SCHOOL OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE

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General Information

MISSION
Through a community of scholars committed to excellence in research and teaching, the mission of CEES is to provide our students with the technical education and critical thinking skills needed to lead the country in addressing the complex infrastructure and environmental problems facing today's society.

Careers in Civil Engineering

Civil engineering is the oldest of the modern engineering disciplines with historical roots dating back to the 1700s. Responsibilities of the first civil engineers increased during the industrial revolution and included the construction of canals, roads and railroads.

Civil engineers are responsible for the design and construction of society's infrastructure, such as buildings, highways, bridges, mass transit systems, dams and locks, and municipal water and sewage treatment systems. They often are responsible for planning, managing, operating and maintaining these facilities. Consequently, civil engineering is frequently referred to as the "the people-serving profession."

Spurred by general population growth and an expanding economy, more civil engineers will be needed to design and construct higher-capacity transportation, water supply and pollution control systems as well as large buildings and building complexes. They also will be needed to repair or replace existing roads, bridges and other public structures.

Careers in Environmental Engineering

Using the principles of physics, biology and chemistry, environmental engineers develop methods to meet such environmental challenges as water and air pollution control, recycling, waste disposal, hydrology, river management and control, and public health issues. Environmental engineers conduct hazardous waste management studies in which they evaluate the significance of the hazard, offer analysis on treatment and containment and develop regulations to prevent mishaps. They also design municipal sewage and industrial wastewater systems, analyze scientific data, conduct research projects and perform quality control checks.

Past graduates have been employed by state and federal environmental agencies, including the Oklahoma Department of Environmental Quality, the U.S. Environmental Protection Agency and the U.S. Geological Survey as well as various private industries and consulting firms.

Careers in Environmental Science

Environmental scientists have a variety of job responsibilities, including collecting and analyzing air, water and soil samples, monitoring compliance with environmental laws and regulations, assisting industrial companies in complying with environmental regulations, and addressing public meetings on local environmental challenges.

Our environmental science graduates work for the U.S. Environmental Protection Agency, Oklahoma Department of Environmental Quality, Oklahoma Department of Health and numerous private industrial and consulting firms.

Programs & Facilities

CEES is currently housed in the Carson Engineering Center, the Engineering Laboratory Building and Sarkey's Energy Center on the main campus as well as in the Donald G. Fears Structural Engineering Laboratory and the National Weather Center on the south research campus.

STUDENT TEAM ROOM AND COMPUTING Laboratory
The student team room and computing laboratory is located in Carson Engineering Center and is available to all CEES students.

TEACHING AND Research Laboratories
CEES has laboratory facilities for teaching and research in environmental science and engineering, geotechnical engineering and structural engineering.

- The traditional wet laboratories in the Carson Engineering Center are associated with teaching and research efforts in environmental science and environmental engineering.
- The materials and soils laboratory is located in Carson Engineering Center and is used for teaching and research in soils and materials science.
- The Donald G. Fears Structural Engineering laboratory is devoted to teaching and research programs in geotechnical and structural engineering.
- The Ray Broce Materials laboratory is devoted to teaching and research in asphalt and other transportation materials.

Undergraduate

CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE PROGRAM EDUCATIONAL OBJECTIVES

Program educational objectives (PEOs) are broad statements that describe what graduates are expected to attain within a few years of graduation. The PEOs were developed to meet the needs of the constituencies of CEES. The primary constituents of CEES programs are our alumni and the industries and governmental agencies that employ our alumni. The PEOs are focused on providing well trained engineers for employers and to empower those engineers to advance during their careers. The PEOs for CEES engineering graduates are:
Program Educational Objective 1
CEES alumni will have embarked on successful careers in areas associated with the development, implementation and management of architectural, civil or environmental engineering systems.

Program Educational Objective 2
CEES alumni will advance in their careers and continue their professional development through continuing education and lifelong learning.

CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE UNDERGRADUATE STUDENT OUTCOMES
Student Outcomes describe what students are expected to know and be able to do by the time of graduation. The Student Outcomes for engineering students in CEES are:

- an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics
- an ability to apply engineering design to produce solutions that meet specified needs with consideration of public health, safety, and welfare, as well as global, cultural, social, environmental, and economic factors
- an ability to communicate effectively with a range of audiences
- an ability to recognize ethical and professional responsibilities in engineering situations and make informed judgments, which must consider the impact of engineering solutions in global, economic, environmental, and societal contexts
- an ability to function effectively on a team whose members together provide leadership, create a collaborative and inclusive environment, establish goals, plan tasks, and meet objectives
- an ability to develop and conduct appropriate experimentation, analyze and interpret data, and use engineering judgment to draw conclusions
- an ability to acquire and apply new knowledge as needed, using appropriate learning strategies

Bachelor of Science
(Engineering programs are accredited by the Engineering Accreditation Commission of ABET)

Students enrolled in the Bachelor of Science in Architectural Engineering program take the same core engineering, mathematics, science and English courses taken by other engineering students. They also take a series of architectural planning and methods courses from the College of Architecture.

The Bachelor of Science in Civil Engineering curriculum is comprised of four areas of emphasis: environmental, geotechnical, structural and transportation engineering. The undergraduate civil engineering student must complete a sequence of core engineering courses plus one or two courses in each of these areas. Students then choose three upper division Professional Electives in their preferred area of emphasis.

The core curriculum for the Bachelor of Science in Environmental Engineering is similar to civil engineering; however, the last two years of the program focus strictly on environmental courses. Students are required to take courses in air pollution control engineering; water and wastewater engineering, and solid and hazardous waste management.

Students pursuing the Bachelor of Science in Environmental Science complete fundamental courses in chemistry, math, physics, biology, microbiology, and environmental science. Students then choose three upper division track electives in one of four areas: chemistry, biology, math or physical sciences. Students also choose two upper division Professional Electives in the preferred area of emphasis within environmental science. This flexible program prepares students for careers in government, consulting and industry.

Minor
Students earning a bachelor’s of science degree in specific areas are eligible to apply for the Environmental Science Engineering Minor. Additional majors will be considered on a case-by-case basis.

The Water and Sanitation for Health and Sustainable Development Minor is designed for engineering and non-engineering majors who have an interest in development work in emerging regions, particularly the sectors of water, sanitation and health.

Accelerated Bachelor of Science/Master of Science
The combined BS/MS program is offered to qualified undergraduate students in the School of Civil Engineering and Environmental Science, University of Oklahoma, who wish to pursue their graduate education while completing their undergraduate degree requirements. The Bachelor of Science portion accredited by the Engineering Accreditation Commission of ABET.

- Bachelor of Science in Architectural Engineering/Civil Engineering, Master of Science
- Bachelor of Science in Civil Engineering/Master of Science
- Bachelor of Science in Environmental Engineering/Master of Science
- Bachelor of Science in Environmental Science/Master of Science

Graduate

Master of Science Civil Engineering
The Civil Engineering Master of Science program is open to students with undergraduate degrees in environmental or civil engineering or related engineering or science disciplines who have completed certain minimum undergraduate coursework

- Civil Engineering, Master of Science
- Civil Engineering, Master of Science Online

Master of Science in Environmental Engineering
The Master of Science in Environmental Engineering program is open to students with undergraduate degrees in environmental or civil engineering or related engineering or science disciplines who have completed certain minimum undergraduate coursework

- Environmental Engineering Master of Science

Master of Environmental Science
The Master of Environmental Science programs are open to students with undergraduate degrees in the physical, natural, or life sciences or related disciplines who have completed certain minimum undergraduate coursework

- Environmental Science
- Environmental Science: Hydrology and Water Security Online

Doctoral Programs
The School of Civil Engineering and Environmental Science offers Doctoral Programs in environmental science, environmental
engineering, and civil engineering. A master's degree in a related discipline is typically required for admission to all CEES Ph.D. degree programs, although students who have outstanding academic credentials and a documented record of research experience at the undergraduate level may occasionally be admitted to the doctoral program without a master's degree.

