and 491: Honors in Political Science

International Affairs

Three of the following courses:

GE300: Topics in Geography

HI300: Topics in History

HI312: The Far East in Modern Times

HI314: The Middle East in Modern Times

HI316: Latin America: The Republican Period

HI318: Problems in African History

HI326: Nazi Germany and the Holocaust

HI329: Soviet and Post-Soviet Russia

HI352: Early Modern Europe

HI353: Europe in the 19th century

HI354: Europe since 1914

HI355: Modern Wars (may be taken twice with different topics)

PO202: Comparative Politics

PO320: Topics in Area Studies

PO348: Asian Politics

PO310: European Politics

PO415: International Law

PO405: International Organizations

PO340: Revolution and Forces of Change

PO412: War and Peace

One course in pre-modern history, chosen from the following:

HI301: Classical Greece

HI302: History of Rome

HI306: The Crusades

HI313: Islamic Civilization to 1453

Free electives (9 courses)

B.A. Studies in War and Peace – Curriculum Map

First Year	Credits		Credits
EN101 Composition & Literature I	3	EN102 Comp & Literature II	3
Modern Language	6	Modern Language	6
HI107 World Civilization I	3	HI108 World Civilization II	3
PO105 American Politics	3	PO101 Introduction Politics	3
	15		15
Second Year			
EN201 World Literature, I	3	EN202 World Literature, II	3
Mathematics (except MA103)	3	Mathematics (except MA103)	3
Humanities elective	3	Humanities elective	3
HI235 Military History I	3	HI236 Military History II	3
Free Elective	3	Free Elective	3
	15		15
Third Year			
Lab Science	4	Lab Science	4
Humanities elective	3	Humanities elective	3
Core elective	3	Core elective	3
*International Aff/Premodern Hist.	3	*International Affairs/Premod Hist	3
Free Elective	3	Free Elective	3
	16		16
Fourth Year			
Seminar	3	Free Elective	3
Core elective	3	Core elective	3
*International Aff/Premodern Hist.	3	*International Affairs/Premod Hist.	3
Free Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	15		15

*Four International Affairs/Premodern electives from courses listed under this heading in the description of degree requirements.

Political Science

Program Director: C. Newton

Professor Kearsley; Associate Professors Andrew and Jagemann; Visiting Associate Professor Thalman; Assistant Professor Newton; Adjunct Faculty Doyle, Nielson and K. 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 expediences. To do so, the program encourages students to appreciate and understand theories about government and politics, as well as the methods of the discipline.

Distribution Requirements for Political Science Majors:

PO105: American Politics,

PO101: Introduction to Politics,

PO215: International Relations or

PO202: Comparative Politics,

PO220: Research Methods,

PO410: Capstone Seminar in Political Science (Foundation Courses)

One course from each of the following groups:

Group 1

PO303: Political Philosophy,

PO325: Contemporary Political Theory,

PO330: American Citizenship (Political Philosophy)

Group 2

PO312: The Presidency,

PO313: Political Parties and Interest Groups,

PO314: The Legislative Process,

PO315: Public Opinion and Political Behavior,

PO321: Constitutional Law (American Politics)

Group 3

PO333: American Foreign Policy,

PO340: Revolution and Forces of Change,

PO348: Asian Politics,

PO310: European Politics,

PO320: Topics in Area Studies (Comparative Politics)

Group 4

PO305: Geopolitics,

PO405: International Organizations,

PO415: International Law,

PO412: War and Peace (International Relations)

Group 5

Area requirements HI221, HI222, HI Elective (non-Western), all of which must be passed with a grade of "C" or better;

EC201 or 202,

EN112,

MA232, and

PH Elective with an ethics component, which includes all PH courses except PH230.

Group 7

Literature course above EN202 from the following: The following courses qualify as Literature Electives: EN205, 206, 210, 220, 225, 226, 227, 228, 244, 250, 251, 270, 333, 334,

372, 375, 376, 377, 391, 393, 394, 395, 396, 397, 398, 399, 406, 420, 450: FR321, 322, 327, 328, 415, 421; GR322, 324, 326, 415, 421; SP321, 322, 327, 328, 415, 421.

EN420 and 425 may be designated as literature courses when specified.

All PO courses taken to satisfy the political science major distribution requirements must be passed with a “C” or better.

B. A. in Political Science – Curriculum Map

For a minor in Political Science, the student must complete 18-credits (six courses) with a grade of “C” or better.

Required Courses:

PO101: Introduction to Politics

PO105: American Politics

PO215: International Relations or PO202: Comparative Politics

PO220: Research Methods

PO Elective (must be upper-division)

PO Elective (must be upper-division)

First Year	Credits		Credits
EN101 Comp & Literature I	3	EN102 Comp & Literature II	3
Modern Language	6	Modern Language	6
PO105 American Politics	3	PO101 Introduction to Politics	3
		Elective	3
	12		15
Second Year			
EN201 World Literature, I	3	EN202 World Literature, II	3
HI221 Amer. Hist. Survey, I	3	HI222 Amer. Hist. Survey, II	3
Math Elective (Except MA103)	3	MA232 Elem. Statistics	3
PO220 Research Methods	3	EC201 or 202 Economics	3
Elective	3	PO215 International Relations or PO202 Comparative Politics	3
	15		15
Third Year			
EN112 Public Speaking	3	HI (non-western) Elective	3
Lab. Science	4	Lab. Science	4
Philosophy Elective	3	Humanities Elective	3
Political Philosophy Elective	3	American Politics Elective	3
Comparative Politics Elective	3	Internatl Relations Elective	3
	16		16
Fourth Year			
Humanities Elective	3	Humanities Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
Elective	3	Elective	3
PO upper-division elective	3	PO410 Capstone Seminar	3
PO upper-division elective	3		
	18		15

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.

Justice Studies and Sociology

Charles A. Dana Professor Shernock (Chair); Professor Clements; Associate Professors Ryan and Shtull; Assistant Professors Adler, Maier, Peterka-Benton, and Vieira; Visiting Faculty: Orrick; Adjunct Faculty: Aumand, Chandler, Crowson, Cucinelli, Garland, Hartman, Henkin, Logan, Ormsby and Walton.

Criminal Justice

The baccalaureate program in Criminal Justice 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 socio-cultural 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 to the development of leadership skills.

In order 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 Vermont Center for Justice Research (VCJR), which is currently administered by the Norwich criminal justice faculty. The VCJR, 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.

The department also offers a special minor in computer crime and forensics with scholarships available from the Information Assurance Scholarship Program.

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 and over a 2.50 average (on a 4.00 point scale) in high school academic work.

B.A. in Criminal Justice – Curriculum Map

First Year	Credits		Credits
#CJ 101 Introduction to CJ	3	#CJ 102 Substantive Criminal Law	3
EN 101 Composition & Literature	3	EN 102 Composition & Literature	3
Foreign Language (or Lab Science & *Sociology)	6-7	*Foreign Language (or Lab Science & Psychology)	6-7
		Math Elective (excludes MA103)	3
	12-13		15-16
Second Year			
CJ 209 Methods Soc. Sci. Research	3	#CJ 201 Criminology	3
EN 201 World Literature	3	EN 202 World Literature	3
Lab Science & *Sociology (**or Foreign Language)	6-7	*Lab Science & Psychology (**or Foreign Language)	6-7
MA 232 Statistics (section CJ majors)	3	Political Science Elective	3
	15-16		15-16

Third Year

#CJ 308 The Police	3	#CJ 310 The Courts	3
#CJ 301 Criminal Procedure	3	#CJ 312 Corrections	3
History Elective (preferably HI 222)	3	#IS 300	3
PH 324 Criminal Justice Ethics	3	Humanities Elective	3
SO 214 Race and Ethnic Minorities	3	Free Elective	3
	15		15

Fourth Year

#CJ Elective	3	# CJ 410 (Senior Seminar in CJ)	3
PO 321 US Con. Law (or free elect)	3	*** PO 324 Civ. Lib. (or free elec.)	3
Humanities Elective (lit course)	3	#CJ Elective	3
Humanities Elective	3	Free Elective	3
Free Elective	3	Free Elective	3
	15		15

*Preference for SO 201 Introduction to Sociology or SO 202 Problems of Modern Society; excludes

SO 214 Racial and Ethnic Relations

**If not taken freshman year

***PO324 should be taken in spring only if PO321 was not taken in fall

Grade of "C" or higher required in these courses (CJ electives).

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

Minor in Criminal Justice

For the minor in criminal justice, the student must complete six courses (18 degree credits)

with a grade of "C" or better that must include:

CJ101 Introduction to Criminal Justice

CJ102 Substantive Criminal Law

CJ201 Criminology

Two courses from among:

CJ308 The Police

CJ310 The Courts, and

CJ312 Corrections

One CJ elective (any CJ course other than CJ209 –

Methods of Social Research)

For the minor in Cyber Crime and Computer Forensics see listing in Business and Management School.

