

ENVIRONMENTAL ENGINEERING (ENVE)

ENVE 101 Introduction to Environmental Engineering

Description: Introduction to engineering design process through hands-on projects supported by instruction of underlying engineering science and fundamentals, model development, and the required tools. Be exposed to environmental engineering to know what it means to be an environmental engineer and an introduction to environmental engineering profession with focus on ethics.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

Offered: FALL

ENVE 210 Fundamentals of Environmental Engineering

Prerequisites: CHEM 109A or CHEM 113A with a C or better, and MATH 106 with a C or better

Description: Introduction to material and energy balances on environmental systems involving physical, chemical, and biological processes. Primary focus on single phase systems.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

Offered: FALL

Prerequisite for: ENVE 410

ENVE 322 Biological Principles of Environmental Engineering

Prerequisites: CIVE/BSEN 321

Notes: There will be two lab sessions, one focusing on microbes in water and one focusing on microbes in soil/sludge.

Description: Introduction to the basics of microbes in the environment, including basic microbiological concepts, microbial environment, detection/enumeration/identification of microbes, microbial interactions with environment, microbial remediation of pollutants, waterborne pathogens, and wastewater treatment and disinfection.

Credit Hours: 2

Max credits per semester: 2

Max credits per degree: 2

Grading Option: Graded

Prerequisite for: ENVE 401

ENVE 401 Environmental Engineering Design I

Prerequisites: CIVE 321, ENVE 322; CIVE 351 or BSEN 350

Notes: The first of two courses in the capstone sequence.

Description: Practical application of the engineering design process in a team project focused on an authentic and comprehensive environmental engineering design project.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded with Option

Offered: FALL/SPR

Prerequisite for: ENVE 402

ENVE 402 Environmental Engineering Design II

Prerequisites: ENVE 401

Notes: The second of two courses in the capstone sequence.

Description: Practical application of the engineering design process in a team project focused on an authentic and comprehensive environmental engineering design project.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded with Option

Offered: FALL/SPR

ACE: ACE 10 Integrated Product

Experiential Learning: Case/Project-Based Learning

ENVE 410 Environmental Fate and Transport

Prerequisites: CIVE 310 or CHME 332; ENVE 210 or CHME 202; and CIVE 321

Description: Covers fate and transport principles, such as interphase chemical equilibrium, the formulation and application of the advection-diffusion equation, and their specific environmental engineering applications.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

ENVE 430 Sustainable Design in Environmental Engineering

Prerequisites: CIVE 321; Co-requisite STAT 380

Description: Introduction to sustainability concepts and sustainable engineering design processes for environmental engineers such as life cycle assessment, multi-criteria decision analysis, and analysis of renewable energy systems.

Credit Hours: 3

Max credits per semester: 3

Max credits per degree: 3

Grading Option: Graded

Offered: FALL