Courses

CEES 1000  CEES Seminar  0 Credit Hours
Seminar provides a common meeting time for students and faculty for department activities, such as invited speakers, project presentations, educational surveys, cross-course project coordination, and policy announcements. Students must enroll every semester that they are matriculated in CEES at OU after the freshman year, but in no case can a student graduate without successfully completing four semesters of seminar. (F; Sp)

CEES 1112  Introduction to Civil Engineering and Environmental Science  2 Credit Hours
Prerequisite: Freshman only. Introduction to fundamental concepts (mass/flow balance), problem solving and design, and simple computing software for architectural, civil or environmental engineers and environmental scientists. (F)

CEES 2113  Statics  3 Credit Hours
Prerequisite: PHYS 2514 and MATH 2433 or MATH 2934 or concurrent enrollment in MATH 2433 or MATH 2934. Vector representation of forces and moments; general three-dimensional theorems of statics; centroids and moments of area and inertia. Free-body diagrams, equilibrium of a particle and of rigid bodies, distributed loads, friction and internal shear and moment loads. Analysis of trusses, frames, and machines. (F)

CEES 2153  Mechanics of Materials  3 Credit Hours
Prerequisites: 2113 or AME 2113 or PE 2113. Basic principles of mechanics, including the definition of stress and strain, transformations and principal values for the stress and strain tensors, kinematic relations, review of conservation equations and the development and application of constitutive laws for idealized materials. Elementary elastostatics utilizing Hooke's law; constitutive relations for a linear-elastic continuum, including elastic parameters such as Young's modulus, shear and bulk moduli and Poisson's ratio. Solution of elementary one- and two-dimensional mechanics problems, including thermal stresses and strains, beam flexure, shear and deflections, pressure vessels and buckling of columns. (Sp)

CEES 2213  CADD Fundamentals  3 Credit Hours
Prerequisite: CEES Majors only and Sophomore standing. Introduction to computer aided design and drafting with a focus on the AutoCAD and MicroStation platforms. This course is primarily about learning to use the software and learning how to convey an engineering design graphically. (F)

CEES 2223  Fluid Mechanics  3 Credit Hours
Prerequisites: 2113 or AME 2113 or PE 2113, and Math 3113 or concurrent enrollment. Coverage of the fundamentals of fluid statics and dynamics. Formulation of the equation of fluid flow, i.e., Navier-Stokes equation, Euler's equations, Bernoulli's equation, etc. and their application. Examples of ideal fluid flow, such as flow in open and closed conduits. (Sp)

CEES 2232  Environmental Transport and Fate Process  3 Credit Hours
Prerequisite: 2313. Physicochemical and biological processes controlling contaminant distribution and fate; hydrological processes controlling contaminant transport; sources, prevention and remediation of environmental pollutants. (Sp)

CEES 2970  Special Topics/ Seminar  1-3 Credit Hours
Special Topics. 1 to 3 hours. May be repeated; Maximum credit nine hours. Special topics course for content not currently offered in regularly scheduled courses. May include library and/or laboratory research, and field projects. (Irreg.)

CEES 3213  Water Resources Engineering  3 Credit Hours
Prerequisite: 2223 or permission of instructor. Municipal water demands, surface water hydrology, ground water hydrology, water distribution systems, pump design, wastewater collection systems, storm water management, water law. (F)

CEES 3243  Water and Wastewater Treatment Design  3 Credit Hours
Prerequisite: CEES 2223. Design of municipal water and wastewater treatment plants. Emphasis is placed on the characterization of water and wastewater and physical, chemical and biological treatment methods. Sludge processing advanced treatment methods and treatment plant hydraulics are also considered. (Sp)

CEES 3251  WaTER Center Integrated Seminar  1 Credit Hour
Prerequisite: permission of instructor. This course is a weekly hour-long seminar in which students will hear from guest speakers discussing WASH projects in emerging regions, present their intercultural experience in the form of a case study, and listen to other case study presentations. Students may also read and discuss assigned readings (e.g., published peer-reviewed papers of other researchers doing similar work). (F;SP)