Minor in Sociology:

SO201 Introduction to Sociology

SO/CJ 209 Methods of Social Science Research or

one of the following social science methodology courses: HI109, PO220, PY313, or PY314

SO202 Problems of Modern Society

SO212 Cultural Anthropology or SO214 Racial & Cultural Minorities

Two elective courses (or 6 degree credits) from other offerings in sociology, including the SO300 Selected Topics, SO212 or SO214 not used in the above selection, other than

SO/CJ209 – sociology cross-listed courses must be taken under the SO number to apply to the minor.

CJ majors pursuing a Sociology minor cannot count cross-listed courses other than CJ/SO209 for both major and minor.

Psychology

Professors Miller and Stones (Chair); Associate Professors Bandy, D. Bryne, and Fleming; Assistant Professor Glanc; Visiting Assistant Professor Thurber; Adjunct Faculty Meyer and Philo.

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. A major in psychology must complete a minor in an area other than Psychology and fulfill the general education and bachelor of arts requirements set forth in this catalogue with the following additions and restrictions:

A. Each of the following courses:

1. BI101-102, MA232,
2. a history course,
3. a non-psychology social science elective, and
4. a mathematics elective, and
5. note that other courses in math/science (such as MA107, MA108, MA121, MA222, CH103, CH104, PS201, PS202) are strongly recommended for students planning to pursue specific postgraduate pathways.

B. The following psychology courses with a grade of "C" or better;

1. PY197 A Preface to Psychology I
2. PY198 A Preface to Psychology II
3. PY297 A Preface to Psychology III

4. PY298 A Preface to Psychology IV
 5. PY211 Introduction to Psychology
 6. PY220 Developmental Psychology
 7. PY313 Experimental I
 8. PY314 Experimental II
 9. PY360 History of Psychology
 10. PY398 Thesis Preparation
 11. PY401 Senior Seminar in Psychology
 12. PY498 Senior Thesis*
 13. PY402 Conference (“C” or “Satisfactory”)
 14. PY403 Thesis Presentation (“C” or “Satisfactory”)
- * Individual research project required for graduation

C. One of each of the following area courses;

1. PY212 Abnormal or PY240 Social or PY241 Personality
2. PY230 biopsychology or PY263 Perception
3. PY344 Cognition
4. PY352 Learning and Memory or PY315 Exceptional Child

D. Minor in another area

E. 122 degree credit hours

B.A. in Psychology – Curriculum Map

First Year	Credits		Credits
EN101 Composition and Literature	3	EN102 Composition & Literature	3
Modern Language	6	Modern Language	6
PY211 Introduction to Psychology	3	PY220 Developmental Psychology	3
PY197 Preface to Psychology I	1	PY198 Preface to Psychology II	1
	13		13
Second Year			
EN201 World Literature	3	EN202 World Literature	3
PY230 Biopsychology or PY263 Perception	3	PY212 Abnormal Psychology or PY240 Social or PY241 Personality	3
PY313 Experimental Psychology I	3	PY314 experimental Psychology II	3
MA232 Elementary Statistics	3	Humanities Elective	3
BI101 Principles of Biology	4	BI102 Principles of Biology	4
PY297 Preface to Psychology III	1	PY298 Preface to Psychology IV	1
	17		17
Third Year			
PY344 Cognition	4	PY398 Thesis Preparation	3
Literature/Humanities Elective	3	PY352 Learning or PY 315 Exceptional	3-4
Mathematics Elective	3	History Elective	3
Minor Elective	3	Minor Elective	3
Elective	3	Elective	3
	16	PY402 Conference	0
			15-16

Fourth Year

PY498 Senior Seminar Thesis	3	PY401 Senior Seminar	3
PY360 History of Psychology	3	Humanities Elective	3
Humanities Elective	3	Minor Elective	3
Social Science Elective	3	Minor Elective	3
Minor Elective	3	Minor Elective	3
		PY 403 Conference	0
	15		15

Total Credits = 121

Psychology majors must complete the General Education and Bachelor of Arts requirements listed in this catalogue.

Minor in Cross-Cultural Psychology

- A. Prerequisite
 - 1. PY211 Introduction to Psychology
- B. Required Courses
 - 1. PY236 Cross-Cultural Psychology
 - 2. PY240 Social Psychology
 - 3. PY344 Cognition
- C. One of the following:
 - 1. PY241 Personality
 - 2. PY263 Perception
 - 3. PY321 Organizational Psychology
 - 4. PY352 Learning and Memory
- D. Both of the following:
 - 1. SO212 Cultural Anthropology
 - 2. SO214 Racial and Cultural Minorities

Minor in Engineering Psychology

- A. Prerequisite
 - 1. PY211 Introduction to Psychology
- B. Required Courses
 - 1. PY232 Engineering psychology
 - 2. PY344 Cognition
 - 3. PY350 Environmental Psychology
- C. One of the following:
 - 1. PY230 Biopsychology
 - 2. PY263 Perception
 - 3. PY352 Learning and Memory
- D. One of the following:
 - 1. PY220 Developmental Psychology
 - 2. PY240 Social Psychology
 - 3. PY241 Personality
 - 4. PY321 Organizational Psychology

Minor in Forensic Psychology

- A. Prerequisite
 - 1. PY211 Introduction to Psychology
- B. Required Courses
 - 1. PY234 Forensic Psychology
 - 2. PY355 Psychology and the Law

- C. Two of the following:
 1. PY212 Abnormal Psychology
 2. PY220 Developmental Psychology
 3. PY240 Social Psychology
 4. PY241 Personality
- D. Two of the following:
 1. PY230 Biopsychology
 2. PY263 Perception
 3. PY344 Cognition
 4. PY352 Learning and memory

Minor in Political Psychology

- A. Prerequisite
 1. PY211 Introduction to Psychology
- B. Required Courses
 1. PY238 Political Psychology
 2. PY240 Social Psychology
 3. PY344 Cognition
 4. PO105 American Politics
- C. One of the following:
 1. PO315 Public Opinion and Political Behavior
 2. PO333 U.S. Foreign Policy
- D. One of the following:
 1. CM304 Corporate Communications
 2. PY241 Personality

Minor in Psychology

- A. Prerequisite
 1. PY211 Introduction to Psychology
 2. PY314 Experimental Psychology II
- B. At least one and no more than three of the following:
 1. PY212 Abnormal Psychology
 2. PY230 Biopsychology
 3. PY240 Social Psychology
 4. PY241 Personality
 5. PY263 Perception
 6. PY344 Cognition
 7. PY352 Learning and Memory
- C. One course at the 300 or 400 level
- D. One course at or above the 200 level

Teacher Education

Program Director: Associate Professor D. Byrne; Visiting Professor T. Thurber.

Program Theme

The Teacher Education Licensure Program strongly believes that significant learning occurs through modeling and reflection. Students are encouraged, through their participation in courses, field work and service learning to reflect upon their learning experiences. This reflection aids the prospective teacher to join theory to practice. Numerous school-based experiences allow the students many opportunities to work with various teachers who demonstrate best teaching practices. The Teacher Education

Licensure Program is a well-rounded program that provides teaching pedagogy with numerous school based opportunities. The program consists of the elementary track and the secondary track. Prospective elementary teachers may major in Psychology or in another Liberal Arts or a Math/Science discipline. Prospective secondary teachers may major in Liberal Arts or a math/Science discipline. This will allow for a strong core of education courses to interface with either the Liberal Arts or Math/Science major. This model provides the teacher education licensure student with versatile, engaging, learning experiences.

The program consists of two tracks: elementary and secondary.

Secondary Track

In order to be recommended for licensure as a secondary school teacher, a student must:

A. be enrolled in an appropriate secondary school major:

1. English
2. history
3. international studies
4. political science
5. mathematics
6. geology
7. physics
8. chemistry
9. biology

B. complete each of the following:

1. PY211 Introduction to Psychology
2. PY220 Developmental Psychology
3. PY324 Adolescent Psychology
4. PY352 Learning and Memory
5. PY315 The Exceptional Child - (For Teacher Education Students only)

C. complete each of the following:

1. ED101 Foundations of Education I
2. ED102 Foundations of Education II
3. ED201 Foundations of Education III
4. ED202 Foundations of Education IV
5. ED234 Learning Strategies
6. ED363 Reading and Writing in the Content Areas
7. ED368 curriculum methods for Secondary Students
8. ED425 Internship

D. recommended

MA360 Teaching of Math at Elementary and Middle School Levels for math majors
ED351 Science methods for Elementary and Middle School for science majors

Elementary Track

Students preparing to be elementary school teachers must:

A. fulfill the degree requirements for the psychology major or a liberal arts or science major; such as Environmental Science

B. complete each of the following:

1. PY211 Introduction to Psychology
2. PY220 Developmental Psychology
3. PY352 Learning and Memory

4. PY315 The Exceptional Child – For Teacher Education Students Only

C. complete each of the following:

1. ED101 Foundations of Education I
2. ED102 Foundations of Education II
3. ED201 Foundations of Education III
4. ED202 Foundations of Education IV
5. ED232 Curriculum and Methods of the Elementary School Subjects
6. ED234 Learning Strategies
7. ED360 Language Arts and Teaching Reading in the Elementary School
8. MA360 Teaching of Math at Elementary and Middle School Levels
9. ED351 Science Methods for Elementary Teachers
10. ED425 Internship

Additionally, all teacher licensure candidates in both tracks must:

- A. attain a 3.0 average in all course work that constitute the major and the education licensure program
- B. complete 60 hours of observation and practicum;
- C. attain an overall “B” (3.0) average to enroll in ED425 Student Teaching and
- D. receive a grade of “B” or better in ED 425 Internship.

