

# CURRICULUM MAP



MERRIMACK COLLEGE

## Civil Engineering, BS (Pre-Calculus Start)

### YEAR ONE

#### FALL

Introduction to Engineering - GEN 1001	4 credits	Major Requirement
Pre-Calculus - MTH 1016	4 credits	Major Prerequisite
First Year Seminar - FYS 1947	4 credits	FC Core Requirement (FYS)
General Chemistry with Lab - CHM 1110	4 credits	Major Requirement, FC Core Requirement (STEM)

**Total Credits - 16**

#### SPRING

Applied Statistics - MTH 1505 OR Probability & Statistics- MTH 2527	4 credits	Major Requirement
Calculus I - MTH 1217	4 credits	Major Requirement, FC Core Minor Requirement
FC Core Course	4 credits	FC Core Requirement (HUM)
Engineering Computational Elective (CSC 1611, CSC 1610, MEN 2050, or as approved by advisor)	4 credits	Major Requirement

**Total Credits - 16**

### YEAR TWO

#### FALL

Site Engineering with Lab - CEN 2001	4 credits	Major Requirement
Mechanics I with Recitation - GEN 2010	4 credits	Major Requirement

Physics I with Lab - PHY 2211 (strongly recommend taking Physics the summer BEFORE sophomore year)	4 credits	Major Requirement
Calculus II - MTH 1218	4 credits	Major Requirement, FC Core Minor Requirement

**Total Credits - 16**

**SPRING**

Mechanics of Materials with Lab - GEN 2012	4 credits	Major Requirement
Fluid Mechanics with Lab - GEN 3040	4 credits	Major Requirement
Calculus III - MTH 2219	4 credits	Major Requirement, FC Core Minor Requirement
FC Core Course	4 credits	FC Core Requirement (RTS)

**Total Credits - 16**

**YEAR THREE**

**FALL**

Structural Analysis - CEN 3010	4 credits	Major Requirement
Geotechnical Engineering w/Lab - CEN 3020	4 credits	Major Requirement
Water Resources & Hydraulics - CEN 3045	2 credits	Major Requirement
Differential Equations - MTH 2220	4 credits	Major Requirement, FC Core Minor Requirement
Sci/MTH Elec (Math minor course or pursue science/math interest, as approved by advisor)	4 credits	Major Requirement, FC Core Minor Requirement

**Total Credits - 18**

**SPRING**

Environmental Engineering w/Lab - CEN 3050	4 credits	Major Requirement
Introduction to Geology - CEN 2050	2 credits	Major Requirement
Transportation Engineering w/Lab -CEN 3030	4 credits	Major Requirement
FC Core Course	4 credits	FC Core Requirement (SOSC)

**Total Credits - 14**

**YEAR FOUR**

**FALL**

Design Elective A **	4 credits	Major Requirement
Design Elective B **	4 credits	Major Requirement
Technical Elective (any SECS 2000 course or above or as approved by advisor)	4 credits	Major Requirement
FC Core Course (or approved Ethics course)	4 credits	FC Core Requirement (DPJ)

**Total Credits - 16**

**SPRING**

Senior Design Project - CEN 4901W	4 credits	Major Requirement
Design Elective C **	4 credits	Major Requirement
Open CE Elective - Any 4000 level CE course or above	4 credits	Major Requirement
Major Elective (recommended minor/certificate or professional skills course)	4 credits	Major Requirement

**Total Credits - 16**

\*\* Design Electives A, B, and C must be from 3 different CE disciplines. Example courses include:

**Environmental & Water Resources Engineering**

CEN 4030 Environmental Design

CEN 4032 Applied Hydrology

**Structural Engineering**

CEN 4012 Steel Analysis and Design

CEN 4016 Concrete Analysis & Design

**Geotechnical Engineering**

CEN 4020 Foundation Engineering

CEN 4022 Earth Slopes & Retaining Structs.

**Transportation & Development**

CEN 4042 Traffic Engineering

CEN 4044 Trans. Planning & Sys. Analysis

Notes: This is a sample curriculum map. Students may progress toward graduation using alternative pathways. In addition, 'FC Core Requirement' signifies that the course is required as part of the Foundations and Connections Core - the College's general education program. Please be aware that all students must take six FC Core Requirement courses (FYS, DPJ,

HUM, RTS, SOSC, and STEM) and four FC Core Elective courses to satisfy the College's general education requirement.