CEES 3263  Introduction to Dynamics for Architectural and Civil Engineers  3 Credit Hours
Prerequisite: CEES 2153 and MATH 3113. Kinematics and kinetics of rigid bodies; free and forced vibrations of undamped and damped single degree-of-freedom systems; concept of mass, stiffness, and damping for typical structures; introduction to vibrations of two and more degrees-of-freedom systems; and determination of loads on structures from dynamic events such as earthquakes. (F)

CEES 3361  Soil Mechanics Laboratory  1 Credit Hour
Prerequisite: CEES 2153 or PE 2153; CEES 3363 or concurrent enrollment (you must be enrolled in both lecture and lab section together the first time you attempt either). This is one of two complimentary courses taken in the area of Geotechnical Engineering and serves as an introduction to soil mechanics. During this course, the student will conduct simple laboratory tests to identify and classify soils, characterize the compacted properties of soil, and quantify soil permeability, compressibility and strength. (F)

CEES 3363  Soil Mechanics  3 Credit Hours
Prerequisite: CEES 2153 or PE 2153; CEES 3361 or concurrent enrollment (you must be enrolled in both lecture and a lab section together the first time you attempt either). General treatment of the physical and mechanical properties of soils. Topics include soil composition, classification, phase relationships, compaction, effective stress, consolidation, shear strength and permeability and seepage. (F)
CEES 3403 Materials 3 Credit Hours
Prerequisite: CEES 2153 or PE 2153 or concurrent enrollment. Study of the properties of materials utilized by architectural and civil engineers; analyses of aggregates, concrete, masonry, steel, asphalt, plastics and wood. Laboratory. (Sp)

CEES 3413 Structural Analysis I 3 Credit Hours
Prerequisite: CEES 2153 or PE 2153. Loads, reactions and force systems; introduction to design codes; analysis of frames and trusses; calculation of structural deformations; and analysis of indeterminate structures. Emphasis on classical solutions and time-tested approaches to structural engineering. Introduction to structural analysis computer programs to solve complex problems. (F)

CEES 3422 Intercultural Immersion Experience in an Emerging Region 2 Credit Hours
Prerequisite: permission of instructor. This course is an immersion experience for a three to six week period, which could encompass part or all of a summer period. The experience must have a WaTER component - i.e., must include a technological, cultural, and/or business lens on water, sanitation and/or hygiene in a particular context. Students will initiate and design their own experience, either alone or with other students in the program. Prior to starting the experience/internship, students will write a proposal of planned activities and secure the approval from a CEES faculty member to serve as an advisor. After completion of the internship, the students will then submit a written report and make an oral presentation for a three-member review committee that includes the faculty advisor. The immersion experience is intended to be international (outside of the U.S.), but a student may make the case for and receive permission for a domestic setting that is impoverished and underdeveloped, such as an inner city, a tribal reservation, etc., as long as there is a WaTER component to the experience.

CEES 3440 Mentored Research Experience 3 Credit Hours
0 to 3 hours. Prerequisites: ENGL 1113 or equivalent, and permission of instructor. May be repeated; maximum credit 12 hours. For the inquisitive student to apply the scholarly processes of the discipline to a research or creative project under the mentorship of a faculty member. Student and instructor should complete an Undergraduate Research & Creative Projects (URCP) Mentoring Agreement and file it with the URCP office. Not for honors credit. (F, Sp, Su)

CEES 3453 Introduction to Construction Management 3 Credit Hours
Prerequisite: CEES 2213 and junior level standing in CEES. Introduction to methods for managing construction projects including scheduling, cost estimating, contracts, pay request, change orders, and requests for information. Students will also learn how to read construction documents and understand project specifications. (Sp)

CEES 3663 Structural Design - Steel I 3 Credit Hours
Prerequisite: CEES 3413 and CEES 3403 or concurrent enrollment in CEES 3403. Design of steel structural members including tension elements, columns, beams, and beam-columns; bolted and welded connection design; composite beam design; introduction to plastic design. Laboratory. (Sp)

CEES 3673 Structural Design - Concrete I 3 Credit Hours
Prerequisite: CEES 3403, CEES 3413. Analysis and design of reinforced concrete beams, columns, slabs, footings, etc., along with discussion of current building practice. Laboratory (F or Sp)