These four requirements currently reflect the Vermont State Department of Education requirements. They are subject to change due to the Vermont Department of Education requirements.

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 nonmatriculating students. Each candidate’s course work and experience are evaluated and a program of study is recommended based upon the traditionally approved Teacher Education/Licensure Program. 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 regular program.

The Portfolio

All licensure candidates are required to complete a portfolio. Development of the portfolio begins in ED234 during your sophomore year and is reviewed during subsequent courses. Substantial progress toward completion must be demonstrated before the student is admitted to student teaching. After student teaching has been completed with a “B” or better, the portfolio is submitted to a full-time education faculty member and a second reader for review. If approved, the portfolio is presented to the Norwich University Licensure Committee and upon approval, by the committee, the candidate is recommended for licensure for the appropriate subject and/or level. The portfolio must be approved no later than one year after completion of the program. It must reflect any changes in state regulations.

Praxis Tests:

In order to be recommended for licensure, candidates must achieve a passing score on the Praxis I and II tests. Both Praxis I and II are pre-professional skills tests that Teacher Education Licensure Candidates are required to take. Praxis I should be completed by the end of 60 credits. Praxis II should be completed by the end of 90 credits.

All candidates seeking initial Vermont licensure must meet the composite Praxis I test score of 526 (e.g., Reading – 177, Writing – 174, and Mathematics – 175).

Alternative to Praxis: The Vermont State Board of Education adopted the following assessments as alternatives to Praxis I. The results of these assessments will be accepted in lieu of Praxis I if teacher education licensure candidates meet the total and minimum scores presented below. These scores are equivalent to meeting Vermont’s passing scores on the Praxis I Test:

- Total Score Verbal/English Math/Quantitative Graduate Record Exam (GRE) 1100 500 500
- Scholastic Aptitude Test (SAT) 1100 500 500
- American College Test (ACT) 22 22
- Description of Courses Education (ED)

Minor in Elementary Education:

The student will complete the following courses:

- ED234 Learning Strategies – this course gives an overview of lesson planning, unit planning, Vermont Framework of Standards, teaching strategies, and classroom management.
- PY220 Developmental Psychology – this course is an overview of growth and development.
- PY315 The Exceptional Child – this course investigates special education – laws and regulations – various disabilities.

And three of the following four courses:

- ED232 Curriculum and methods of the elementary School Subjects
- ED351 Methods of Teaching Science to elementary Students
- ED360 language Arts and Teaching Reading in the Elementary School
- MA360 Teaching mathematics at the Elementary and Middle School Level

Minor in Secondary Education:

- ED234 Learning Strategies – this course gives an overview of lesson planning, unit planning, Vermont Framework of Standards, teaching strategies, and classroom management.
- PY220 Developmental Psychology – this course is an overview of growth and development.
- PY315 The Exceptional Child – this course investigates special education – laws and regulations – various disabilities.
- ED363 Reading and Writing in the Content Area
- ED368 Curriculum & Methods for Secondary Students
- PY324 Adolescent Psychology

SCHOOL OF GRADUATE STUDIES & CONTINUING EDUCATION

Dean: William Clements

Associate Dean of Academics: Harold Kearsley

Associate Dean of Administration: Debra Wick

Mission:

It is the mission of the School of Graduate Studies to provide lifelong learners with a dynamic academic environment, experiential in nature and focused on real-world challenges; to engage in communities of inquiry; to develop the skills of informed, ethical, and moral leadership; to work collaboratively in the pursuit of professional excellence and sound decision-making; to impart relevant and useful knowledge; and to prepare graduates to assume positions of leadership and service within the global community while committed to the values of Norwich University.

Graduate Studies:

The School of Graduate Studies is committed to lifelong and experiential learning in a distance education delivery format. All master's degrees offered by the school are delivered online and designed to meet the professional and career needs of adult learners. The School of Graduate Studies is built on a rigorous academic environment emphasizing interactive classes, mentoring relationships with faculty, extensive hands-on learning and application to the workplace or real-world challenges, consistent with Alden Partridge's experiential approach to education. A wide variety of teaching tools are available to both faculty and students, with easy access to the resources available through the Norwich University online library.

School of Graduate Studies programs share a similar structure and require 30-36 credit hours to complete through six credit hour seminars, eleven weeks in duration. The School of Graduate Studies strives to create classes that facilitate high levels of interaction and mentoring with typical enrollments of 12-16 students, who often proceed through the program with other students who enter the program at the same time. Seminars are asynchronous, allowing students to participate at any time, day or night, from anywhere in the world. Students may enter a program at one of four enrollment periods during the year in September, December, March and June, and typically enroll for a twelve credit hour semester with seminars taken sequentially.

All graduating students are required to attend an annual residency conference held on campus each year, typically in June. Students participate in the conference through a variety of capstone and academic events and conclude the week-long event with academic recognition and commencement ceremonies.

The School of Graduate Studies offers the following master's degrees: Master of Arts in Diplomacy, Master of Arts in Military History, Master of Business Administration, Master of Civil Engineering, Master of Public Administration, Master of Science in Information Assurance, Master of Science in Nursing Administration, and Master of Science in Organizational Leadership. Several programs provide focused study in an area as a concentration of 12-18 credit hours; program descriptions should be consulted for more detail.

The School of Graduate Studies also offers a graduate certificate in Teaching and Learning, and post-baccalaureate certificate in Business Administration for successful completion of the Master of Business Administration pre-requisite seminars.

Admission:

School of Graduate Studies programs require a bachelor's degree or equivalent from a regionally accredited institution of higher learning (or equivalent degree from a foreign institution, as evaluated by WES, AACRAO or IERF), letter of intent or application essay, and grade point average of 2.75 or greater (except for the Master of Science in Nursing which requires at 3.0 grade point average). A score of 550 or higher on the TOEFL for students whose primary language is not English is also required. The Graduate Record Exam or Graduate Management Aptitude Test may be required for students who were awarded the bachelor's degree within five years of application to a master's program. Additional requirements may apply to specific programs and include but are not limited to technical pre-requisites, a two year work experience minimum, and case study agreement with the student's employer.

Accreditation:

Specialty accreditation for School of Graduate Studies programs is a goal of the school. Norwich University, through its School of Business and Management, is nationally accredited by the Association of Collegiate Business Schools and Programs (ACBSP) for the offering of the Master of Business Administration. The mission of the ACBSP is to establish, promote, and recognize educational standards that contribute to the continuous improvement of business education and to recognize business schools that adhere to these standards.

The Master of Science in Nursing Administration program is fully approved by the Vermont State Board of Nursing and is accredited by the American Association of Colleges of Nursing (AACN), Commission on Collegiate Nursing Education (CCNE). The mission of CCNE is to improve the public's health and assure the quality of undergraduate and graduate nursing education programs.

The Master of Science in Information Assurance benefits from Norwich University's global accreditation as a Center of Excellence in Information Assurance Education as defined by the National Security Agency and the Department of Homeland Defense of the United States.

Bachelor of Science in Strategic Studies and Defense Analysis

Linda Lucas, Chair, Department of Continuing Studies
Alec Adams, Associate Program Director

The Bachelor of Science in Strategic Studies and Defense Analysis (BSSSDA) is a bachelor's degree completion program designed to build upon the military education and experience of Special Operations Forces (SOF) in the U. S. Army and joint military command. The program of study will build upon a soldier's knowledge in vital areas such as sociology-anthropology, geography, cultural awareness, regional politics, and international conflict, as well as complete recognized competencies in general education needed for the bachelor's degree. The program is open only to students who are on active duty or retired from the U.S. Army Special Operations Forces, including reserve and National Guard components.

The BSSSDA degree is designed to be highly experiential in nature and integrate the operational and international experiences of SOF soldiers into the curriculum. A soldier will apply class work and study to initiatives and field exercises related to his or her deployment area. Students will conduct research concerning a region's conflicts and opportunities, incorporate that research and field experiences into the classroom and potentially into the U.S. Army's body of knowledge of that region. Principles of critical thinking, ethical decision making and leadership are interwoven throughout the curriculum.

