

CIVIL ENGINEERING

Program Information

The civil engineering program is offered through the Department of Civil and Coastal Engineering with the following degrees:

- Doctor of Philosophy
- Master of Engineering
- Master of Science

The master's degree in civil engineering is also offered through the Electronic Delivery of Graduate Engineering (EDGE) program, which is a distance learning program delivered either via streaming video or DVD directly to the students. Subject to approval by the supervisory committee, graduate-level courses taken through the College of Engineering (EGN), Departments of Environmental Engineering Sciences, Geological Sciences, and Mechanical and Aerospace Engineering are considered as major credit.

For courses taken through the Department of Civil and Coastal Engineering, credit hours graded S/U will not count toward graduation except for

- 6 hours of CGN 6971 Research for Master's Thesis (1-15 cr.) or EOC 6971 Research for Master's Thesis (1-15 cr.) for thesis students
- 3 hours of CGN 6974 Master of Engineering or Engineer Degree Report (1-6 cr.) for students working on the M.E. report
- CGN 7979 Advanced Research (1-12 cr.) or EOC 7979 Advanced Research (1-12 cr.)
- CGN 7980 Research for Doctoral Dissertation (1-15 cr.) or EOC 7980 Research for Doctoral Dissertation (1-15 cr.)

The department offers a combined bachelor's/master's degree program for current UF undergraduate students who intend to complete a graduate degree at UF. Please contact the undergraduate coordinator for information.

Degrees Offered

Degrees Offered with a Major in Civil Engineering

- Doctor of Philosophy
 - without a concentration
 - concentration in Geographic Information Systems
 - concentration in Hydrologic Sciences
 - concentration in Wetland Sciences
- Master of Engineering
 - without a concentration
 - concentration in Geographic Information Systems
 - concentration in Hydrologic Sciences
 - concentration in Structural Engineering
 - concentration in Wetland Sciences
- Master of Science
 - without a concentration
 - concentration in Geographic Information Systems
 - concentration in Hydrologic Sciences

- with a concentration in Structural Engineering
- concentration in Wetland Sciences

Requirements for these degrees are given in the Graduate Degrees (<http://catalog.ufl.edu/graduate/degrees/>) section of this catalog.

Courses

Hydrology / Water Resources Shared Courses

Code	Title	Credits
CGN 6905	Special Problems in Civil Engineering	1-6
CWR 5125	Groundwater Flow I	3
CWR 5127	Evaluation of Groundwater Quality	3
CWR 5235	Open Channel Hydraulics	3
CWR 6115		3
CWR 6126	Variable-Density Groundwater Flow	3
CWR 6525	Groundwater Flow II	3
CWR 6537	Contaminant Subsurface Hydrology	3
EGM 5816	Intermediate Fluid Dynamics	3
ENV 5518	Field Methods in Environmental Hydrology	3
ENV 5565		3
ENV 6052	Immiscible Fluids in Porous Media	3
ENV 6441	Water Resources Planning and Management	3
ENV 6508	Wetland Hydrology	3
ENV 6932	Special Problems in Environmental Engineering	1-4

Civil and Coastal Engineering Departmental Courses

Code	Title	Credits
CCE 5035	Construction Planning and Scheduling	3
CCE 5405	Construction Equipment and Procedures	3
CCE 6016	Advanced Engineering Cost Estimating	3
CCE 6037	Civil Engineering Operations I	3
CEG 5105	Geotechnical Engineer	3
CEG 5114	Advanced Geotechnical Aspects of Landfill Design	3
CEG 5115	Foundation Design	3
CEG 5205C	Insitu Measurement of Soil Properties	3
CEG 5805	Ground Modification Design	2
CEG 6015	Advanced Soil Mechanics	3
CEG 6116	Advanced Shallow Foundation Design	3
CEG 6117	Advanced Deep Foundation Design	3
CEG 6405	Seepage in Soils	3
CEG 6505	Numerical Methods of Geomechanics	3
CEG 6515	Earth Retaining Systems and Slope Stability	3
CES 5010	Probabilistic and Stochastic Methods in Civil Engineering	3
CES 5116	Finite Elements in Civil Engineering	3
CES 5325	Design of Highway Bridges	3
CES 5606	Topics in Steel Design	3
CES 5607	Behavior of Steel Structures	3
CES 5715	Prestressed Concrete	3
CES 5801	Design and Construction in Timber	3
CES 5835	Design of Reinforced Masonry Structures	3
CES 6106	Advanced Structural Analysis	3
CES 6108	Structural Dynamics	3
CES 6551	Design of Folded Plates and Shells	3
CES 6571	Design of Temporary Structures	3