CEES 3883 Transportation Engineering 3 Credit Hours
Prerequisite: CEES 2153 or P E 2153 and CEES 3403. Introduction to transportation planning, design, construction, operations and maintenance emphasizing the highway/street mode. Includes demand modeling, route location and design, pavements including hot mix asphalt volumetrics and stability, drainage, and traffic control devices. (Sp)

CEES 3960 Honors Reading 1-3 Credit Hours
1 to 3 hours. Prerequisite: admission to Honors Program. May be repeated; maximum credit six hours. Consists of topics designated by the instructor in keeping with the student's major program. The topics will cover materials not usually presented in the regular courses. (F, Sp, Su)

CEES 3970 Honors Seminar 1-3 Credit Hours
1 to 3 hours. Prerequisite: admission to Honors Program. May be repeated; maximum credit six hours. The projects covered will vary. Deals with concepts not usually presented in regular coursework. (Irreg.)

CEES 3980 Honors Research 1-3 Credit Hours
1 to 3 hours. Prerequisite: admission to Honors Program. May be repeated; maximum credit six hours. Provides an opportunity for the gifted Honors candidate to work on a special project in the field. (Sp)

CEES 3990 Independent Study 1-3 Credit Hours
1 to 3 hours. Prerequisite: permission of instructor and junior standing. May be repeated once with change of content. Independent study may be arranged to study a subject not available through regular course offerings. (F, Sp, Su)

CEES 4113 Building Lighting and Electrical Systems 3 Credit Hours
Prerequisite: MATH 2423 or MATH 2924; PHYS 2524; and ENGR 2431 or concurrent enrollment, CEES majors only. Fundamentals of building lighting and electrical systems. Lighting topics include the determination of appropriate lighting quantity and quality, luminaires and lighting design procedures for residential, commercial and industrial buildings. Electrical topics will include service voltages, overcurrent protection, short circuit analysis and branch circuit design for residential, commercial and industrial buildings. (F or Sp)

CEES 4114 Aquatic Chemistry 4 Credit Hours
(Slashlisted with 5114) Prerequisite: senior standing and one year of general chemistry. Environmental kinetics and thermodynamics in aquatic systems; acid/base, precipitation/solubility, metal complexation and oxidation/reduction reactions; environmental colloidal and solid-liquid interface chemistry. No student may earn credit for both 4114 and 5114 or Environmental Science 4114 and 5114. Laboratory. (F)

CEES G4123 Open Channel Flow 3 Credit Hours
Prerequisite: 2223. Theory, analysis and design of channels, aqueducts, headworks, siphons, spillways and hydraulic structures. An in-depth study of critical flow and measurement techniques. Backwater analysis by analytical, calculator and computer methods. Special emphasis on practical problems of general interest. (Sp)

CEES G4243 Water Technologies for Emerging Regions 3 Credit Hours
Prerequisite: 2223 or 2323 or equivalent or instructor permission. Prerequisite: 2223 or 2323 or equivalent or instructor permission. Prerequisite: 2223 or 2323 or equivalent or instructor permission. Prerequisite: 2223 or 2323 or equivalent or instructor permission. Students will gain an understanding of water and sanitation issues in remote villages of developing countries. Explore and design sustainable technologies appropriate to these settings including cultural, political and economic factors. (Sp)
CEES G4253  Statistics and Probability  3 Credit Hours
Prerequisite: MATH 2423 or 2924 and PHYS 2524 or 2424. Designed to help students understand the fundamentals of probability, statistics, reliability, and risk methods in support of decision making for future engineers and scientists. Fundamental concepts in probability and statistics will be reviewed and used. Engineering decisions are often based on data that contain uncertainty; future scientists and engineers should understand how uncertainty affects calculated quantities, accuracy, precision, and reliability. (Sp)

CEES G4263  Hazardous and Solid Waste Management  3 Credit Hours
Prerequisite: junior or above status in CEES or permission of instructor. Sources and types of solid wastes; identification and classification of hazardous wastes; waste handling, transportation, treatment and disposal techniques, federal and state legislation; and environmental and health effects. (F)