Students entering the BSSSDA program may receive the equivalent of up to 90 quarter credits (60 semester credits) for SOF courses, preparation in leadership and language study as reviewed for credit by the American Council of Education or a similarly recognized organization. Students may also transfer up to an additional 25 quarter credits (15 semester-credit hour equivalent) from other accredited institutions of higher education for courses that meet specific course requirements in the BSSSDA program. Students complete the remaining credits through Norwich University in a structured program that will typically require two to four years to complete, depending upon a student's full-time or part-time enrollment status and military deployment schedule.

Students in the BSSSDA program will graduate with the major competencies needed to implement the U.S. Army's Special Operations Forces agenda in a specific region of the globe. These competencies include the ability to:

1. Identify, describe and explain the geographic features of the region.
2. Demonstrate understanding of the history of the region and its impact on current events.
3. Identify various cultures of the region, explain similarities and differences among them and apply this knowledge to develop problem solving strategies within a range of contexts.
4. Identify political figures in the region, analyze their positions on various issues, and apply this knowledge to develop effective collaborative relationships and/or intervention strategies.
5. Understand the economics of the region, analyze a range of economic factors, and formulate recommendations for economic activities.
6. Appraise and articulate the role of the United States within the region.
7. Appraise and articulate the role of the US Army within the region.
8. Communicate verbally and in writing in at least one language of the region.

The BSSSDA curriculum is provided in three areas or blocks of instruction: Basic, Advanced and Field studies. The Basic Block of courses is designed to ensure that students have the knowledge in fundamentals such as online learning and information literacy. Basic Block courses (35 quarter credits) include study on social science, security policy, history, statistics, and the science of military technology. The Advanced Block (30 quarter credits) builds upon the Basic Block blocks and prepares the student to apply his or her knowledge through subsequent field studies. The Field Studies Block (27 quarter credits) requires the soldier to put his or her knowledge into practice. In Field Studies, students apply what they learn by building area study plans based on a specific region's economic, geographic and cultural systems. Students gain hands-on experience in all areas of human interaction and will be prepared to help effect change within a region. This process will culminate with a Capstone Project (9 quarter credits) that will be supervised by a faculty member. The Capstone document will contribute

to the US Army’s body of knowledge of regions around the globe including Asia, Africa, the Middle East, Europe and Latin America.

Bachelor of Science in Strategic Studies and Defense Analysis Curriculum Blocks

<u>Basic Block</u>	Quarter	Credits
SSDA 301 Online Learning & Information Literacy		5
SSEN 270 Military Literature		5
SSSO 301 Studies in Cultural Anthropology		5
SSPO 301 National Security Policy		5
SSMA 232 Elementary Statistics		5
SSHI 301 Historical Studies		5
SSDA 306 Science & Technology of Defense Systems		<u>5</u>
		35
<u>Advanced Block</u>		
SSES 301 Environmental Science		5
SSPO 306 Comparative Politics		5
SSEC 301 Economic Theory—Micro and Macro		5
SSPO 311 International Terrorism		5
SSSO330 Military Sociology		5
SSSO 209 Methods of Social Science Research		<u>5</u>
		30
<u>Field Studies Block</u>		
SSEC 401 Economic Studies		9
SSSO 401 Cultural & Anthropological Studies		9
SSSO 406 Geographic Area Studies		9
SSGD 511 History of Diplomacy in the International System		<u>9*</u>
		27
<u>Capstone Block</u>		
SSDA 400 Capstone Project		9

*Students may be admitted to the Master in Diplomacy Program under an early admissions program and may take GD 511 in lieu of one Field Study. Students who choose this option must have a GPA of 2.75 or higher to qualify.

Master of Arts in Diplomacy

Program Director: Harold Kearsley
 Associate Program Director: Charles Lerche

The Master of Arts in Diplomacy degree is designed for government, military, non-governmental and business professionals who must operate within a challenging international environment. The curriculum offers a unique combination of seminars that provide students with an effective understanding of the international system. This includes a substantial grounding in the theories behind that system, the structural constraints of the system (international law) and knowledge of the prime motivator to interact within the system (international economics). The degree then moves into its concentrations. There are three concentrations within the program; International Conflict Management, International Terrorism and International Commerce.

With the increase in globalization, there is a growing need to demonstrate a mastery of the international environment and the challenges it presents. The Diplomacy program gives students the tools by which to more effectively operate within this increasingly complex international system. All students will complete a 36 credit hour program (a maximum of 12 credits can be transferred into the program with the approval of the Program Director) that culminates in a June residency at the Norwich University campus. The program is divided between a core of 18 credit hours and a concentration of 18 credit hours. All students must complete the core before moving on to their chosen concentration. In addition, in order to graduate all students must complete the comprehensive examination, an exit portfolio and an oral presentation.

Core Curriculum

The core seminars are designed to give students a solid understand of central concepts within the international system. Like many disciplines the field of International Relations does not have a single unifying theory as to why things happen within the global system. Therefore it is essential to give students a firm grounding in the contending theories as to why the system works the way it does. This will give students a firm foundation when building their own views as to which theory more effectively explains the international system. Once this foundation is established, students then go on to look at the constraints or lack of constraints on the “actors” within the international system (such as states, multi-national organizations, non-governmental organizations, etc.) These constraints are established by international norms delineated in the international legal system. Once the “does and don’ts” of the system are understood, student explore what makes the system “go” or work. Here the international political economy is explored. What motivates “actors” to interact is their desire to exchange goods or services or dominate those goods or services. The very fact that the world is now talking in terms of increasing “Globalization” is reflective of the fact that almost all “actors” are thinking in terms of a global impact. The understanding of this phenomenon is essential to a student’s understanding of the international system. All students start with the Theory seminar (GD 510), and then move to either GD 520 or GD 530, both of which must be completed before moving into a concentration, unless specific exceptions are approved by the Program Director. Concentration seminars are to be taken in sequence unless specific exceptions are approved by the Program Director.

Core Seminars

GD 510 Theory and the International System	6
GD 520 Law and the International System	6
GD 530 Economics and the International System	6

Concentrations

All concentrations follow the same format; 18 credit hours composed of three, six-credit, eleven-week seminars. The Diplomacy degree consists of two distinct parts: core and concentration. Within the first three seminars students are exposed to the core concepts while the final three seminars comprise the concentration, wherein students conduct in-depth study related to the concentration’s topic. This in-depth analysis of a subfield within international relations gives the student the expertise and understanding to be more effective in dealing with the challenges the concentration presents.

International Conflict Management Concentration:

This concentration is designed to allow students to further study all aspects of conflict within the international arena. The first seminar explores the various methods by which “actors” (be they states, corporations or individuals) in the international system can avoid getting embroiled in conflict. Once in a conflict this seminar explores the various methods actors have used to contain the impact and spread of the conflict. The second seminar deals with very important task of resolving a conflict. This concept is coupled to the aspect that actors must think about how a post conflict cleanup is going to take shape. This reconstruction is a vital aspect of post conflict reconciliation. Finally the concentration ends with a choice for students; in one elective the student can delve further into the nature of international conflict from trade wars to nuclear war. Alternatively a student can explore the growing field of human rights within conflict. The idea is to promote peace by defusing the problems that are seen to cause conflict.

International Conflict Management Concentration Seminars	Credits
GD 540 Conflict Avoidance Prevention & Containment in the International System	6
GD 550 Conflict Resolution & Post-Conflict Reconstruction in the International Sys	6

Students must complete either GD 560 or 561:

GD 560 Military Intervention and Conflict Management in the International System	6
GD 561 Human Rights and Conflict in the International System	6

International Terrorism Concentration:

This concentration explores the multifaceted concept of terrorism in both the 20th and 21st centuries. The first seminar provides a historical introduction and then explores the more “tradition” aspects of terrorism; that which is state supported or sponsored. The second seminar delves into the emerging concept of terrorism that is not contained by states but is more transnational in nature. This would include the study of narco-terrorism, “religious extremist” terrorism, etc. Finally the last seminar explores how the international system has responded to this very real threat. This would include states, multinational organizations and non-governmental entities response to terrorism.

International Terrorism Concentration Seminars	Credits
GD 542 Terrorism; Introduction and State Sponsored Terrorism	6
GD 552 International Terrorism by Non-State Actors	6
GD 562 International Response to Transnational Terrorism	6

International Commerce Concentration:

This concentration is for business students who want to enhance their understanding of doing business in the global economy. In the first seminar students examine private sector business and in particular focus on exploring internal and external environmental conditions when conducting business in a global environment. The second seminar turns toward the idea of a multi-national workforce and the unique set of challenges such a workforce presents. This is human resource management on an international scale. The final seminar deals with the need for international business actor to build their diplomatic image. This is analogous to countries having ministries for foreign affairs or “State Departments” and is seen as a need in the business world as well.

