



Structural Engineering:/Geotechnical/Construction Electives*

- CCE 4001 Heavy Construction
- CES 4702 Concrete Design**
- CEG 4012 Geotechnical Engineering II**
- CEG 4126 Fundamentals of Pavement Design
- CES 3580 Hurricane Engineering and Global Sustainability (GL) (Fall only)
- CES 4605 Steel Design
- CES 4711 Intro to Prestressed Concrete Structures
- CGN 4011 Comp. Techniques & Visualization for CE
- CGN 4510 Sustainable Building Engineering
- CGN 4930 Spec. Topics: Numerical Methods
- CGN 4930 Spec. Topics: Construction Engineering Management

Transportation Electives*

- CEG 4126 Fundamentals of Pavement Design
- CGN 4321 GIS Applications in Civil and Env. Eng.
- TTE 4102 Urban Transportation Planning
- TTE 4202 Traffic Engineering
- TTE 4203 Highway Capacity Analysis
- TTE 4804 Geometric Design of Highways**

Academic Progression Standards - Students who do not pass common prerequisites after 2 attempts will be advised to change their major into an area where they can be successful. Drops after the add/drop period, which result in a DR grade, are considered an attempt in the course and count as an unsuccessful enrollment.

Environmental and Water Resources Electives*

- CGN 4321 GIS Applications in Civil and Env. Eng.
- CWR 4204 Hydraulic Engineering**
- CWR 4530 Modeling Appl. In Water Resources Eng.
- EGN 4070 Eng. for Global Sustainability and Env. Protection (GL) (Spring only)
- ENV 4024 Bioremediation Engineering
- ENV 4101 Fundamentals of Air Pollution Engineering
- ENV 4330 Hazardous Waste Assessment & Remediation
- ENV 4351 Solid and Hazardous Waste Management
- ENV 4401 Water Supply Engineering
- ENV 4513 Chemistry for Environmental Engineers
- ENV 4551 Wastewater Treatment Engineering**
- ENV 4560 Reactor Design
- ENV 4930 Special Topics: Indoor Air Quality

*If 3 electives are taken in 1 area, the student will receive a certificate.

3DESIGN ELECTIVES:** 2 are required in different areas of Civil Engineering.
2* Students may substitute [GLY1010](#) and [GLY1010L](#) with any UCC Natural Science course with lab, except for those in physics and chemistry.

1* Students may substitute [CGN3300](#) with [EGN3321](#) when [CGN3300](#) is not offered.

(GL) indicates Global Learning course. Students are required to take 2 GL courses, and at least 1 must be discipline specific.

Legend ↔ = Coreqs

GL Foundations _____	GRW-1 _____	FLENT/FLEX _____	Civics Literacy course _____	Credits taken: _____
GL Discipline _____	GRW-2 _____	Summer Req. _____	Civics Literacy Exam _____	Credits remaining: _____

PREQUISITES/COREQUISITES

All courses must be passed with a C or better. This flowchart is not an official publication of FIU CEE but has been created to help students understand the course sequence. For accurate information, please refer to the official FIU course catalog.

MAC 2311/MAC 2281 Calculus I (4)

Prerequisite: MAC 1147 or MAC 1140 & MAC 1114 or appropriate score on placement exams

MAC 2312/MAC 2282 Calculus II (4)

Prerequisite: MAC 2311 or MAC 2281

MAC 2313/ MAC 2283 Multivariable Calculus (4)

Prerequisite: MAC 2312 or MAC 2282

MAP 2302 (3)

Prerequisite: MAC 2312 or MAC 2282

PHY 2048 Physics with Calculus I (4)

Prerequisite: MAC 2311 or MAC 2281

Corequisite: PHY 2048L (MAC2311 or equivalent)

PHY 2048L Physics with Calculus I Lab (1)

Corequisite: PHY 2048

PHY 2049 Physics with Calculus II (4)

Prerequisite: PHY 2048 & MAC 2312 or MAC 2282

CHM 1045 General Chemistry I (3)

Prerequisites: MAC1105 or MAC1114 or MAC1140 or MAC1147 or any calculus course; or CHM1025 or adequate placement test score

Corequisite: CHM 1045L

CHM 1045L General Chemistry I Lab (1)

Corequisite: CHM 1045

CGN 2420 Computer Tools (3)

Prerequisite: MAC 2312 or MAC 2282, PHY 2048

Corequisite: EGN 1110C

EGN 1110C Engineering Drawing (3)

No Prerequisite

EGS 2030 Ethics & Legal Issues (1)

No Prerequisite

Corequisite: CGN 2161

EGN 3311 Statics (3)

Prerequisite: MAC 2312 or MAC 2282 & PHY 2048

Corequisite: MAC 2313 or MAC 2283

CGN3300 - Dynamics for Civil Engineering Systems

Prerequisite: EGN 3311 (Statics)

EGN 3321 Dynamics (3)

Prerequisite: EGN 3311

EGM 3520 Mechanics of Materials (3)

Prerequisite: CGN 2420, MAC 2283 or MAC 2313, & EGN 3311

Corequisite: EGM 3520L, MAP 2302,

EGM 3520L Mechanics of Materials Lab (1)

Prerequisite: CGN 2420 and EGN 3311 and (MAC 2313 or MAC 2283)

Corequisite: EGM3520 and MAP 2302

ENV 3001 Environmental Engineering (3)

Prerequisites: CHM1045, CHM1045L, and MAC2312 or MAC 2282 *Corequisite:* ENV3001LENV 3001L

Environmental Engineering Lab (1)

Prerequisites: CHM 1045, CHM 1045L, CGN2420, and MAC 2312 or MAC 2282 *Corequisite:* ENV3001.