CEES G4273  WaTER Technical Field Methods  3 Credit Hours
Prerequisite: permission of instructor. A hands-on practicum for construction and implementation of water and sanitation projects in developing countries. Course modules reflect the typical projects and skills needed by development workers in organizations such as Peace Corps, USAID, Engineers Without Borders, and faith-based organizations. Emphasis will be on sustainable technologies using methods and materials appropriate to emerging regions. Non-engineering students are encouraged to participate. (Su)

CEES 4281  Engineering Co-Op Program  1 Credit Hour
(Crosslisted with AME, CH E, C S, ECE, EPHY, ISE and BME 4281) Prerequisite: Departmental permission and junior standing. May be repeated; maximum credit 6 hours. The Co-Op program provides students an opportunity to enhance their education via career exploration in related professional work experiences. Course assignments help students articulate their experiences by completing journals; mid-term paper; final paper and/or final presentation. Faculty receive an evaluation from the student’s Co-Op supervisor who monitors performance. Faculty collaborate with the Co-Op supervisor to ensure student success. (F, Sp, Su)

CEES 4324  Environmental Biology and Ecology  4 Credit Hours
(Slashlisted with CEES 5324) Prerequisite: CEES 2323. Examines applied environmental biology; biological consequences of environmental impacts; mitigation of environmental impacts via biogeochemical, ecological and microbial processes. No student may earn credit for both 4324 and 5324. Laboratory (F)

CEES G4333  Foundation Engineering  3 Credit Hours
Prerequisite: CEES 3363. Substructure analysis and design to meet various soil conditions; footings and rafts, shoring and underpinning, piles, cofferdams, caissons, breakwaters, piers, wharves, vibratory effects on foundations. (Sp)

CEES 4373  Water Resources Management  3 Credit Hours
(Slashlisted with 5373) Prerequisite: CEES 3213 or approved equivalent or concurrent enrollment or instructor permission. Theory and concept of water resources management. An in-depth study of theory of optimization, hydrologic modeling, reservoir and dams operation. Data analysis and computational methods for hydrology and water resources management. Special emphasis on system modeling and parameter tuning using automatic calibration approaches. Basic level of scientific programming. No student may earn credit for both 4373 and 5373. (F, Sp)

CEES 4423  CEES Professional Internship or Co-op  3 Credit Hours
Prerequisite: completion of at least 19 hours of Civil Engineering and Environmental Science (CEES) coursework (for Civil Engineering and Environmental Engineering majors); or completion of at least 19 hours of CEES and science coursework (for Environmental Science majors); or completion of at least 19 hours CEES and Architecture (ARCH) coursework (for Architectural Engineering majors). Provides three hours of professional elective credit for 400 hours of internship. Prior to starting the internship, students should write a proposal of planned activities and secure the approval from a CEES faculty member to serve as an of the advisor. After completion of the internship or co-op, the students should enroll in this course. The student must then submit a written report, and make an oral presentation for a three-member review committee that includes the faculty advisor. (F, Sp, Su)

CEES G4453  Geomatics Engineering  3 Credit Hours
Prerequisites: CEES 2213, CEES 3403 and MATH 2433 or MATH 2934 or instructor permission. Geomatics engineering deals with the science of determining relative positions of features for mapping, engineering and construction plans. Topics include digital leveling, orientation, distance measurement, traversing and control surveys, accuracy, error sources, precise horizontal and zenith angle measurements, and introduction of global navigation satellite system. Laboratory (F)

CEES G4603  Global Environmental Health  3 Credit Hours
Prerequisite: CEES 2323 or permission of instructor. Mitigation of human health and environmental problems with a focus on differences between developing and developed countries. Topics include epidemiology, fate and transport, research study design, toxicology and risk assessment, water and wastewater, air quality, and occupational health. (F)

CEES G4663  Introduction to Matrix Methods in Structural Analysis  3 Credit Hours
Prerequisite: CEES 3413. Review of matrix algebra and solution of linear equations; energy concepts and principle of virtual work; fundamentals of flexibility and stiffness methods; coordinate transformation and matrix assemblage; computer-oriented direct stiffness method and computer code developments; secondary effects; support settlement and temperature change; method of finite differences and application to beam and plate problems. (F or Sp)