International Commerce Concentration	Seminars	Credits
GD 544 Global Commerce and the International System		6
GD 554 Cross-Cultural Management in the International System		6
GD 564 Global Corporate Diplomacy		6

Alternative Seminars

The following seminars can be used by individual students (readings) or by whole cohorts (directed study) to explore in depth a particular topic that the individual or group wants to delve into. These seminars can also be used to supplement transfer credit that was allowed into the program to complete the 36 credit hours required for the degree. Use of any of these seminars is by permission of the Program Director.

Substitute Seminars	Credits
GD 597 Directed Study in Diplomacy	1-6
GD 598 Readings in Diplomacy	1-6

Additional Program Requirements

In addition to the degree requirements for each concentration there are a number of other program elements required for the degree. Each requirement is graded on a pass/fail or satisfactory/unsatisfactory basis. Exceptions to these requirements need the approval of the Program Director.

Comprehensive Exams

All students (no exceptions) will take a written exam where they will be given eight questions in four groups of two questions per group. Student's must chose one of the two questions in each group, thus answering four questions. The questions will be devised by program faculty and will not be given to students in advance. The test will be proctored and four hours in length. The exam is typically administered during the break between GD 55X and GD 56X. It is a closed book exam, in other words, no sources other than what is in a student's mind can be used or consulted. The exam will be graded by a minimum of two faculty members. A grade of pass, fail one question (immediate re-sit), or fail will be awarded.

Oral Presentations

All students will be required to attend and give an oral presentation during the program's residency week. This presentation will be in the form of an oral report based upon an expanded paper written for one of the student's seminars, or a presentation approved by the Program Director. This presentation will take place before an audience of the student's peers, similar to a conference setting. Oral presentations will be graded as Satisfactory or Unsatisfactory.

Exit Portfolio

All students will be required to maintain and present to their seminar six (6) instructor an Exit Portfolio. This requirement will consist of electronic copies of all research related written work (such as papers, or smaller research assignments) the student has accomplished during the previous five seminars. The portfolio is to be divided up by seminar and each paper written under that seminar listed separately. Therefore, from the outset, a student must retain a readable copy of all his or her research material throughout the degree program. The student's seminar six instructor will examine each portfolio and report a grade of satisfactory or unsatisfactory to the Program Director.

Thesis Track

Students may elect to pursue a thesis on a topic of their choosing in addition to all other requirements for the degree. Students may apply to the thesis track at the conclusion of their second seminar with a proposed topic, proposed methodology to be used and the endorsements of the student's instructors in the first two seminars (if taken). Accepted students must enter the Thesis Seminar either by the beginning of the fifth seminar of the program or at the end of the student's seminar work. Upon completion of the seminar the student must defend the thesis before a committee comprised of the thesis advisor (non-voting) and two additional readers. A grade of Pass, Pass with Minor Revisions, Referred for one year, or Fail will be sent to the Program Director. The thesis track is not a degree requirement and is outside the degree process, allowing for students to complete a thesis after graduation.

Students allowed to pursue a thesis will be required to take the Thesis Seminar that will explore the purposes, problems, and strategies of empirical and theoretical research. The seminar focuses on ways to design and conduct empirical political study. Attention is given to the advantages and pitfalls of particular research strategies. Students will be exposed to both the quantitative and qualitative research methods.

Thesis Seminar

GD 570 Thesis Seminar

Credits

6

Master of Arts in Military History

Director: James Ehrman, Ph.D.

Associate Director: John Broom, Ph.D.

Capstone Director: John Grenier, Ph.D.

Mission

The mission of the Norwich University Master of Arts in Military History program is to:

- provide students with a base of historical knowledge within the field of military history,
- build an awareness of differing historical interpretations and the ability to synthesize diverse types of historical knowledge,
- build and refine student research, writing, analysis and presentation skills,
- provide students with an introduction to historical pedagogy,
- provide students with a foundation for developing a professional identity as a historian and,
- help students "learn to think like a historian" and develop "historiographical sensibilities" and "historical habits of mind."

The Master of Arts in Military History curriculum is guided by the goals for history M.A. degrees outlined by the American Historical Association. The curriculum is designed to provide students with a base of historical knowledge, graduate level historical research skills, an introduction to historical pedagogy, the foundation for an identity as a historian, and the "habits of mind" of a professional historian.

Master of Arts in Military History students come from all walks of life and a variety of different professions and seek to earn their M.A. in military history for both personal and professional reasons. Some students enter the program simply to learn more about

a field they care deeply about. Many students who are professional educators utilize the Masters of Arts in Military History to further their subject expertise in the field of military history. The degree is also a means of professional development to military personnel who see the degree as highly relevant to their leaders and strategists. A few students use the degree as preparation for further work in the field at the Ph.D. level.

Masters of Arts in Military History Curriculum	Credits
MH510: Introduction to Military History	6
MH520: The Western Way of War	6
MH530: Military Thought and Theory	6
MH540: The Non-Western Way of War	6
MH550: U.S. Military History (elective)	6
MH551: Race and Gender in Military History (elective)	6
MH562: Capstone Paper Project	6

Capstone Paper

An important part of the Master of Arts in Military History program is the preparation of the capstone paper. The capstone paper is the opportunity to conduct research in an area of interest to the student and is designed to be an article-length original paper which builds upon skills and knowledge developed in the program. The capstone paper is completed during MH 561.

Oral Presentation

Each student is required to present the capstone paper to peers and faculty at the annual residency conference on campus. Opportunity is provided for discussion of the paper and interaction with peers and faculty. The presentation is graded by faculty on a pass/fail basis. A successful capstone presentation is required for graduation from the Master of Arts in Military History program.

Master of Business Administration

Interim Program Director: Jose Cordova

Faculty Director: Michael Puddicombe

Norwich University's Master of Business Administration is specifically designed for working business professionals. The core curriculum covers the foundation of a traditional Master of Business Administration program and includes seminars in Finance, Operations, Strategic Resource Management, Marketing, and Strategic Management. The degree is customized through elective seminars in one of four critical areas of business: E-commerce, International Management, Organizational Leadership, or Project Management.

The Master of Business Administration program is fully accredited by the Association of Collegiate Business Schools and Programs (ACBSP) through and in partnership with the School of Business and Management. The mission of the ACBSP is to establish, promote, and recognize educational standards that contribute to the continuous improvement of business education and to recognize business schools that adhere to these standards.

At the center of the MBA program is a rigorous academic environment emphasizing use of the case study in an interactive e-learning environment, mentoring relationships

with faculty and extensive experiential learning. The program will develop traits common among leaders in every profession — discipline, integrity, confidence, critical thinking, and adaptability.

The Master of Business Administration program is designed to provide the student with the knowledge and skills to become an effective business leader within all areas of business enterprise. The program has been designed to allow its graduates to demonstrate the following outcomes:

1. Subject Knowledge:

- Develop a working knowledge of the key concepts of strategic resource management, managerial finance, marketing management, operations management, and strategic management.
- Understand and apply key concepts from primary functional areas of business management.

2. Business Problem Solving:

- Acquire the critical and creative thinking skills to identify business problems and recommend implementable solutions that meet business objectives.
- Demonstrate an understanding of the process for solving business problems and making sound business decisions.

3. Effective Written and Oral Communication:

- Gain the ability to write and orally present ideas and proposals persuasively and effectively.
- Follow the principles of effective communication when writing reports and making oral presentations.

Student coursework in the MBA Program culminates with attendance at a week-long residency conference held on campus. The conference includes intense academic activities in which students demonstrate how their learning and experience over the six seminars has made them effective thinkers, communicators, and leaders. Activities may include debates, lectures, a paper presentations, case-study field trips, or professional panels and roundtable discussions. Attendance at Residency is mandatory for all MBA students.

Master of Business Administration Curriculum

Prerequisite Seminars (if needed per admission committee assessment):	Credits
GB 501 Economics	2
GB 502 Accounting	2
GB 503 Finance	2
GB 504 Management	2
GB 505 Marketing	2
GB 506 Operations Management	2

The MBA program is made up of six, eleven-week seminars of six credits each for a total of 36 credit hours. The seminars must be taken in the order presented and are strategically sequenced to build context as students mover through the program.

Required Core Seminars	Credits
GB 511 Strategic Resources Management	6
GB 522 Managerial Finance	6
GB 532 Strategic Marketing and Operations Management	6
GB 540 Strategic Operations Management	6
GB 560 Strategic Management	6
Elective Seminars (taken as the fifth seminar)	Credits
GB551 E-commerce	6
GB552 International Business	6
GB553 Organizational Leadership	6
GB554 Project Management	6

Master of Science in Business Continuity Management

Program Director: John Orlando

Description of the MSBC Program

Events such as 9/11 and Katrina have brought business continuity management (BCM) into mainstream corporate practice as a fundamental aspect of sound business practice. The growth of continuity management has been further fueled by regulations requiring continuity programs in industries such as healthcare and finance, and as a condition of insurance coverage. Moreover, with eighty-five percent of the nation’s critical infrastructure, and nearly one hundred percent of the economic infrastructure, in private hands, BCM is a national security priority. Recognizing the importance of securing the nation’s economic infrastructure for national security, President Clinton issued *Presidential Decision Directive Order 63* in 1997 to address critical infrastructure protection. The federal government has extended this effort to support private sector BCM programs. In August, 2007, the federal government passed the *Implementing Recommendations of the 9/11 Commission Act of 2007*, which mandates the Department of Homeland Security to actively encourage the development of continuity programs in the United States. The National Security and Homeland Security Presidential Directive 51 was signed in 2007 requiring continuity programs to “be incorporated into daily operations of all executive departments and agencies.”