SUR 2101C Surveying (3)

No Prerequisite

CWR 3201 Fluid Mechanics (3)

Prerequisites: MAC2313 or MAC 2283, MAP2302, and EGN3321 or EGM3503 *Corequisite:* CWR3201L

CWR 3201 Fluid Mechanics Lab (1)

Prerequisites: MAP2302 and (CGN2420 or STA3033 or ESI3215) and (EGN3321 or EGM3503 or CGN3300)

Corequisite: CWR3201

CES 3100 Structural Analysis (3)

Prerequisite: EGM 3520, EGM 3520L

EGN 3613 Engineering Economy (3)

No Prerequisite:

STA 3033 Probability & Statistics (3)

Prerequisite: MAC 2312

ESI 3215 Evaluation of Engineering Data (3)

Prerequisite: MAC 2311 or MAC 2281, or instructor permission

CEG 4011 Geotechnical Engineering (3)

Prerequisites: (CWR 3201 and CWR 3201L), and (EGM 3520 and EGM 3520L)

CEG 4011L Geotechnical Engineering Lab (3)

Prerequisites: CWR3201, CWR3201L, EGM3520, EGM3520L. *Corequisite:* CEG4011.

CES 4702 Reinforced Concrete Design (3)

Prerequisite: CES 3100

CWR 3540 Water Resources (3)

Prerequisites: CWR3201, CWR3201L, (STA3033 or ESI3215)

TTE 4201 Transportation & Traffic (3)

Prerequisites: STA 3033 or ESI 3215, EGN 3321 or CGN 3300, and SUR 2101C

CCE 4031 Project Planning for CE (3)

Prerequisite: CES3100 *Corequisite:* CEG 4011

CGN 4802 CE Senior Design Project (3)

Prerequisites: CEG 4011, CEG 4011L, TTE4201, CES 3100

CGN 4980 CE Seminar to pass FE Exam (1)

Prerequisites: EGN2030, EGN3613, ENV3001, CES3100, *Corequisites:* CWR3540, CEG4011, TTE4201

ELECTIVES

CCE 4001 Heavy Construction (3)

Prerequisite: CEG 4011 and EGN 3613

CEG 4012 Geotechnical Engineering II (4)

Prerequisites: CEG4011, CEG4011L.

CEG 4126 Fundamentals of Pavement Design (3)

Prerequisites: TTE 4201, CEG 4011, CEG 4011L

CES 3580 Hurricane Engineering (3)

Prerequisites: PHY 2048

CES 4605 Steel Design (3)

Prerequisites: CES 3100

CES 4711 Intro to Prestressed Concrete

Prerequisites: CES 4702

CGN 4011 Comp. Tech. & Visualization. for CE

Prerequisites: CGN 2420, CES 3100

CGN 4510 Sustainable Building Engineering (3)

Prerequisites: CWR 3201, CWR 3201L

CGN 4930 Spec. Topics (3)

Prerequisites: Depends on the topic.

CGN 4321 GIS Application in Civil & Env Eng (3)

Prerequisites: TTE 4201 or ENV 3001 or CWR3540

TTE 4102 Urban Transportation Planning (3)

Prerequisites: TTE 4201

TTE 4202 Traffic Engineering (3)

Prerequisites: TTE 4201

TTE 4203 Highway Capacity Analysis (3)

Prerequisites: TTE 4201

TTE 4804 Geometric Design of Highways (3)

Prerequisites: TTE 4201

CWR 4204 Hydraulic Engineering (3)

Prerequisites: CWR 3201

CWR 4530 Modeling Appl. In Water Res Eng. (3)

Prerequisites: CWR 3201

Corequisite: CWR 3540

EGN 4070 Eng. For Global Sustainability (3)

Prerequisites: ENV 3001 or PHY 2049 & CHM1045

ENV 4024 Bioremediation (3)

Prerequisites: ENV 3001, ENV 3001L

ENV 4101 Fundamentals of Air Pollution Eng. (3)

Prerequisites: CWR 3201, CWR 3201L, ENV 3001, ENV 3001L

ENV 4330 Hazardous Waste Assessment (3)

Prerequisites: CHM 1045, CHM 1045L

ENV 4351 Solid & Hazardous Waste Mgmt (3)

Prerequisites: CHM 1045, CHM 1045L

ENV 4401 Water Supply Engineering (3)

Prerequisites: CWR 3201, CWR 3201L, ENV 3001, ENV 3001L

ENV 4513 Chemistry for Env. Engineers (3)

Prerequisites: CHM 1045, CHM 1045L

ENV 4551 Wastewater Treatment Engineering (3)

Prerequisites: CWR 3201, CWR 3201L, ENV 3001, ENV 3001L

ENV 4560 Reactor Design (3)

Prerequisites: ENV 3001

ENV 4930 Special Topics (3)

Prerequisites: Depends on the topic