BS CIVIL ENGINEERING
2021-2022

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No Major or Support courses may be selected as credit/no credit.

MAJOR COURSES		
CE 111	Introduction to Civil Engineering	1
CE 112	Design Principles in Civil Engineering	2
CE 113	Computer Aided Drafting in Civil Engineering	2
Select one of the following two options: [1]		5
CE 204 & CE 207 or CE 208	Mechanics of Materials I and Mechanics of Materials II Mechanics of Materials	
CE 222	Introductory Experiments in Transportation Engineering	1
CE 251	Programming Applications in Engineering	2
CE 259	Civil Engineering Materials	2
CE 321 & CE 322	Fundamentals of Transportation Engr & Fundamentals of Transportation Engr Lab	4
CE 336 & CE 337	Water Resources Engineering and Hydraulics Laboratory	5
CE 352	Structural Engineering	4
CE 355	Reinforced Concrete Design	4
CE/CM 371	Construction Mgmt and Project Planning	4
CE 381 & CE 382	Geotechnical Engineering and Geotechnical Engineering Lab	5
CE 465	Civil Engineering Professional Practice	1
CE 466 & CE 467	Senior Design Project I and Senior Design Project II	6
Technical Electives [2, 3, 4] (see reverse for list)		24
Total Major Units		**72**

SUPPORT COURSES		
BIO 213 & BMED 213	Life Science for Engineers and Bioengineering Fundamentals (B2) [5]	4
BRAE 239	Engineering Surveying	4
CHEM 124	Gen Chem for Physical Sci & Engr I (B1 & B3) [5]	4
CHEM 125	Gen Chem for Physical Sci & Engr II	4
ENVE 331	Fundamentals of Environmental Engineering	4
GEOL 201	Physical Geology	3
MATE 210	Materials Engineering	3
MATE 215	Materials Laboratory I	1
MATH 141	Calculus I (B4) [5]	4
MATH 142	Calculus II (B4) [5]	4
MATH 143	Calculus III (Area B Electives) [5]	4
MATH 241	Calculus IV	4
MATH 244	Linear Analysis I	4
ME 211	Engineering Statics	3
ME 212	Engineering Dynamics	3
ME 341	Fluid Mechanics I	3
PHYS 141	General Physics IA (Area B Electives) [5]	4
PHYS 132	General Physics II	4
PHYS 133	General Physics III	4
STAT 312	Statistical Methods for Engineers (Upper-Division B) [5]	4
Approved Engineering Science Elective [2, 4, 6] (see reverse for list)		2-4
Total Support Units		**74-76**

GENERAL EDUCATION		
Area A English Language Communication and Critical Thinking		
A1	Oral Communication	4
A2	Written Communication	4
A3	Critical Thinking	4
Area B	**Scientific Inquiry and Quantitative Reasoning**	
B1	Physical Science (4 units in Support) [5]	0
B2	Life Science (4 units in Support) [5]	0
B3	One lab taken with either a B1 or B2 course	
B4	Mathematics/Quantitative Reasoning (8 units in Support) [5]	0
Upper-Division B (4 units in Support) [5]		0
Area B Electives (8 units in Support) [5]		0
Area C	**Arts and Humanities**	
Lower-division courses in Area C must come from three different subject prefixes.		
C1	Arts	4
C2	Humanities	4
Lower-Division C Elective - Select a course from either C1 or C2.		4
Upper-Division C		4
Area D	**Social Sciences**	
D1	American Institutions (Title 5, Section 40404 Requirement)	4
Area D Elective - Select either a lower-division D2 or upper-division D course.		4
Area E	**Lifelong Learning and Self-Development**	
Lower-Division E		4
Area F	**Ethnic Studies**	
Lower-Division F		4
Total GE Units		**44**
FREE ELECTIVES		**0**
TOTAL DEGREE UNITS		**190-192**

FOOTNOTES

[1] Transfer students take CE 208 in the Fall Quarter.

[2] Consultation with advisor is recommended prior to selecting Technical or Approved Electives; bear in mind your selections may impact pursuit of post-baccalaureate studies and/or goals.

[3] Additional guidelines for Technical Electives:

1. More than 4 units of coursework outside CE/ENVE is only permitted in special/unusual cases and requires written justification by the student, and approval by the Department Chair.
2. No more than 4 combined units of CE 400, CE 500 and ENVE 400, ENVE 500 can count towards the degree.
3. No more than 8 combined units of CE 470 / ENVE 470, CE 471 / ENVE 471, CE 570 / ENVE 570, CE 571 / ENVE 571 can be credited.
4. Co-op, graduate seminar, senior project/design, and thesis courses are not permitted.
5. Only one course can be credited for CE 459 / CE 556

[4] Degree credit will only be given to one of the following courses: IME 314 or IME 315.

[5] Required in Major or Support; also satisfies General Education (GE) requirement.

[6] If a course is taken to meet the Approved Engineering Science Elective requirement, it cannot be double-counted as another Major or Support requirement.

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Major Technical Electives [2, 3, 4]

In consultation with faculty advisor, select from CE 356, ENVE 325, CE/CM 436 and any 400-500 level CE and ENVE courses not required in Major Courses (a maximum of 4 units may be selected from the following list):

ARCE 305	Masonry Design
ARCE 372	Steel Structures Design Laboratory
BIO/NR/SS 421	Wetlands
BMED/CE/ME 404	Applied Finite Element Analysis
BRAE 345	Aerial Photogrammetry and Remote Sensing
BRAE 447	Advanced Surveying with GIS Applications
BRAE 532	Water Wells and Pumps
CHEM 341	Environmental Chemistry: Water Pollution
CM 310	Construction Means and Methods
CM 334	Construction Law
CRP 420	Land Use Law
CRP 435	Transportation Theory
CRP/NR 404	Environmental Law
CRP/NR 408	Water Resource Law and Policy
ERSC 442	Applied Environmental Groundwater Hydrology
ERSC/GEOL 401	Field-Geology Methods
ERSC/GEOL 402	Geologic Mapping
GEOL 415	Structural Geology
IME 314	Engineering Economics
or IME 315	Financial Decision Making for Engineers
MATE 425	Corrosion Engineering
MATE 450	Fracture and Failure Analysis
MATH 344	Linear Analysis II
SS 423	Environmental Soil and Water Chemistry

Support Area Approved Engineering Science Elective [2, 5]

Select from the following:

CM 280	Building Information Modeling
CSC 231	Programming for Engineering Students
CSC 234	C and Unix
EE 201	Electric Circuit Theory
IME 314	Engineering Economics
or IME 315	Financial Decision Making for Engineers
MATH 304	Vector Analysis
MATH 344	Linear Analysis II
ME 302	Thermodynamics I