The Norwich University Master of Science in Business Continuity Management degree serves the education needs of private and public sector business continuity professionals. To ensure relevancy to the field, the program has created an Advisory Committee made up of academics, industry leaders, noted consultants in the field, and representatives of professional organizations.

Business Continuity Management Program Curriculum

The first seminar, Foundations of Business Continuity Management, is an introduction to the field and covers the steps to developing and implementing a business continuity plan. Plan development is considered the starting point of any BCM program. The remaining five seminars cover the various competencies needed to support organizational resiliency and risk management. The topics prepare the professional for both the business and security challenges of BCM.

Seminars	Credits
BC510 Foundations of Business Continuity Management	6
BC520 Principles of Incident Management and Emergency Response	6
BC530 Developing the Resilient Organization	6
BC540 Business Continuity Risk Management	6
BC550 Information Systems Continuity	6
BC560 Implementation: Awareness Programs and Testing	6

Residency

As with all School of Graduate Studies program, students will cap their studies with a one-week on-campus Residency held in the summer. This is a time to engage in a variety of face to face educational programs, such as debates and conferences, as well as network with each other and instructors. The Residency ends with a commencement ceremony.

Master of Civil Engineering

Program Director: Thomas J. Descoteaux, Ph.D., P.E.

Medicine, law, architecture, accounting, pharmacy – all professions that require education in excess of four years, whether by a separate “Professional School” or by simply requiring more than four years to obtain an undergraduate degree. Much discussion has occurred lately in the engineering community concerning the “status” of the profession in the eyes of the public. Concerns over compensation, loss of respect from society in general, and the increasing trend toward viewing engineers as a commodity instead of as valued and skilled professionals has prompted some to take a hard look at the current educational system. Many engineers agree that, in light of the explosive growth of technology, the steady decrease in the number of credits required for an undergraduate engineering degree (from an average of 150 semester hours in 1950 to 133 today), and the loss of influence and control in the worlds of finance and politics (both critical to successfully solving the world’s problems through engineering), the skill set provided by a four year education is no longer adequate.

In light of these problems, the Board of Directors of the American Society of Civil Engineers unanimously adopted Policy 465 in 2001:

“The American Society of Civil Engineers (ASCE) supports the concept of the Master’s degree or Equivalent as a prerequisite for licensure and the practice of civil engineering at a professional level.

ASCE encourages institutions of higher education, governmental units, employers, civil engineers, and other appropriate organizations to endorse, support, and promote the concept of mandatory post-baccalaureate education for the practice of civil engineering at a professional level. The implementation of this effort should occur through establishing appropriate curricula in the formal education experience, appropriate recognition and compensation in the workplace, and congruent standards for licensure.”

Norwich University saw ASCE’s Policy 465 as an opportunity to create a graduate

program unlike any other. The Master of Civil Engineering (MCE) program stresses the fundamental skills needed for success by tomorrow’s civil engineer. These skills include not only technical competency in your field of expertise but also the broad range of communication and management skills needed in the highly entrepreneurial business environment that comprises our profession.

Curriculum

The 18 month MCE program is divided into six, eleven-week, six-credit seminars. There are also prerequisite seminars available for those not meeting the admissions requirements with respect to coursework. Each seminar has two threads or “tracks.” The “Technical” track includes traditional engineering topics (students choose from concentrations in either structural or environmental/water resources engineering) while the “Core” track includes our unique course sequence entitled “Project and Business Management Fundamentals.” This sequence includes topics from the worlds of business, construction and project management, human resource management, etc. (See below for more detailed course descriptions.)

Master of Civil Engineering Program Curriculum Map

Environmental Sequence

Structural Sequence

<p>CE 501 Hydraulics for Environmental Engineers (3 Credits)</p>	<p>CE 505 Engineering Analysis Techniques (3 Credits)</p>	<p>CE 506 Engineering Mechanics I (3 Credits)</p>
<p>CE 509 Fundamentals of Environmental Water Resources Engineering (6 credits)</p>		<p>CE 507 Fundamentals of Structural Engineering (6 credits)</p>
	<p>CE 511 Analytical Methods & Project / Business Management Fundamentals I (6 credits)</p>	
<p>CE 525 Physiochemical & Biological Processes in Water & Wastewater Treatment (6 credits)</p>		<p>CE 528 Classical, Matrix & Dynamic Analysis of Structures (6 credits)</p>
<p>CE 535 Stormwater Management & GIS Applications for Water Resources (6 credits)</p>		<p>CE 538 Design of Steel & Timber Structures (6 credits)</p>
	<p>CE 541 Project / Business Management Fundamentals II (6 credits)</p>	
<p>CE 555 Geoenvironmental Engineering: Groundwater Flow & Waste Containment (6 credits)</p>		<p>CE 558 Design of Reinforced & Prestressed / Precast Concrete Structures (6 credits)</p>
	<p>CE 561 Capstone Design Project & Utility System Fundamentals (6 credits)</p>	

Master of Civil Engineering Curriculum

Prerequisite Seminars (if needed per admission committee assessment):

Seminar	Credits
CE 501: Hydraulics for Environmental Engineers	3
CE 505: Engineering Analysis Techniques	3
CE 506: Engineering Mechanics I	3
CE 507: Fundamentals of Structural Engineering	6
CE 509: Fundamentals of Environmental/Water Resources Engineering	6

Core Seminars

Students begin the program with enrollment in CE 511; CE 541 is taken as the fourth seminar and CE 561 as the final seminar. Concentration seminars are taken as the second, third and fifth seminars of the program, consistent with their numeric designation.

	Credits
CE 511: Analytical Methods and Project / Business Management Fundamentals I	6
CE 541: Project / Business Management Fundamentals II	6
CE 561: Capstone Design Project and Utility System Fundamentals	6

Environmental / Water Resources Concentration

	Credits
CE 525: Physiochemical & Biological Processes in Water & Wastewater Treatment	6
CE 535: Stormwater Management and GIS Applications for Water Resources	6
CE 555: Geoenvironmental Engineering-Groundwater Flow & Waste Containment	6

Structural Concentration

	Credits
CE 528: Classical, Matrix, and Dynamic Analysis of Structures	6
CE 538: Design of Steel and Timber Structures	6
CE 558: Design of Reinforced and Prestressed/Precast Concrete Structures	6

One-Week Residency

During the final phase of the MCE program students are required to attend a one-week residency on our campus. During this residency, students participate in discussions with each other and faculty; present their capstone design projects; and are generally given a chance to get to know the people they have worked with online during the previous 18 months, our campus, and central Vermont.

Master of Education

[Program being Phased Out]

Program Director: Linda Lucas

The Master of Education program was designed for professionals from K-12, higher education, and military and corporate education environments. The mission of the M.Ed. program is to transform experienced educators into change agents who have the leadership, technology and organizational development knowledge and skills needed to address effectively the challenges facing the dynamic and demanding profession of education. The program prepares people for leadership within their chosen field of expertise: school administration, educator leader, or educational technology.

A fundamental goal in designing the curriculum was to integrate and re-enforce concepts of leadership, organizational development, and technology through all concentrations of learning. Regardless of whether students view themselves as administrative leaders, education leaders or technology specialists, how to lead, how to organize and how to integrate technology as an organizational tool are critical to success and advancement in education. It should be noted that the M.Ed. program is a professional studies program and it does not lead to licensure or certification at the present time. The M.Ed program is scheduled to be reviewed for approval by the Vermont Standards Board for Professional Educators in 2008.

Curriculum in the M.Ed. program was developed using competencies outlined in state and national guidelines. The General Competencies for School District Administrators outlined by the Vermont Department of Education were used as the foundation for many of the program seminars. These competencies cover visionary planning, interpersonal skills, collaborative skills, partnerships, personnel, curriculum instruction and assessment, fiscal planning, law, and effective learning environments – all of which can be applied to a wide range of education leadership positions. The M.Ed. used the Vermont Standards for Education Technology Specialist endorsement as the basis for developing education technology curriculum needs. The Standards for School Leaders developed by the Interstate School Leaders Licensure consortium also served as a guide for program development. In addition, learning outcomes of the program are based on mission statements and beliefs of the National Education Association, the American Federation of Teachers, the American Association of School Administrators, the National Educational Technology Standards for Administrators (NETS), Standards of the New England Accreditation of Schools and Colleges (NEASC), and the NEASC Best Practices for Electronically Offered Degree and Certificate Programs.

