

# CIVIL ENGINEERING

Bachelor of Science in Civil Engineering (BSCE)  
Capstone Design Requirements



## NATURE OF THE WORK

Civil engineers design and supervise the construction of roads, buildings, airports, tunnels, dams, bridges, and water supply and sewage systems. They must consider many factors in the design process from the construction costs and expected lifetime of a project to government regulations and potential environmental hazards such as earthquakes and hurricanes. Civil engineering, considered one of the oldest engineering disciplines, encompasses many specialties. The major ones are structural, water resources, construction, transportation, and geotechnical engineering. Many civil engineers hold supervisory or administrative positions, from supervisor of a construction site to city engineer. Others may work in design, construction, research, and teaching.

*(compiled from U.S. Dept. of Labor Occupational Outlook Handbook 2010-2011)*

## USF DEPARTMENT OF CIVIL AND ENVIRONMENTAL ENGINEERING EXPERTISE

Structural Engineering	Water Resources
Engineering Mechanics	Transportation
Materials	Geotechnical
Environmental	Sustainability

The University of South Florida Bachelor of Science degree programs in Chemical Engineering, Civil Engineering, Computer Engineering, Electrical Engineering, Industrial Engineering and Mechanical Engineering are accredited by the Engineering Accreditation Commission of the Accreditation Board for Engineering and Technology. The Bachelor of Science in Computer Science program at the University of South Florida is accredited by the Computing Accreditation Commission of the Accreditation Board for Engineering and Technology. ABET 111 Market Place, Suite 1050, Baltimore, MD 21202-4012 telephone: (410) 347-7700.

## > EDUCATION REQUIREMENTS > JOB OUTLOOK > SALARY

- A bachelor's degree in civil engineering is required for most entry-level jobs, but some research positions may require a graduate degree.
- Continuing education is critical for engineers in order to keep up with improvements in technology.
- Overall job opportunities for engineers are expected to be good.
- Average starting salary - \$48,178 (NACE spring 2011)

## REAL WORLD OPPORTUNITIES

**Co-ops and Internships** – These programs offer students numerous opportunities to engage with the broader-based engineering, technology and science community.

**Engineering EXPO** – This student-run event exposes school children to science and engineering principles in a two-day, on campus event.

**Research Experiences for Undergraduates** – The program aims to give undergraduate students an opportunity to directly participate in state-of-the-art research efforts. Students work as Research Assistants with professors and graduate students on a variety of exciting and interdisciplinary research projects.

**Scholarships** – More than 100 scholarships are awarded to USF engineering students totaling more than \$150,000 to provide financial support and recognizing their exceptional efforts.

## STUDENT ORGANIZATIONS

American Society of Civil Engineers  
Institute of Transportation Engineers  
USF Emerging Green Builders  
American Water Works Association(AWWA)

Engineers Without Borders  
Engineers for Sustainable World  
Student Chapter of the Florida Engineering Society  
National Society of Black Engineers  
Society of Hispanic Engineers  
Society of Women Engineers  
Tau Beta Pi The Engineering Honor Society  
Theta Tau



For more information  
<http://outreachrequest.eng.usf.edu>  
[www.eng.usf.edu](http://www.eng.usf.edu)

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# UNIVERSITY OF SOUTH FLORIDA COLLEGE OF ENGINEERING

## 2011-12 CURRICULUM

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### Civil Engineering Concentration AND CAPSTONE DESIGN Requirements

Civil Engineering students take one of the 3 tracks next listed:

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#### STRUCTURES/MATERIALS/GEOTECHNICAL TRACK

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CES 4702 Concepts of Concrete Design.....	3
CES 4605 Concepts of Steel Design.....	3
CGN 4851 Concrete Construction Materials .....	3
CEG 4012 Geotechnical Engineering II	
or	
TTE 4005 Transportation Engineering II .....	3
Technical Elective.....	3
CES 4750 Capstone Structures/Materials/Geotechnical Design.....	3

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#### GEOTECHNICAL/TRANSPORTATION TRACK

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CGN 4851 Concrete Construction Materials .....	3
CEG 4012 Geotechnical Engineering II .....	3
TTE 4005 Transportation Engineering .....	3
Technical Elective.....	3
Technical Elective.....	3
CEG 4850 Capstone Geotechnical/Transportation Design.....	3

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#### ENVIRONMENTAL/WATER RESOURCES TRACK

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ENV 4417 Water Quality and Treatment.....	3
CWR 4540 Water Resources Engineering.....	3
CEG 4012 Geotechnical Engineering II	
or	
TTE 4005 Transportation Engineering II .....	3
Technical Elective.....	3
Technical Elective.....	3
CWR 4812 Capstone Water Resources/Environmental Design .....	3

### The Program supports the following technical elective courses:

CCE 4031 Construction Management.....	3	ENV 4417 Water Quality and Treatment.....	3
CEG 4012 Geotechnical Engineering II .....	3	SUR 2101C Engineering Land Surveying .....	3
CES 4605 Concepts of Steel Design.....	3	TTE 4003 Transportation and Society .....	3
CES 4702 Concepts of Concrete Design.....	3	TTE 4005 Transportation Engineering II .....	3
CGN 4851 Concrete Construction Materials .....	3		
CGN 4933 Special Topics in Civil & Environmental Engineering**.....	3		
CWR 4540 Water Resources Engineering I.....	3		

\*\*Please see academic advisor for selected special topics courses.