Graduate Courses

Department of Civil Engineering

FALL 2020

Below is a list of courses being offered by the civil engineering department. These courses will be offered either as quasi online classes or Hybrid classes (50% of the students attend face-to-face in class and 50% attend remotely). All face-to-face sessions will be recorded and posted online.

CE 436/536 Hydraulics

Instructor: Mojtaba Sadegh, Ph.D.
Days/Times: Wed-Fri 12:00-1:15 PM

This course covers the basic physical principles that govern flow in open channels. Emphasis is on the physics of free-surface flow and includes: open channel flow design principles, uniform flow, gradually varied flow, steady and unsteady flows, and mechanics of sediment transport. Course will discuss conservation of mass, momentum and energy principles in a variety of natural and man-made channels to offer conceptual, analytical and mathematical skills to predict and describe the behavior of water flow. Computer aided analysis and engineering design with the U.S. Army Corps' HEC-RAS software (1D and 2D) is also exercised in this class.

CE 440/540 Pavement Analysis & Design

Instructor: Yang Lu, Ph.D., P.E.
Days/Times: Tue-Thu 3:00-4:15 PM

This is a combined senior undergraduate and graduate-level pavement design and analysis course. The course contents cover structural design principles of highway pavements; flexible and rigid pavement materials characterization, testing, and mix design; engineering analysis of stresses and strains in typical highway pavement structures due to loading from traffic and climate; and construction, maintenance and management aspects necessary for those who would like to work in the field of road infrastructure and pavement design. Furthermore, the course will introduce the Mechanistic-empirical (ME) analysis and design of highway pavements with the evaluation of current design practices, such as traffic consideration, pavement performance models, and actual thickness design of pavements using the AASHTO Pavement ME program. Several guest lectures on engineering practical topics, e.g. Superpave materials design, performance design specifications, and highway maintenance practices, will be offered by senior engineers from highway agencies and industry.

CE 452/552 Structural Steel Design

Instructor: Robert Hamilton, Ph.D., P.E.
Days/Times: Mon/Wed 1:30-2:45 PM & Fri 1.30-4.15 PM

This is a first course in the design of structural steel. This course will follow the methodology laid out by the American Institute of Steel Construction (AISC), using their current specifications. Students will learn to design components of a structure, such as beams and columns, while looking at multiple failure mechanisms. The course will primarily focus on strength design (LRFD), however, allowable stress design (ASD) will also be covered.

CE 460/560 Geotechnical Engineering Design

Instructor: Arvin Farid, Ph.D., P.E.
Days/Times: Mon-Wed 3:00-4:15 PM

This course is the first of a series of design courses focusing on geotechnical engineering. The course is more than an introductory course and focuses in depth on sequential tasks needed for geotechnical design of infrastructure from site investigation and soil exploration to design of shallow foundations, soil retaining structures, and deep foundations (with more focus on driven piles) under various conditions. Other geotechnical topics such as design of drilled shafts and earthquake impacts on design are also introduced and discussed. The course is currently required for graduate students within the Geotechnical & Geoenvironmental Engineering discipline and elective for other graduate and undergraduate students.

CE 497/597 Geoenvironmental Engineering

Instructor: Arvin Farid, Ph.D., P.E.
Days/Times: Tue 6:00-8:45 PM

This is an introductory course into the field geoenvironmental engineering ranging from introducing concepts and practices in geoenvironmental engineering, subsurface environmental problems, and (U.S.) geoenvironmental regulations to principles of soil-water-contaminant interactions, reactive transport, geochemistry, liners and barriers design for containment and landfill design, and remediation methodologies. The course is an elective course for both graduate and undergraduate students.

If you have any further questions please contact the Bhaskar Chittoori, Associate Chair, bhaskarchittoori@boisestate.edu