All students take a core curriculum that consists of three seminars: Educational Leadership, Organizational Development, and Research and Technology in Education. After completing the required core curriculum, students have three concentration options: School Administration and Supervision, Educator Leader, or Education Technology. The concept of leadership is woven throughout all seminars and concentrations. All students complete a 36 credit hour program that culminates in a required one week residency conference at the Norwich University campus.

The program uses theory, current and emerging issues and hands-on problem solving to build a cutting-edge curriculum that prepares educational leaders and change agents who wish to have a positive impact on their students, their organization, their community and their profession. Seminars are designed to build on students' current knowledge. As students gain new knowledge through participating in the program, they have opportunities to use that knowledge to solve real world problems they face in their professional lives. The curriculum allows the flexibility for students to focus on specific areas of interest within the context of each seminar. Through discussions and shared and individual projects a true classroom environment is created. Online classrooms build community through a private student chat room and through frequent student/faculty voice and email communication. Highly qualified and dedicated faculty, all experts in their content areas, provide detailed feedback on student work within a very short turnaround time.

Core Curriculum

The core curriculum is comprised of the three seminars that represent the foundation of the M.Ed. leadership development model: Education Leadership, Organizational Development and Research and Technology Integration. The content in these three seminars along with work completed by students gives students foundational learning and skills needed for effective leadership in a wide range of educational settings.

Core Seminars	Credit
ED 510 Educational Leadership	6
ED 520 Organizational Development	6
ED 530 Research and Technology in Education	6

Concentrations

School Administration and Supervision

This concentration prepares students for the following possible positions: principal, executive director (NPO), supervisor, mediator/negotiator, business manager, organizational consultant, superintendent, career and vocational administration, program director, or higher education administrator. As with core seminars, these concentration seminars and the ones following are a blend between theory and practical problem solving, with built-in flexibility for students to focus on particular areas of interest.

	Credits
ED 541 Human Resources	6
ED 550 School Administration	6
ED 561 Strategic Planning	6

Educator Leader

The Education Leadership Concentration prepares students for the following possible positions: adult services coordinator, adult development instructor, project administrator, executive director (NPO), department head, mediator/negotiator, teacher-trainer, higher education (instructor or administrator).

	Credits
ED 541 Human Resources	6
ED 551 Instructional Strategies	6
ED 560 Assessment and Evaluation	6

Education Technology

Possible career options for students choosing the Educational Technology Concentration include technical coordinator, program designer, project manager, instructional design and development, technical trainer, instructor in higher education, technology specialist, or department supervisor.

	Credits
ED 540 Technology Development and Delivery	6
ED 551 Instructional Strategies	6
ED 561 Strategic Planning	6

Master of Justice Administration

Program Director: Donal Hartman, Jr.

Associate Program Director: Kenneth Mentor

The MJA program is designed for working professionals seeking to become leaders in the field of justice administration. The curriculum offers a study of the best practices for administrators of organizations involved in law enforcement, corrections, operation of jails and juvenile facilities, treatment facilities and related criminal justice activities and services. The curriculum places a high emphasis on experiential learning with a focus on demonstrating knowledge of the principles and concepts of leadership, implementation of ethical principles into operations, program evaluation, critical analysis of operational practices, policymaking and strategic planning, management of teams, operation of special units, workforce development for institutional and community operations and fostering community relations.

The challenge for the administrator of the justice organization is to find a balance between the public safety needs of society, best practices for the organization and the financial constraints of public financing. Only by developing a sense of inquiry, mastering the skills of research of relevant and up-to-date studies and publications, focusing on evidence-based practices, and understanding the dynamics and processes of community relations will the leader of the justice organization achieve organizational success. The MJA program requires students to develop and exhibit superior skills of informatics, communication, integration of relevant concepts and knowledge of the principles appropriate to mission accomplishment in an evolving environment of federal and state rules of employment practices, laws of liability, and statutory mandates.

The Master of Justice Administration Program provides students with the tools to meet these objectives by creating an environment of academic interaction between the students and faculty, all of whom are leaders in the field of justice administration. Emphasis is placed on problem-solving, using scenarios that replicate real-world operational and policy-oriented situations. Each student is required to select a topic for a capstone paper in the mid-point of the program, and by the conclusion of the last seminar present a capstone paper on a topic of relevance to the student's career and/or professional interest. During residency week prior to graduation the student must present the capstone paper to fellow students and attending faculty.

Core Curriculum

Required Seminars

	Credits
GJ 510 Foundations in Criminal Justice, Administration & Criminology	6
GJ520 Organizational Management & Human Resources Concepts	6
GJ530 Research Methods and Statistical Applications	6
GJ540 Legal and Ethical Issues	6
GJ560 Justice Policy and Planning	6
<u>One of the following electives must be completed for the fifth seminar:</u>	
GJ550 Justice Administration, Information Systems & Assurance	6
GJ551 Law Enforcement Administration	6
GJ552 Corrections Administration	6
GJ555 Public Safety and Crisis Management	6

AD550 Public Administration Resources and Processes	6
AD551 Human Services Administration	6
AD552 Nonprofit Administration	6
AD553 Emergency Management and Business Continuity	6

Capstone Paper

An important part of the MJA program is the preparation of a capstone paper. The capstone paper is the student's opportunity to conduct research and apply it to an operational or policy issue of interest to the student's job or field of interest. The capstone paper is designed to be an article-length paper dealing with a subject related to the field of justice administration and structured to develop a policy or operational procedure that has practical application in a justice organization or system. The capstone paper serves as a springboard for change, a new action, or a new direction, all of which are appropriate goals for the future leader of a justice organization.

Oral Presentation

Each student is required to present the capstone paper to peers and faculty at the annual residency conference on campus. Opportunity is provided for discussion of the paper and interaction with peers and faculty. The presentation is graded by faculty on a pass/fail basis. A successful capstone presentation is a condition precedent for graduation from the MJA program.

Master of Public Administration

Program Director: Donal Hartman, Jr.

Associate Program Director: Kenneth Mentor

The MPA program is designed for working professionals that seek to become leaders in the field of the administration of public services. The curriculum offers a study of the best practices for administrators of organizations involved in public administration and public services. The curriculum places a high emphasis on experiential learning with a focus on demonstrating knowledge of the principles and concepts of leadership, implementation of ethical principles in operations, program evaluation, critical analysis of operational practices, policymaking and strategic planning, management of groups, workforce development, fostering community relations and identifying stakeholders.

The challenge for the administrator of the public service organization is to find a balance between the needs of society, best practices and the financial constraints of public financing. Only by developing a sense of inquiry, mastering the skills of research of relevant and up-to-date studies and publications and focusing on evidence-based practices will the leader of the public organization achieve organizational success. The MPA program requires its students to develop and exhibit superior skills of research, effective communication, excellent integration of relevant concepts and principles appropriate to mission accomplishment and the ability to accomplish operational objectives in an evolving environment of federal and state rules of employment practices, laws of liability, and statutory mandates.

The Master of Public Administration Program provides students with the tools to meet these objectives by creating an environment of academic interaction between the students and faculty, all of whom are leaders in the field of public administration.

Emphasis is placed on problem-solving, using scenarios that replicate real-world operational and policy-oriented situations. Each student is required to select a topic for a capstone paper in the mid-point of the program, and by the conclusion of the last seminar present a capstone paper on a topic of relevance to the student’s career and/or professional interest. During residency week prior to graduation the student must present the capstone paper to fellow students and attending faculty.

Master of Public Administration Curriculum

Required Seminars	Credits
AD510 Foundations in Public Administration	6
AD520 Public Organization and Resource Management	6
AD530 Research Methods in Public Administration	6
AD540 Legal and Ethical Issues in Public Administration	6
AD560 Public Policy and Planning	6

One of the following electives must be completed for the fifth seminar:

AD 550 Public Administration Processes and Resources	6
AD551 Human Services Administration	6
AD552 Nonprofit Administration	6
AD553 Emergency Management and Business Continuity	6
GJ 551 Law Enforcement Administration	6
GJ 552 Corrections Administration	6
GJ 555 Public Safety and Crisis Management	6

Students may with approval by the Program director enter and complete parts I and II of one of the following two concentrations in order to satisfy program requirements for seminars five and six.

AD555 Public Organization Fiscal Management, Part I	6
AD565 Public Organization Fiscal Management, Part II	6
AD577 Public Works Administration, Part I	6
AD567 Public Works Administration, Part II	6

Capstone Paper

An important part of the MPA program is the preparation of a capstone paper. The capstone paper is the student’s opportunity to conduct research and apply it to an operational or policy issue of interest to the student’s job or field of interest. The capstone paper is designed to be an article-length paper dealing that with a subject related to the field of justice administration and structured to develop a policy or operational procedure that has practical application in a justice organization or system. The capstone paper serves as a springboard for change, a new action, or a new direction, all of which are appropriate goals for the future leader of a justice organization.

