

Fall 2019

TOTAL Credit Hours = 129

C or better for critical prerequisites

Maximum of 6 Tech Elective credits

FALL SEMESTER		Cr Hours	Grade
CIE 100	Intro to Civil & Env Eng	1	_____
CIE 110	Materials	3	_____
CIE 111	Materials Lab	1	_____
CHY 131	Chemistry for Engr	3	_____
CHY 133	Chemistry Lab	1	_____
ENG 101	College Comp	3	_____
MAT 126	Calculus I	4	_____
semester credits		16	

SPRING SEMESTER		Cr Hours	Grade
CIE 101	Civil Eng Graphics	3	_____
CIE 115	Computing in CE	3	_____
MAT 127	Calculus II	4	_____
PHY 121	Engr Physics I	4	_____
_____	HVSC W S C P A ¹	3	_____
semester credits		17	

FALL SEMESTER		Cr Hours	Grade
MAT 228	Calculus III	4	_____
MEE 150	Statics	3	_____
PHY 122	Engineering Physics II	4	_____
SVT 102	Surveying Principles	3	_____
CMJ 103	Fund of Public Comm	3	_____
semester credits		17	

SPRING SEMESTER		Cr Hours	Grade
CIE 225	Transportation Engr	3	_____
MAT 258	Diff Eq & Lin Alg	4	_____
MEE 251	Strength of Materials	3	_____
_____	HVSC W S C P A ¹	3	_____
_____	Approved sci. elective ⁷	4	_____
semester credits		17	

FALL SEMESTER		Cr Hours	Grade
CIE 331	Fund Env Eng	3	_____
CIE 340	Intro to Structural Anal	4	_____
CIE 350	Hydraulics	3	_____
CIE 351	Hydraulics Lab	1	_____
ENG 320	Tech Comm for Engineering ²	3	_____
_____	HVSC W S C P A ¹	3	_____
semester credits		17	

SPRING SEMESTER		Cr Hours	Grade
CIE 365	Soil Mechanics	3	_____
CIE 366	Soil Mechanics Lab	1	_____
STS 332	Statistics for Engr	3	_____
_____	CIE Elective ^{3,4}	3 4	_____
_____	CIE Elective ^{3,4}	3 4	_____
_____	Engr Sci Elect ⁵	3	_____
semester credits		16	

FALL SEMESTER		Cr Hours	Grade
CIE 412	Engineering Decisions ^{2,6}	3	_____
CIE 413	Project Mgmt ⁶	2	_____
_____	CIE Elective ^{3,4}	3 4	_____
_____	CIE Elective ^{3,4}	3 4	_____
_____	CIE Elect or Tech Elective ^{3,4}	3	_____
_____	HVSC W S C P A ¹	3	_____
semester credits		17	

SPRING SEMESTER		Cr Hours	Grade
CIE 411	Engineering Proj Design	3	_____
_____	CIE Elective ^{3,4}	3 4	_____
_____	CIE Elect or Tech Elective ^{3,4}	3	_____
_____	HVSC W S C P A ¹	3	_____
semester credits		12	

- Students are assisted by faculty advisors in developing an elective program to meet their individual needs within the University's general education requirements. While most of the general education requirements are automatically met with a civil engineering degree, a student is required to select an additional 15 credit hours of electives to help meet the 18 credit hour "Human Values and Social Context" requirement (the required CMJ 103 satisfies the other three credit hours). Courses used for credit as an Approved Science Elective, Technical Elective and ENG 320 cannot be used for credit in the Human Values and Social Contexts area, but can be used to fulfill HVSC sub-categories such as Population and the Environment.
- General education requirements mandate two writing intensive courses. CIE 412 is designated as a writing intensive course within the CIE major, while ENG 320 meets the outside-the-major writing intensive course.
- Civil Engineering and technical electives must be a minimum of 21 credit hours with no more than two technical elective courses (6 credits maximum). Civil engineering electives are advanced (400 or 500 level) civil engineering courses. The technical elective is an advanced Civil Engineering course or CIE 394 Civil Engineering Practice or other advanced level engineering, science, or mathematics course relevant to Civil Engineering. In addition, ERS 101 Intro to Geology, BIO 100 Basic Biology and CHY 122/124 can be taken as technical electives.
- An additional requirement of the CIE Electives is that students take a CIE elective course in three of the five civil engineering sub-disciplines: Transportation (CIE 42X), Environmental (CIE 43X), Structural (CIE44X), Water Resources (CIE 45X), and Geotechnical (CIE 46X).
- Three credits of approved engineering science electives, usually in mechanical or electrical engineering, are required. Civil Engineering courses cannot be used for these three specific credit hours. Typical courses taken are:

MEE	230	Thermodynamics I	MEE	270	Dynamics
ECE	209	Fundamentals of Electric Circuits			

- CIE 413 must be taken in the fall semester immediately preceding CIE 411.
- Courses satisfying the Approved Science Elective are: BIO 100 Basic Biology, ERS 101 Introduction to Geology, ERS 102 Environmental Geology of Maine, EES 140/141 Soil Science and SMS 302/303 Oceanography

SPECIAL NOTE:

Sixteen credit hours of engineering design courses are required. Eleven hours are earned in the required courses. At least five additional design hours must be included in the electives selected by the student. The College of Engineering only allows seniors whose "advancement in the field will permit their taking a graduate level course among graduate students without disadvantage to themselves" to take 500-level courses. The design content of CIE electives are as follows:

Engineering Science & Design Content of Departmental Electives

Course No.	*	Engr. Design	Engr. Science	Course No.	*	Engr. Design	Engr. Science
CIE 394		1-3	0	CIE 533	E	0	3
CIE 424	T	2	1	CIE 534	E	0	3
CIE 425	T	1	2	CIE 537	E	0	3
CIE 426	T	3	0	CIE 540	S	0	3
CIE 428	T	2	1	CIE 543	S	2	1
CIE 430	E	3	1	CIE 544	S	4	0
CIE 431	E	3	0	CIE 545	S	0	3
CIE 434	E	4	0	CIE 548	S	3	0
CIE 439	E	0	3	CIE 549	S	0	3
CIE 440	S	0	4	CIE 556	W	1	2
CIE 442	S	4	0	CIE 562	G	3	0
CIE 443	S	4	0	CIE 563	G	1	1
CIE 450	W	1	2	CIE 564	G	3	0
CIE 455	W	1	2	CIE 565	G	3	0
CIE 456	W	1	2	CIE 566	G	3	0
CIE 460	G	3	0	CIE 567	G	3	0
CIE 480		0	3				

- T = transportation; E = environmental; W = water resources; S = structures; G = geotechnical

University of Maine Courses Meeting CIE Technical Elective Requirements

¹Biochemistry, Microbiology & Molecular Biology

BMB 280 Intro Molecular & Cellular Biology

BMB 322 Biochemistry

¹Biological Engineering

BLE 462 Power Transmission and Control

Biology

BIO 100 Basic Biology

BIO 200 Biology of Organisms

BIO 222 Biology: The Living Science

BIO 319 General Ecology

BIO 468 Limnology

¹Chemical Engineering

CHE 420 Colloid Technology

CHE 480 Pollution Prevention in Industrial Ecology

Chemistry

CHY 122 The Molecular Basis of Chemical Changes

CHY 242 Principles of Quantitative Analysis and Solution Equilibria

CHY 251 Organic Chemistry I

CHY 252 Organic Chemistry II

CHY 443 Instrumental Analysis

CHY 471 Physical Chemistry I

CHY 472 Physical Chemistry II

¹Civil & Environmental Engineering

CIE 394/498/598 courses

Computer Science

COS 215 Introduction to Computing Using FORTRAN

COS 220 Introduction to C++ Programming

COS 221 Advanced C++ Programming

Construction Management

CET 412 Sustainable Population and Environmental Design and Construction

CET 425 Virtual Design and Construction

CET 462 Construction Planning and Scheduling

Earth Science

ERS 101 Introduction to Geology

ERS 102 Environmental Geology of Maine

ERS 210 Geology Applied to Engineering

ERS 315 Principles of Sedimentology and Stratigraphy

ERS 316 Structural Geology

ERS 317 Introduction to Geophysics

ERS 369 Energy Resources and Climate Change

ERS 420 Computation in Earth Science

ERS 441 Glaciers and Our Landscape

ERS 461 Fluvial Processes in Geomorphology

Ecology and Environmental Science

EES 418 Environmental Assessment and Management Techniques

EES 450 Principles of Environmental Science

Economics

ECO 341 Waste Management

ECO 366 Applied Data Analysis for Resource Economics and Policy

ECO 377 Introduction to Natural Resource Economics and Policy

ECO 381 Sustainable Development Principles and Policy

ECO 405 Sustainable Energy Economics & Policy

ECO 473 Economic and Policy Applications of GIS
ECO 477 Economics of Environmental and Resource Management
ECO 479 Land Use Planning

¹Electrical and Computer Engineering

ECE 209 Fundamentals of Electrical Circuits

Electrical Engineering Technology

EET 321 Electro-Mechanical Energy Conversion
EET 323 Power Systems Analysis
EET 460 Renewable Energy and Electricity Production

Global Positioning Systems

400 level courses

Information Systems Engineering

ISE 303 Human-Computer Interaction
ISE 304 Digital Image Processing
ISE 305 Digital Video Analysis
ISE 403 Spatial Database Systems
ISE 404 Time in Information Systems Design

Marine Sciences

SMS 302 Oceanography
SMS 402 Oceans and Climate Change

Mathematics

MAT 400 Topics in Mathematics
MAT 453 Partial Differential Equations I
MAT 471 Differential Geometry

¹Mechanical Engineering

MEE 230 Thermodynamics I
MEE 231 Thermodynamics II
8MEE 270 Applied Mechanics: Dynamics

Plant, Soil & Environmental Science

PSE 140 Soil Science
PSE 344 Soil and Water Quality: Human Impacts on the Environment
PSE 413 Wetland Delineation and Mapping
PSE 423 Wetland Ecology and Conservation

School of Forestry Resources

SFR 400 Applied Geographic Information Systems
SFR 454 Wood Composites
SFR 455 Bioenergy Sources, Systems and Environmental Effects
SFR 482 Industrial Ecology and Life Cycle Assessment

Surveying Engineering Technology

SVT 329 Site Planning and Subdivision Design
SVT 331 Photogrammetry
SVT 341 Advanced Surveying
SVT 437 Practical GPS

Wildlife Ecology

WLE 423 Wetland Ecology and Conservation

Notes:

¹ 300/400/500 level courses in CIE, other engineering disciplines, and math and sciences are typically accepted. Refer to advisor for approval of courses in other engineering disciplines designated as 498 or 598.

² Refer courses (including those for the Renewable Energy Minor) not listed to advisor for approval.