CES 6585	Wind Engineering	3
CES 6588	Protective Structures	3
CES 6590	Impact Engineering	3
CES 6591	Applied Protective Structures	3
CES 6592	Retrofit Protective Structures	3
CES 6593	Advanced Protective Structures	3
CES 6706	Advanced Reinforced Concrete	3
CGN 5125	Legal Aspects of Civil Engineering	3
CGN 5605	Public Works Planning	3
CGN 5606	Public Works Management	3
CGN 5715	Experimentation and Instrumentation in Civil Engineering Materials Research	3
CGN 6150	Engineering Project Management	3
CGN 6155	Civil Engineering Practice I	3
CGN 6156	Construction Engineering II	3
CGN 6505	Properties, Design and Control of Concrete	3
CGN 6506	Bituminous Materials	3
CGN 6525	Sustainable Materials	3
CGN 6905	Special Problems in Civil Engineering	1-6
CGN 6910	Supervised Research	1-5
CGN 6936	Civil Engineering Graduate Seminar	1
CGN 6940	Supervised Teaching	1-5
CGN 6971	Research for Master's Thesis	1-15
CGN 6974	Master of Engineering or Engineer Degree Report	1-6
CGN 7979	Advanced Research	1-12
CGN 7980	Research for Doctoral Dissertation	1-15
CWR 5125	Groundwater Flow I	3
CWR 5127	Evaluation of Groundwater Quality	3
CWR 5235	Open Channel Hydraulics	3
CWR 6116	Advanced Surface Hydrology	3
CWR 6126	Variable-Density Groundwater Flow	3
CWR 6240	Mixing and Transport in Turbulent Flow	3
CWR 6525	Groundwater Flow II	3
CWR 6537	Contaminant Subsurface Hydrology	3
EGM 5816	Intermediate Fluid Dynamics	3
EGN 5949	Practicum/Internship/Cooperative Work Experience	1-6
EGN 6640	Entrepreneurship for Engineers	3
EGN 6913	Engineering Graduate Research	0-3
EOC 5860	Port and Harbor Engineering	3
EOC 6196	Littoral Processes	3
EOC 6430	Coastal Structures	3
EOC 6850	Numerical Simulation Techniques in Coastal and Ocean Engineering	3
EOC 6905	Individual Study in Coastal and Oceanographic Engineering	1-4
EOC 6934	Advanced Topics in Coastal and Oceanographic Engineering	1-6
EOC 6939	Graduate Seminar	1
EOC 6971	Research for Master's Thesis	1-15
EOC 7979	Advanced Research	1-12
EOC 7980	Research for Doctoral Dissertation	1-15
OCP 6050	Physical Oceanography	3
OCP 6165	Ocean Waves I: Linear Theory	3
OCP 6167	Ocean Waves II: Nonlinear Theory	3
OCP 6168	Data Analysis Techniques for Coastal and Ocean Engineers	3
OCP 6295	Estuarine and Shelf Hydrodynamics I	3
OCP 6297	Coastal and Estuarine Sediment Transport	3
OCP 6298	Coastal Sediment Transport Processes	3
TTE 5006	Advanced Urban Transportation Planning	3

TTE 5256	Traffic Engineering	3
TTE 5305	Advanced Transportation Systems Analysis	3
TTE 5805	Geometric Design of Transportation Facilities	3
TTE 5837	Pavement Management Systems	3
TTE 6205	Freeway Operations and Simulation	3
TTE 6207	Advanced Highway Capacity Analysis	3
TTE 6259	Urban Streets Simulation and Control	3
TTE 6267	Traffic Flow Theory	3
TTE 6306	Computational Methods in Transportation Engineering	3
TTE 6315	Highway Safety Analysis	3
TTE 6505	Discrete Choice Analysis	3
TTE 6606	Urban Transportation Models	3

College of Engineering Courses

Code	Title	Credits
EEE 5354L	Semiconductor Device Fabrication Laboratory	3
EGN 5010L	NRF Training Lab	1
EGN 5949	Practicum/Internship/Cooperative Work Experience	1-6
EGN 6640	Entrepreneurship for Engineers	3
EGN 6642	Engineering Innovation	3
EGN 6913	Engineering Graduate Research	0-3
EGN 6933	Special Topics	1-3
EGN 6937	Engineering Fellowship Preparation	0-1
EGS 6039	Engineering Leadership	3
EGS 6101	Divergent Thinking	3
EGS 6626	Fundamentals of Engineering Project Management	3
EGS 6628	Advanced Practices in Engineering Project Management	3
EGS 6681	Advanced Engineering Leadership	3
EMA 6581	Polymeric Biomaterials	3
ESI 6900	Principles of Engineering Practice	1-4

Student Learning Outcomes

Civil Engineering (phd)

SLO 1 Knowledge

An ability to critically read engineering literature in the student's graduate program area (Civil Engineering Materials, Water Resources, Geotechnical Engineering, Construction, Structures, and Transportation); and an ability to identify, formulate new solutions to engineering problems in the student's program area.

SLO 2 Skills

An ability to develop new techniques, skills, and modern engineering tools necessary for engineering practice at an advanced level in the students program area (Civil Engineering Materials, Water Resources, Geotechnical Engineering, Construction, Structures, and Transportation).

SLO 3 Professional Behavior

Effectively communicate technical knowledge and information.

Civil Engineering (ME & MS)

SLO 1 Knowledge

An ability to identify, formulate and solve engineering problems in the student's program area. (Civil Engineering Materials, Water Resources, Geotechnical Engineering, Construction, Structures, and Transportation)

SLO 2 Skills An ability to use the techniques, skills, and modern engineering tools necessary for engineering practice at an advanced level in the student's program area (Civil Engineering Materials, Water Resources, Geotechnical Engineering, Construction, Structures, and Transportation)

SLO 3 Professional Behavior Effectively communicate technical knowledge and information