CEES G4753  Structural Design - Wood  3 Credit Hours
Prerequisite: CEES 3413 or equivalent. Material properties and behavior of wood. Analysis and design of solid and laminated structural members, connections, systems, trusses and arches. Current developments in structural wood design and research. (F)

CEES 4803  Civil Engineering Professional Practice  3 Credit Hours
Prerequisites: senior standing in Architectural or Civil Engineering. Architectural engineers must also have Engineering 2431 or concurrent enrollment. Introduces students to both technical and non-traditional aspects of professional practice. Technical emphases include discipline-specific instruction on the design process. Architectural engineers are trained in design of building plumbing and electrical systems. Civil engineers are trained on structural and foundation design. Both disciplines receive training on non-technical aspects of professional practice including organization, project management, ethics and communications. (F)
Prerequisites: Senior standing in Civil Engineering. Introduction to the capstone design project, which is a two-semester-long, open-ended engineering design problem that requires applying the skills and techniques acquired in earlier engineering course work. This course will focus on introducing the project requirements; forming multi-disciplinary teams of students; developing team identities; assigning team roles; evaluating project constraints; and developing a project design schedule. (F)

CEES 4903 Civil Engineering Capstone 3 Credit Hours
Prerequisite: CEES 3213, CEES 3363, CEES 3361, CEES 3663 or CEES 3673 and CEES 4901. Solution of major design problems by a team approach of disciplines. Problems to be varied within the areas of civil engineering (structural; geotechnical; and transportation) according to the student's major interest. The capstone project will be under direct faculty supervision. (Sp) [V].

CEES 4911 Introduction to ES Capstone 1 Credit Hour
Prerequisite: Senior standing in Environmental Science. Introduction to the capstone design project, which is a two-semester-long, open-ended engineering design problem that requires applying the skills and techniques acquired in earlier engineering course work. This course will focus on introducing the project requirements; forming multi-disciplinary teams of students; developing team identities; assigning team roles; evaluating project constraints; and developing a project design schedule. (F)

CEES 4913 Environmental Science Capstone 3 Credit Hours
Prerequisite: CEES 4114, CEES 4324, CEES 4911; and CEES 4253 corequisite. The capstone experience draws upon undergraduate course work in environmental science, biology, chemistry, physics, mathematics, and related sciences. Student teams address a client-driven, open-ended, real-world problem. Faculty coordinators serve in advisory capacities only. Organization and management of operating divisions and related responsibilities. Organization and management of operating divisions and coordinating class meetings and presentations. Any other in-class presentations cover non-traditional (non-technical) topics. (Sp) [V].

CEES 4921 Introduction to EE Capstone 1 Credit Hour
Prerequisites: Senior standing in Environmental Engineering. Introduction to the capstone design project, which is a two-semester-long, open-ended engineering design problem that requires applying the skills and techniques acquired in earlier engineering course work. This course will focus on introducing the project requirements; forming multi-disciplinary teams of students; developing team identities; assigning team roles; evaluating project constraints; and developing a project design schedule. (F)

CEES 4923 Environmental Engineering Capstone 3 Credit Hours
Prerequisite: CEES 3213, CEES 4114, CEES 4324, CEES 4921; CEES 4253 or concurrent enrollment. The capstone experience is a course where students draw upon their undergraduate course work for analysis of an open-ended, real world problem. Faculty coordinators serve in advisory capacities only. All in-class presentations will cover non-traditional (non-technical) topics. Students are presumed to have been trained in basic natural and environmental sciences and introduced to environmental sampling/analysis and impact/risk assessment methods. (Sp) [V].

