CVEN Construction Engineering Management Emphasis - Suggested Course Plan

Proficiencies (3 total)
CVEN 3256 Construction Engineering (Equipment & Methods)
CVEN 3718 Geotech Engineering II
CVEN 4555 Reinforced Concrete

CEAE Technical Electives (2 total)
AREN 4506 Project Management I
AREN 4606 Project Management II

Highly Recommended Tech/Free Electives (2 Tech Electives & 2 Free Electives)
AREN 1027 Engineering Drawing (Lower division course - must be Free Elective)
AREN 2050 Building Systems and Materials (Lower division course - must be Free Elective)
CVEN 3602 Transportation Systems
CVEN 4333 Engineering Hydrology
CVEN 4545 Steel Design
CVEN 4555 Reinforced Concrete Design
CVEN 4728 Foundation Engineering
CVEN 5555 Life-Cycle Engineering of Civil Infrastructure Systems
AREN 3010 Mechanical Systems
CEM Graduate courses with Instructor consent

Other Good Options - Tech/Free Electives
CVEN 3698 Engineering Geology
CVEN 4353 Ground Water Engineering
CVEN 4323 Water Resource Engineering Design
CVEN 4525 Analysis of Framed Structures
CVEN 4565 Timber Design
AREN 3540 Illumination 1
AREN 4110 HVAC Design
AREN 4830 Computer Simulation of Building Systems
AREN 4890 Sustainable Building Design
EMEN 4100 Business Methods and Engineering Economics
EMEN 4800 Technology Ventures and Marketing
CVEN Water Resources Emphasis - Suggested Course Plan

Proficiencies: (3 total)
CVEN 4333 Engineering Hydrology
CVEN 3424 Water and Wastewater
Choose one additional course from the following list:
   CVEN 3718 Geotechnical Engineering II
   CVEN 4555 Reinforced Concrete
   CVEN 4545 Steel Design

CEAE Technical Electives (2 total)
CVEN 4353 Groundwater Engineering
CVEN 4323 Water Resource Engineering Design
CVEN 4383 Groundwater Modeling
CVEN 5363 Modeling of Hydrologic Systems

Highly Recommended Tech/Free Electives (2 Tech Electives & 2 Free Electives)
Courses listed under CEAE Technical Electives and Proficiencies that are not used to fulfill either the CEAE Technical Elective or the Proficiencies requirement
GEOG 4321 Snow Hydrology
GEOG 4501 Water Resources and Water Management of the Western United States
ATOC 3600 Principles of Climate (requires ATOC 1050 Weather and the Atmosphere)

Other Good Options – Tech/Free Electives
CVEN 3434 Introduction to Applied Ecology
CVEN 4404 Water Chemistry
APPM 4350 Methods of Applied Mathematics: Fourier Series and Boundary Value Problems
CVEN SESM Emphasis – Suggested Course Road Map

Proficiencies (3 total)
CVEN 4545 Steel Design (spring) or CVEN 4555 Reinforced Concrete (fall)
CVEN 3718 Geotech Engineering II
CVEN 3256 Construction Engineering

CEAE Technical Electives (2 total)
CVEN 4161 Mechanics of Materials II (spring)
CVEN 4545 Steel Design (spring) or CVEN 4555 Reinforced Concrete (fall) (not taken above)

Recommended Tech Electives (2 total) and Free Electives (2 total)

Primarily Design Oriented Careers
CVEN 4525 Matrix Structural Analysis
CVEN 4535 Construction Materials
CVEN 4565 Timber Design (every other spring)
AREN 4315 Design of Masonry Structures (every other spring)
CVEN 4728 Foundation Engineering

Primarily Theoretical Oriented Careers and Graduate School Preparation
CVEN 4525 Matrix Structural Analysis
CVEN 4511 Finite Element Analysis
CVEN 5111 Introduction to Structural Dynamics
CVEN 5131 Continuum Mechanics and Elasticity
CVEN Environmental Engineering Emphasis – Suggested Course Plan

**Proficiencies (3 total)**
CVEN 3424 Water & Wastewater
CVEN 4333 Engineering Hydrology
CVEN 3718 Geotechnical Engineering II

**CEAE Technical Electives (2 total)**
CVEN 4404 Water Chemistry
CVEN 4484 Environmental Microbiology

**Highly Recommended Tech/Free Electives (2 Tech Electives & 2 Free Electives)**
CVEN 4464 Environmental Engineering Processes
CVEN 3434 Intro to Applied Ecology
CVEN 4554 Fundamentals of Air Quality Management
CVEN 4594 Water Reuse and Reclamation
EVEN 4100 Environmental Sampling and Analysis
CVEN 4474 Hazardous Waste Management
CVEN4434/EVEN4434 Environmental engineering design
CVEN 4969 Water Air Sanitation Hygiene (starting in 2017)
CVEN Geotechnical Engineering Emphasis - Suggested Course Plan

Proficiencies: (3 total)
CVEN 3718 Geotechnical Engineering 2
CVEN 4555 Reinforced Concrete
CVEN 4333 Engineering Hydrology

CEAE/Geotech Technical Electives (2 total)
CVEN 4728 Foundation Engineering
CVEN 5708 Soil Mechanics
Any CVEN 5**8 introductory graduate level geotechnical engineering course

Other Highly Recommended Tech/Free Electives (2 Free Electives & 2 Tech Electives)
Courses listed under CEAE/Geotech Technical Electives and Proficiencies that are not used to fulfill either the CEAE/Geotech Technical Elective or the Proficiencies requirement
CVEN 4161 Mechanics of Materials II
CVEN 4511 Introduction to Finite Element Analysis
CVEN 5131 Continuum Mechanics & Elasticity

Other Good Options – Tech/Free Electives
APPM 3050 Scientific Computing in Matlab
APPM 4350 Methods of Applied Mathematics: Fourier Series and Boundary Value Problems
CVEN 3424 Water & Wastewater
CVEN 5454 Statistical Methods for Natural/Engineered Systems
GEOL 5714 Field Geophysics

Note – Free Elective:
**CVEN 3698 Engineering Geology (if not already taken)