Oral Presentation

Each student is required to present the capstone paper to peers and faculty at the annual residency conference on campus. Opportunity is provided for discussion of the paper and interaction with peers and faculty. The presentation is graded by faculty on a pass/fail basis. A successful capstone presentation is a condition precedent for

graduation from the MJA program.

Master of Science in Information Assurance

Program Director: Michel Kabay

Associate Program Director: Peter Stephenson

Mission and Description of the MSIA Program

The MSIA program's mission is to deliver a state-of-the-art, high-quality, and convenient education to busy professionals committed to furthering their careers in information assurance. In particular, the MSIA program will appeal to chief information, technology, and information security officers of business and governmental organizations. Additionally, it is designed for security administrators, network administrators, information technology specialists, professionals in the information technology field, military personnel, and Norwich University alumni. MSIA graduates are leaders and innovators in information assurance, bringing sound interdisciplinary perspectives to the field.

The program balances academic rigor with convenience. This combination maintains and respects Norwich University's long heritage while it meets the needs of today's working students. The program hires instructors of high professional stature and demands highly personal and extraordinary academic interactions with students.

Holders of the CISSP (Certified Information Systems Security Professional) designation administered by the International Information Systems Security Certification Consortium (ISC)² are permitted to waive GI 510 and proceed directly to GI 521. For such students, the MSIA is a 30-credit graduate degree composed of five, six-credit, 11-week seminars followed by a one-week residency at the Norwich campus.

The MSIA's information assurance education includes exploration of the current state of the information assurance marketplace. White papers, Web sites, discussion groups, conference proceedings, professional association meetings – all provide opportunities to learn about which products and services are being discussed and used by practitioners of information assurance.

The case study is a required part of the MSIA program and each student is required to demonstrate access to an organization which will serve as their case study during the program. Throughout the MSIA program, students read about and discuss the topics at hand; as they study various aspects of information assurance, students must analyze the situation at their workplace or case study site every week with respect to the week's topics. Students use their research findings to prepare a report with recommendations for improvement of specific areas of IA to be submitted in the last week of each seminar to the MSIA instructors and to the appropriate people within the case-study organization.

Information Assurance Program Curriculum

Five of the six seminars in the 36 credit hour program are core requirements and one is an elective. Students in the 30 credit hour program are not required to enroll in GI 510. All courses are focused on providing an opportunity for students to acquire and

exercise the knowledge and skill expected of top-level managers of information assurance in today's demanding security environment.

Core seminars are as follows:		Credits
GI 510	Foundations of Information Assurance	6
GI 521	Prevention - Technical Defenses	6
GI 531	Prevention - Human Factors	6
GI 541	Detection, Response & Hot Topics	6
GI 561	Management Tools for Information Assurance	6

One of the following electives is required to complete the 36 credit hour program:

Electives	Credits	
GI 551	Computer Forensic Investigation	6
GI552	Principles of Emergency Management	6
GI553	Business Continuity Planning	6
GI 554	Computer Security Incident Response Team Management	6
GI 555	Security Auditing	6

Residency

The one-week Residency acts as a capstone experience where students participate in workshops, hear distinguished speakers, and optionally take the examination for the CISSP (Certified Information Systems Security Professional) or other (ISC)² certification. Residency is a dynamic, vital experience, and participation is required.

Master of Science in Nursing

Program Director: Annie Moore-Cox

The Norwich University Master of Science in Nursing is a 36 credit hour program designed to provide students with the knowledge and skills necessary in Nursing Administration to succeed as nurse leaders in a variety of health care settings. The current program offers a concentration in Nursing Administration and is fully approved by the Vermont State Nursing Board and accredited by the Commission on Collegiate Nursing Education (CCNE).

Master of Science in Nursing Program Outcomes:

The program is designed to help students achieve the following outcomes:

- Use a variety of strategies to communicate effectively with stakeholders regarding nursing and health care system issues.
- Identify problems and seek interventions to improve health care delivery outcomes using appropriate data, effective critical analysis and decision-making skills.
- Apply leadership and management theory to develop collaborative partnerships across health care disciplines in current and future practice settings.
- Use appropriate data to make decisions in determining the effective use of human and fiscal resources.
- Develop and utilize evidence based practices to improve quality of healthcare.

- Implement the role of the nurse leader/manager as defined by the American Nurses Association scope and standards of practice.
- Demonstrate the abilities of nurse leader/manager as outlined by American Association of Colleges of Nursing and American Organization of Nurse Executives.
- Apply theories of nursing, systems, change, leadership and management in the delivery of healthcare services.

Mission

The purpose of the Master of Science in Nursing program is to prepare visionary nurse leaders who demonstrate advanced critical thinking, communication, and decision making skills to ensure quality outcomes within the complex systems of the health care continuum. Graduates are prepared to initiate and effectively utilize research findings to improve outcomes, as well as utilize knowledge of health promotion, health care policy and systems, change and finance to effectively manage available resources in the changing health care environment. Masters prepared nurses utilize this knowledge base integrated with theories from nursing and related disciplines to create and implement ethical practices and policies to improve the environment in which health care is delivered.

The Masters prepared nurse engages in an expanded scope of practice that is characterized by critical analysis of problems and creative problem solving, and application of theories in the decision making process. The graduate manages change effectively and utilizes effective communication skills and technologies to create collaborative partnerships within nursing and across health care disciplines. Graduate education prepares the nurse to identify and evaluate personal and organization values and to implement ethical decisions and strategies to improve outcomes

The program's first three seminars (18 credits) are core content seminars and provide the foundation for specialization, addressing the study of health care delivery systems, ethical issues, and theoretical bases for nursing, leadership, and research. The three remaining seminars address the specific content essential for nursing administration practice.

Core Curriculum

Core Seminars

	Credits
NR 510: Health Systems Analysis: Policy, Environment, and Structure	6
NR 520: Theoretical Constructs for Leadership Roles in Nursing	6
NR530: Evidence-Based Practice	6

Nursing Administration Concentration

	Credits
NR 540: The Health Care Organization: Behavior and Development	6
NR 550: Nursing Resource Management	6
NR 560: Strategic Management in the Nursing Environment	6
GU 590: Selected Topics	1-6

Residency Presentation

Each student is required to attend and participate in the annual residency. Opportunity is provided for discussion, presentations and interaction with peers and faculty.

Master of Science in Organizational Leadership

Program Director: Diane Ravenscroft

The Master of Science in Organizational Leadership (MSOL) is offered to provide relevant educational experience to graduates who positively impact their organizations and communities as leaders or future leaders. The mission of MSOL is to promote leadership capabilities in adult learners through high standards of teaching and coaching by faculty and MSOL staff.

A fundamental goal of the curriculum is to provide opportunities for students to research leadership theories to gain understanding about the major thinkers and practitioners in leading and leadership development. The Master of Science in Organizational Leadership has a strong application/demonstration component that allows students to not only learn about leadership, but to also synthesize course content and demonstrate understanding through both academic assignments and professional practice.

The Leadership Development Portfolio (LDP) is a required element of the program and a vehicle by which students assimilate course objectives into their professional role within their organization. The LDP is comprised of student work that demonstrates leadership development consistent with a plan of academic study and professional objectives. Students use the LDP to relate academic content to their professional lives and role within their organization so that they may “live what they learn.”

The core curriculum is designed to integrate major leadership issues relevant to individuals who work in organizations at either a direct leadership level, those positioned to directly lead in the future, or those individuals who aspire to lead. Current demographic trends have seen growth among younger executives and added responsibilities for those who may lack experience leading others. Contemporary workforce dynamics illustrate different values than prior generations and the need for new leaders to study topics such as emotional intelligence, knowledge management and leadership theory.

The marketplace and global economy require understanding of strategy and strategic communication for the contemporary leader. Contemporary leaders also must understand how to lead change within their organizations or support change efforts made by others, often in an environment of change. Realities of the global economy have created what is now commonly called the “knowledge-based economy” and the Master of Science in Organizational Leadership is structured to provide students with tools, understanding and vision to address the leadership challenges of our time.

Master of Science in Organizational Leadership Curriculum

The Master of Science in Organizational Leadership program is made up of six, eleven-week seminars of six credits each for a total of 36 credit hours. The seminars must be taken in the order presented and are strategically sequenced to build context and the Leadership Development Portfolio as students move through the program.

Required Seminars	Credits
OL510 Leadership Fundamentals: Ethical Leadership & Value-Driven Organizations	6
OL520 Emotional Intelligence (EQ) and Leadership Style	6
OL 530 Leading Change	6
OL540 Strategic Communication and Informational Leadership	6
OL550 Strategic Organizational Behavior as Leadership in Organizations	6
OL560 Developing a Learning Organization for the Knowledge-Based Economy	6

Residency Presentation

Each student is required to attend the annual residency and present work from the Leadership Development Portfolio to peers and faculty. The presentation is graded by faculty on a pass/fail basis and is required for graduation from the Master of Science in Organizational Leadership program.