



CIVIL FOCUS AREA: Structures, Mechanics, & Materials

Department of Civil and Environmental Engineering

General Education (19 sh) sh

ALL	RHET:1030 Rhetoric	4
F/S	Diversity & Inclusion	3
ALL	Be Creative	3
ALL	Approved Gen Ed Course	3
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Math & Basic Science Core (24 sh) sh

F/S	MATH:1550 Math I: Single Variable Calculus (P: ALEKS score ≥ 75 or MPT Level 3 score ≥ 9)	4
ALL	MATH 1560 Math II: Multivariable Calculus (P: MATH:1550)	4
ALL	MATH:2550 Math III: Matrix Algebra (P: MATH:1550)	2
ALL	MATH:2560 Math IV: Differential Equations (P: MATH:1560 & MATH:2550)	3
F/S	STAT:2020 Probability & Statistics For Engr & Phys Sci (P: MATH:1560)	3
ALL	CHEM:1110 Principles of Chemistry I (P: ALEKS score ≥ 55 or MPT Level 3 score ≥ 9)	4
ALL	PHYS:1611 Introductory Physics I / Lab (C: MATH:1550)	4

Engineering Core (7 sh) sh

F	ENGR:1000 Engineering Success for First-Year Students (First semester standing)	1
F	ENGR:1100 Intro to Engineering Problem Solving	3
F/S	ENGR:1300 Intro to Engineering Computing (C: MATH:1550)	3

Civil Engineering Requirements (45 sh) sh

ALL	CHEM:1120 Principles of Chemistry II (P: CHEM:1110)	4	OR
F/S	PHYS:1612 Introductory Physics II / Lab (P: PHYS:1611; C: MATH:1560)	4	
ALL	ENGR:2110 Statics (P: MATH:1550; C: MATH:1560 & PHYS:1611)	2	
ALL	ENGR:2130 Thermodynamics (P: CHEM:1110 & PHYS:1611; C: MATH:1560)	3	
F/S	ENGR:2510 Fluid Mechanics (P: MATH:2560 & ENGR:2710; C: ENGR:2130)	4	
ALL*	ENGR:2710 Dynamics (P: ENGR:2110 & MATH:1550)	3	
ALL*	ENGR:2750 Mechanics of Deformable Bodies (P: ENGR:2110; C: MATH:2560)	3	
ALL	CEE:1030 Intro to Earth Science (no lab required)	3	
F	CEE:2015 Civil Engineering Tools	2	
S	CEE:3155 Principles of Environmental Engineering (P: CHEM:1110)	4	
S	CEE:3371 Principles of Hydraulics and Hydrology (P: ENGR:2510)	3	
F	CEE:3530 Geomechanics (P: ENGR:2750)	4	
F	CEE:3533 Principles of Structural Engineering (P: ENGR:2750)	4	
S	CEE:3586 Civil Engineering Materials (P: ENGR:2750)	3	
S	CEE:3763 Principles of Transportation Engineering (C: ENGR:1100)	3	

Capstone Design Courses (3 sh) sh

F/S	CEE:4850 Project Design & Management in CEE (P: final semester; C: CEE:3003)	3
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CEE Professional Skills (4 sh) sh

S	CEE:2010 Professional Practice and Ethics	1
F	CEE:3001 Leadership Skills for Engineers (junior standing)	1
S	CEE:3002 Technical Communication in CEE (junior standing)	1
F	CEE:3003 Project Management Skills (senior standing)	1

Required: Structures, Mechanics, & Materials (6 sh) sh

F	CEE:4506 Design of Concrete Structures (P: CEE:3533)	3
S	CEE:4535 Design of Steel Structures (P: CEE:3533)	3

Electives: Structures, Mechanics, & Materials (21 sh) sh

CEE Design Course*

select one course from this list

F	CEE:4157 Environmental Engineering Design (P: CEE:3155)	3
F	CEE:4374 Water Resource Design (P: CEE:3371)	3
F	CEE:4762 Design of Transportation Systems (P: CEE:3763)	3

Electives: Focus Area, Minor, Certificate, etc. sh

select 4 courses from the list below

S	CEE:3783 Surveying & Remote Sensing (P: ENGR:1100)	3
F	CEE:4135 Structural Modeling & Health Monitoring (P: CEE:3533 & ENGR:2750)	3
S	CEE:4160 Introduction to Bridge Engineering (spring semester, even years) (P: CEE:3533)	3
S	CEE:4162 Structural Systems for Buildings (spring semester, odd years) (P: CEE:3533)	3
F	CEE:4164 Design of Wood Structures (P: CEE:3533)	3
F/S	CEE:4511 Scientific Computer & Machine Learning (P: MATH:2560)	3
S	CEE:4512 Engineering Design Optimization (P: ENGR:2110 & MATH:2550; Requirement: junior st)	3
S	CEE:4532 Fundamentals of Vibrations (see MyUI for offerings) (P: ENGR:2750)	3
S	CEE:4533 Finite Element I (P: ENGR:2750)	3
F	CEE:4539 Foundations of Structures (P: CEE:3530)	3
S	CEE:5179 Continuum Mechanics (see MyUI for offerings) (P: ENGR:2750 or ENGR:2510)	3
	CEE:5236 Optimization of Structural Systems	
F	CEE:5540 Intermediate Mechanics of Deformable Bodies (P: ENGR:2750)	3

Electives: Focus Area, Minor, Certificate, etc. sh

select 2 courses from the list below

	Any additional CEE Design Course(s) listed above	
	Any additional elective course(s) in CEE	
S	ISE:2500 Engineering Economy (C: STAT:2020)	3
F/S	ENGR:2120 Electrical Circuits (C: MATH:2560)	3
F/S	ENGR:2995 Intro to AI & Machine Learning in Engineering (P: ENGR:1300; C: MATH:2550)	3
F/S	ENGR:2730 Computers in Engineering (P: ENGR:1300)	3

Any pre-approved non-engineering Focus Area course(s)
(see CEE web site for list of pre-approved courses)

All other course(s) require approval for Focus Area credit
(see CEE web site regarding the approval process)

Total Semester Hour Requirements: 129