

# CIVIL ENGINEERING - BS, COASTAL ENGINEERING TRACK

## Program Requirements

### Second Year

		Semester Credit Hours
<b>Fall</b>		
CVEN 207	Introduction to the Civil Engineering Profession	2
CVEN 221	Engineering Mechanics: Statics	3
CVEN 250	Introduction to Graphics and Visualization Applications in Civil Engineering Design	2
ENGR 217/ PHYS 217	Experimental Physics and Engineering Lab III - Electricity and Magnetism	2
MATH 251	Engineering Mathematics III	3
PHYS 207	Electricity and Magnetism for Engineering and Science	3
STAT 211	Principles of Statistics I	3
<b>Semester Credit Hours</b>		<b>18</b>

### Spring

CVEN 302	Computer Applications in Engineering and Construction	3
CVEN 303	Civil Engineering Measurement	3
CVEN 305	Mechanics of Materials	3
CVEN 311/ EVEN 311	Fluid Dynamics	3
ENGL 210 or COMM 205	Technical and Professional Writing or Communication for Technical Professions	3
MATH 308	Differential Equations	3
<b>Semester Credit Hours</b>		<b>18</b>

### Third Year

		Semester Credit Hours
<b>Fall</b>		
CVEN 306	Materials Engineering for Civil Engineers	3
CVEN 322	Civil Engineering Systems	3
CVEN 345	Theory of Structures	3
CVEN 363	Engineering Mechanics: Dynamics	3
Technical coursework <sup>6</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

### Spring

CVEN 399	Mid-Curriculum Professional Development	0
Technical coursework <sup>6</sup>		12
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>3</sup>		3
<b>Semester Credit Hours</b>		<b>15</b>

### Fourth Year

		Semester Credit Hours
<b>Fall</b>		
CVEN 424	Civil Engineering Professional Practice <sup>7</sup>	2

Technical coursework <sup>6</sup>	11
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>3</sup>	3

**Semester Credit Hours 16**

### Spring

PHIL 482/ ENGR 482	Ethics and Engineering	3
Technical coursework <sup>6</sup>		9
University Core Curriculum ( <a href="http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/">http://catalog.tamu.edu/undergraduate/general-information/university-core-curriculum/</a> ) <sup>3</sup>		3

**Semester Credit Hours 15**

**Total Semester Credit Hours 97**

<sup>6</sup> A total of 35 hours of technical coursework is required. Technical coursework is divided into five categories: breadth courses, design courses, focus courses, a science course, and a capstone design course. The total number of hours between breadth, design, and focus courses must add up to 29 hours. The choice of courses to be taken in each of the five categories depends on the track chosen and must be made in consultation with the student's advisor and/or the Civil and Environmental Engineering Undergraduate Student Services Office to ensure pre- and co-requisites are satisfied. Capstone design courses must include more than one civil engineering context.

<sup>7</sup> All students must take at least two courses in their major that are designated as writing intensive (W). CVEN 207 and CVEN 424 taken at Texas A&M satisfy this requirement. Other CVEN courses may be approved as W courses at a later date. A grade of C or better is required in these courses.

A grade of C or better is required in all science, mathematics and engineering courses taken to satisfy degree requirements.

## Total Program Hours 128

## Coastal Engineering Track - Technical Coursework

Technical coursework for the BS in Civil Engineering, Coastal Engineering Track are composed of breadth courses (10-12 semester credit hours), design courses (6-15 semester credit hours), focus courses (2-13 semester credit hours), a science course (3 semester credit hours), and a capstone design course (3 semester credit hours), as delineated below, for a total of 35 semester credit hours. A substitution for any course in the track must be approved in writing by the Civil and Environmental Engineering Undergraduate Student Services Office.

Code	Title	Semester Credit Hours
<b>BREADTH</b>		
CVEN 301/ EVEN 301	Environmental Engineering	3
CVEN 339/ EVEN 339	Water Resources Engineering	3
Select from the following:		4-6
CVEN 304/ EVEN 304	Environmental Engineering Lab <sup>1</sup>	1

CVEN 336	Fluid Dynamics Laboratory <sup>1</sup>	
CVEN 342	Materials of Construction <sup>1</sup>	
	or CVEN 343 Portland Cement Concrete Materials for Civil Engineers	
CVEN 365	Introduction to Geotechnical Engineering <sup>1</sup>	
EVEN 404	Environmental Unit Operations Laboratory <sup>1</sup>	

**DESIGN**

CVEN 465	Coastal Resilience	3
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Select from the following: 3-12

CVEN 402/ Engineered Environmental Systems  
EVEN 402

CVEN 455 Urban Stormwater Management

CVEN 458/ Hydraulic Engineering of Water

EVEN 458 Distribution Systems

CVEN 462/ Engineering Hydrogeology

EVEN 462

**FOCUS**

Select from the following: 2-13

BAEN 320 Engineering Thermodynamics  
or MEEN 315 Principles of Thermodynamics

CVEN 314 Sensor Technology in Civil  
Engineering

or CVEN or Sensor Technology for the Built  
Environment

CVEN 406/ Environmental Protection and  
EVEN 406 Public Health

CVEN 413/ Natural Environmental Systems  
EVEN 413

CVEN 423 Geomatics for Civil Engineering

CVEN 450 AutoCAD in Civil Engineering

CVEN 463/ Engineering Hydrology

EVEN 463

CVEN 464 Environmental Fluid Mechanics

CVEN 485 Directed Studies<sup>2</sup>

CVEN 491 Research<sup>2</sup>

EVEN 466 Sustainability and Life Cycle  
Analysis

**SCIENCE**

Select from the following: 3

ATMO 201 Weather and Climate

ATMO 363 Introduction to Atmospheric  
Chemistry and Air Pollution

BESC 201 Introduction to Bioenvironmental  
Sciences

BIOL 113 Essentials in Biology

ECCB 205 Fundamentals of Ecology

GEOL 104 Physical Geology

GEOL 320 Geology for Civil Engineers

GEOG 203 Planet Earth

GEOS 105 Introduction to Environmental  
Geoscience

OCNG 310 Physical Oceanography

RWFM 375 Conservation of Natural Resources

**CAPSTONE DESIGN**

CVEN 400	Design Problems in Civil Engineering	3
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**Total Semester Credit Hours 35**

<sup>1</sup> The following courses satisfy the laboratory course requirement, CVEN 304/EVEN 304, CVEN 336, CVEN 342 or CVEN 343, CVEN 365, EVEN 404.

<sup>2</sup> Up to 2 hours of CVEN 485 or CVEN 491 may be used.