Master of Civil Engineering

Program Director: Thomas J. Descoteaux
Program Coordinator: Linda Ratsep

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 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 Map

Semester 1	Cr.	Semester 2	Cr.	Semester 3	Cr.
GB 544 Project Management Techniques, Tools and Practices	6	Concentration course	6	Concentration course	6
EG 501 Engineering Mathematics	6	Concentration course	6	CE 561 Capstone Design Project[1]	6
				CE 595 Residency[2]	0
Semester Total Credits	12	Semester Total Credits	12	Semester Total Credits	12
Total Credits For This Major: 36					

1 Grade of B or better required for the Capstone Design Project.

2 Students are required to attend a one-week, on campus Residency Conference the June following or concurrent with their final course.

Curriculum Requirements

The 18-month Master of Civil Engineering program is divided into six, eleven-week, six-credit courses. There are also fundamentals courses available for those not meeting the admissions requirements with respect to coursework. Three courses comprise the program “core” and are required of all Master of Civil Engineering students. For the other three courses students choose from four available concentrations: structural engineering, environmental/water resources engineering, geotechnical engineering, or construction management.

Fundamentals Courses [1]		
(If needed per admission committee assessment)		
CE 501	Hydraulics for Environmental Engineers	3
CE 503	Fundamentals of Soil Mechanics and Foundation Engineering	6
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
CE 571	Elementary Geotechnical Tools Laboratory	1
GB 501	Fundamentals of Business Management	6
GB 502	Quantitative Methods and Financial Analysis for Managers	6

1 Grade of B or better required in each fundamentals course/seminar.

Core Courses (18 Credits)

GB 544	Project Management Techniques, Tools and Practices	6
EG 501	Engineering Mathematics	6
CE 561	Capstone Design Project	6
Culminating Academic Requirement		
CE 595	Residency	0
Total Cr.		18

Concentration Courses (18-19 Credits)

Environmental/Water Resources Concentration (18 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 and Waste Containment	6
Total Cr.		18
Structural Concentration (18 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
Total Cr.		18
Geotechnical Concentration (19 credits)		
CE 523	Intermediate Soil Mechanics and Foundation Engineering	6
CE 533	Earthquake Engineering and Soil Stabilization	6
CE 553	Computer Modeling in Geotechnical Engineering and Geotechnical Engineering Case Histories	6
CE 572	Intermediate Geotechincal Tools Laboratory	1
Total Cr.		19
Construction Management Concentration (18 credits)		
CE 529	Information Technology	6
CE 539	Contracts and Insurance	6
CE 559	Project Finance and Accounting	6
Total Cr.		18

One-Week Residency

All degree candidates of the Master of Civil Engineering are required to attend a one-week Residency Conference (http://catalog.norwich.edu/archives/2017-18/onlineprogramscatalog/mastersdegrees/residencyconferencerequirement) on the Norwich University campus, during which they may attend professional presentations, participate in roundtable discussions with faculty, and present capstone design projects. The one-week residency is a degree requirement.

Faculty Member	Institution at which highest degree was earned
Thomas Descoteaux, PhD, PE (Program Director)	University of Connecticut
Linda Ratsep, MCE, MBA, PE (Program Coordinator)	Villanova University; Drexel University
William Barry, PhD	Carnegie Mellon University
Michael S. Blount, MS, PE	Georgia Institute of Technology
Matthew Bovee, PhD	University of Kansas
Laurette Brady, MBA	St. Joseph's University
Robert Caulk, MSCE	University of Vermont
Arif Cekic, PhD, PE	Wayne State University
Jamie Colby, MS, PE	Virginia Polytechnic Institute and State University
Paul Draghi, PhD	Indiana University
Kenneth Edwards, PhD, PE	Iowa State University
Andrew Ernest, PhD, PE	Texas A&M
Kenneth Lamb, PhD, PE	University of Nevada – Las Vegas
Will Lindquist, PhD, PE	University of Kansas
W. Nicholas Marianos, PhD, PE	Tulane University
Joseph Miller, PhD, PE	Michigan Technological University
David Nowacki, MBA, MS	Louisiana State University
Bryan Pascarella, MBA	University of Pittsburgh
Carmine Polito, PhD, PE	Virginia Polytechnic Institute and State University
Jared Reigstad, MCE, PE	Norwich University
Scott Sabol, MSCE	Pennsylvania State University
Timothy Tyler, PhD, PE	Virginia Polytechnic University
Loren Wehmeyer, PhD	The University of Iowa