

Civil Engineering Technical Electives

Catalog Year Summer 2016 to Summer 2024

| Column 1: Course Name | Column 2: Course Number | Column 3: Course Name | Column 4: Course Number |
|-------------------------------------|-------------------------|------------------------------------------|-------------------------|
| Construction Methods (3)% | CCE 4004 | Thermodynamics (3) | EGN 3343 |
| Estimating & Scheduling (3)% | CCE 4034 | Principles of Electrical Engineering (3) | EGN 3373 |
| Equipment & Productivity (3)% | CCE 4402 | Entrepreneurship for Defense (3) | EGN 4630 |
| Construction Design (3)*% | CCE 4810C | Fund of Mech Behavior Materials (3)* | EMA 4223 |
| Mechanical & Elect Systems (3)% | CCE 4813 | Kinematics of Mechanisms (3) | EML 3262 |
| Geotech II (3) | CEG 4012 | Design/Analysis of Machine Comp (3)* | EML 3500 |
| Geotech Methods (3)* | CEG 4203 | Heat Transfer (3)* | EML 4142 |
| Geotech Design (3)* | CEG 4801C | Intro to Vibrations and Controls (3)* | EML 4225 |
| Structural Mechanics (3) | CES 4205 | HVAC Systems Engineering (3)* | EML 4600 |
| Steel Structures (3) | CES 4605 | Applied HVAC Engineering (3) | EML 4602 |
| Concrete Structures (3) | CES 4702 | Advanced Calculus I (4)* | MAA 4226 |
| Structural Design (3) | CES 4743C | Introduction Complex Variables (3)* | MAA 4402 |
| Engineering Reports & Liability (2) | CGN 3090 | Introduction to Graph Theory (3)* | MAD 4301 |
| Forensic Investigation for Eng (3)* | CGN 4120 | Mathematical Modeling I (3)* | MAP 4103 |
| Intro to Smart Cities (3) | CGN 4309 | Prob, Random Proc & Appl (3)* | MAP 4113 |
| Hydrology (3) | CWR 4120 | Vector and Tensor Analysis (3)* | MAP 4153 |
| Hydrogeology (3) | CWR 4124 | Optimization (3)* | MAP 4171 |
| Water Resources Design (3) | CWR 4812C | Ordinary Differential Equations II (3)* | MAP 4303 |
| Biological Process Control (4) | EES 4111C | Intro to Partial Dif Eq (3)* | MAP 4341 |
| Chemical Process Control (4) | EES 4202C | Intro to Partial Dif Eq II (3)* | MAP 4342 |
| Air Poll & Haz Waste Control (3) | ENV 4120 | Numerical Methods for Dif Eq (3)* | MAP 4371 |
| Air Pollution Design (3)* | ENV 4122C | Numerical Methods for Comp Sci (3)* | MAP 4384 |
| Sustainable Res Mgmt (3) | ENV 4341 | Matrix and Linear Algebra (4) | MAS 3105 |
| Wastewater Design (3)* | ENV 4433C | Linear Algebra (4)* | MAS 3106 |

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| Env Eng Ops & Processes (3) | ENV 4531 | Intro to Number Theory (3) | MAS 3203 |
| Adv Eng Ops & Processes (3)* | ENV 4561 | Logic and Proof in Mathematics (3) | MHF 3302 |
| Water Treatment Design (3)* | ENV 4562C | Urban and Regional Planning (3) | PAD 3330 |
| Transp Engrg Systems (3) | TTE 4274 | Land Use and Planning (3) | PAD 4331 |
| Transp Analytics (3) | TTE 4300 | General Physics III (3) | PHY 3101 |
| Urban Systems Design (3) | TTE 4601C | Mechanics I (3) | PHY 3220 |
| Analytical Chemistry (3)* | CHM 3120 | Thermal and Statistical Physics (3)* | PHY 3513 |
| Physical Chemistry I (4)* | CHM 3410 | Statistical Methods II (3) | STA 4163 |
| Physical Chemistry II (3)* | CHM 3411 | Statistical Methods III (3)* | STA 4164 |
| Applied Physical Chemistry (3)* | CHM 3422 | Statistical Theory I (3) | STA 4321 |
| Intro to Programming with C (3)* | COP *223 | Statistical Theory II (3)* | STA 4322 |
| Object Oriented Programming (3)* | COP *330 | Nonparametric Stat Methods (3)* | STA 4502 |
| Computer Science I (3) | COP 3502 | Categorical Data Analysis (3)* | STA 4504 |
| Computer Science II (3)* | COP 3503 | | |
| Analysis & Design of Aero Struct (3)* | EAS 4200 | *Additional prerequisites required | |

%CCE courses cannot be used as technical or depth electives for Civil/Construction double degree

CECE 5000 level courses (by override only) (min GPA req'd)*

CCE 5006, CCE 5205, CCE 5220, CEG 5405, CES 5144, CES 5325, CES 5606, CES 5706, CES 5821, CGN 5340, CGN 5341, CGN 5506, CGN 5617, CGN 5877, CWR 5125, CWR 5205, CWR 5515, CWR 5545, CWR 5634, CWR 5999, EES 5318, ENV 5410, ENV 5505, ENV 5517, ENV 5636, TTE 5204, TTE 5531, TTE 5805, TTE 5835