

CVEN Construction Engineering & Management Focus – Recommended Course Plan

Prerequisites for CVEN 4899 Senior Design:

CVEN 3256 Construction Equipment & Methods and AREN 4506 Pre-construction Estimating & Scheduling

Recommended Proficiencies

CVEN 3256 Construction Equipment & Methods

CVEN 4555 Reinforced Concrete Design

CVEN 3718 Geotechnical Engineering II

Recommended CEAE Technical Electives

AREN 4506 Pre-construction Estimating & Scheduling

AREN 4606 Project Execution and Control

Recommended Technical/Free Electives

CVEN 3602 Transportation Systems

CVEN 4545 Steel Design

CVEN 4728 Foundation Engineering

CVEN 4147 Civil Engineering Systems

CVEN 4333 Engineering Hydrology

CVEN 4565 Design of Wood Structures

AREN 4315 Masonry Design

CEM Graduate courses with instructor consent

Other Good Options – Technical/Free Electives

CVEN 5565 Life-cycle Engineering of Civil Infrastructure Systems

AREN 3540 Illumination I

AREN 3010 Energy Efficient Buildings

AREN 4110 HVAC System Design

AREN 4830 Computer Simulation of Building Systems

EMEN 4100 Business Methods and Engineering Economics

AREN 2050 Building Materials & Systems (counts for Free Elective only)

CVEN Water Resources Focus – Recommended Course Plan

Pre- or co-requisites for CVEN 4899 Senior Design:

CVEN 3323 Hydraulic Engineering and CVEN 4333 Engineering Hydrology

Recommended Proficiencies

CVEN 4333 Engineering Hydrology

CVEN 3424 Water and Wastewater Treatment

One of the following:

CVEN 3718 Geotechnical Engineering II

CVEN 4555 Reinforced Concrete Design

CVEN 4545 Steel Design

Recommended CEAE Technical Electives

CVEN 4353 Groundwater Engineering

CVEN 4323 Water Resources Engineering Design

CVEN 4383 Applied Groundwater Modeling

CVEN 5363 Modeling of Hydrologic Systems

Recommended Technical/Free Electives

Other CEAE technical electives/proficiencies listed above, that have not already been taken

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 – Technical/Free Electives

CVEN 3434 Introduction to Applied Ecology

CVEN 4404 Water Chemistry

APPM 4350 Methods in Applied Mathematics: Fourier Series and Boundary Value Problems

CVEN Structural Engineering & Structural Mechanics Focus – Recommended Course Plan

Requisites for CVEN 4899 Senior Design:

Prereq CVEN 4555 Reinforced Concrete Design and co-req CVEN 4545 Steel Design

Recommended Proficiencies

CVEN 4545 Steel Design or CVEN 4555 Reinforced Concrete Design

CVEN 3718 Geotechnical Engineering II

CVEN 3256 Construction Equipment & Methods

Recommended CEAE Technical Electives

CVEN 4161 Mechanics of Materials II

CVEN 4545 or 4555, whichever not taken as proficiency

Recommended Technical/Free Electives

Primarily design-oriented careers:

CVEN 4525 Analysis of Framed Structures

CVEN 4535 Construction Materials

CVEN 4565 Design of Wood Structures

AREN 4315 Design of Masonry Structures

CVEN 4728 Foundation Engineering

Primarily theoretical-oriented careers and graduate school preparation:

CVEN 4525 Matrix Structural Analysis

CVEN 4511 Intro to Finite Element Analysis

CVEN 5111 Structural Dynamics

CVEN 5131 Continuum Mechanics and Elasticity

CVEN Environmental Engineering Focus – Recommended Course Plan

Pre- or co-requisite for CVEN 4899 Senior Design:

CVEN 3424 Water & Wastewater Treatment

Recommended Proficiencies

CVEN 3424 Water & Wastewater Treatment

CVEN 4333 Engineering Hydrology

CVEN 3718 Geotechnical Engineering II

Recommended CEAE Technical Electives

CVEN 4404 Water Chemistry

CVEN 4484 Environmental Microbiology

Recommended Technical/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 & Industrial Waste Management

CVEN 4434 Environmental Engineering Design

CVEN 4969 Water and Sanitation in Developing Countries

CVEN Geotechnical Engineering Focus – Recommended Course Plan

Pre- or co-requisites for CVEN 4899 Senior Design:

CVEN 3718 Geotechnical Engineering II and CVEN 4728 Foundation Engineering

Recommended Proficiencies

CVEN 3718 Geotechnical Engineering II
CVEN 4555 Reinforced Concrete Design
CVEN 4333 Engineering Hydrology

Recommended CEAE Technical Electives

CVEN 4728 Foundation Engineering
CVEN 5708 Soil Mechanics
Any CVEN 5**8 introductory graduate level geotechnical engineering course

Recommended Technical/Free Electives

Other CEAE technical electives/proficiencies listed above, that have not already been taken

CVEN 4161 Mechanics of Materials II
CVEN 4511 Matrix Structural Analysis
CVEN 5131 Continuum Mechanics & Elasticity

Other Good Options – Technical/Free Electives

APPM 3050 Scientific Computing in Matlab
APPM 4350 Methods in Applied Mathematics: Fourier Series and Boundary Value Problems
CVEN 3424 Water & Wastewater Treatment
CVEN 5454 Statistical Methods for Natural/Engineered Systems
GEOL 5714 Field Geophysics

Students are strongly recommended to take **CVEN 3698 Engineering Geology** to fulfill the “other basic science” requirement, or to take CVEN 3698 as an elective.