CEES 4943 Air Quality Management 3 Credit Hours
Prerequisite: MATH 2423 or MATH 2924; and CHEM 1315. Important aspects of air quality will be covered, including air quality legislation, major sources and effects of air pollutants, monitoring, atmospheric dispersion, and air quality modeling. (Sp)

CEES 4951 Contemporary Topics in Professional Practice 1 Credit Hour
Prerequisite: junior standing in Civil Engineering. Civil engineering is a dynamic profession, as methods of practice evolve to address the many pressing problems in today's built and natural environment. This course provides an introduction to contemporary topics in professional practice, such as basic concepts of sustainability in engineering design, modern tools for project management, and the role of business/policy considerations in practice. (F)

CEES 4960 Directed Readings 1-4 Credit Hours
1 to 4 hours. Prerequisite: good standing in University; permission of instructor and dean. May be repeated; maximum credit four hours. Designed for upper-division students who need opportunity to study a specific problem in greater depth than formal course content permits. (Irreg.)

CEES 4970 Special Topics/Seminar 1-3 Credit Hours
1 to 3 hours. Prerequisite: Senior standing or permission of instructor. May be repeated; maximum credit nine hours. Special topics or seminar course for content not currently offered in regularly scheduled courses. May include library and/or laboratory research and field projects. (Irreg.)

CEES 4982 Environmental Science Senior Research 1-12 Credit Hours
Prerequisite: senior standing. Maximum credit twelve hours. Intensive research investigation of a special project under the direction of a faculty member. (F, Sp, Su) 1-4 Credit Hours
1 to 4 hours. Prerequisite: good standing in University; permission of instructor and dean. May be repeated; maximum credit four hours. Designed for upper-division students who need opportunity to study a specific problem in greater depth than formal course content permits. (Irreg.)

CEES 4990 Independent Study 1-3 Credit Hours
1 to 3 hours. Prerequisite: Senior standing and permission of instructor. May be repeated; maximum credit nine hours. Contracted independent study for a topic not currently offered in regularly scheduled courses. Independent study may include library and/or laboratory research and field projects. (Irreg.)

CEES 4991 Introduction to AE Capstone 1 Credit Hour
Prerequisite: senior standing in Architectural Engineering. Introduction to the capstone design project, which is a two-semester-long, open-ended engineering design problem that requires applying the skills and techniques acquired in earlier engineering course work. This course will focus on introducing the project requirements; forming multi-disciplinary teams of students; developing team identities; assigning team roles; evaluating project constraints; and developing a project design schedule. (F)
CEES 4993  Architecture Engineering Capstone  3 Credit Hours
Prerequisite: CEES 3663, CEES 3673, CEES 4991 and AME 4653; CEES 4113 and CEES 4333 or concurrent enrollment. A capstone course emphasizing design of structural components and environmental systems of buildings. Requires students to have knowledge and skills from prerequisite courses to address a real-world, open-ended design problem. (Sp) [V].

CEES 5010  Civil Engineering Problems  1-4 Credit Hours
Prerequisite: senior or graduate standing and permission of instructor. May be repeated; maximum credit four hours for a master’s program or six hours for a doctoral program, including hours taken as part of another graduate program. Independent or small group study under the supervision of one or more faculty members. (F, Sp, Su)

CEES 5020  Special Topics in Civil Engineering  1-6 Credit Hours
1 to 6 hours. Prerequisite: senior or graduate standing and permission of instructor. May be repeated with change of topic; maximum credit twelve hours. Examines subject matter in civil engineering not covered by existing course offerings as a regular course. (F, Sp, Su)

CEES 5021  Technical Communications  1 Credit Hour
Prerequisite: CEES graduate standing or permission of instructor. Focused on enabling students to improve oral and written communications skills. Examines appropriate formats for various technical publications, as well as methods and practices for developing effective oral presentations. Each student will be required to develop an oral presentation about his/her written product. (Sp)

CEES 5114  Aquatic Chemistry  4 Credit Hours
(Slashlisted with 4114) Prerequisite: graduate standing, one year general chemistry. Environmental kinetics and thermodynamics in aquatic systems; acid/base, precipitation/solubility, metal complexation and oxidation/reduction reactions; environmental colloidal and solid-liquid interface chemistry. No student may earn credit for both 4114 and 5114 or Environmental Science 4114 and 5114. Laboratory. (F)

CEES 5244  Physicochemical Water Treatment Processes 4 Credit Hours
Prerequisite: graduate standing or permission of instructor. Physical and chemical processes for drinking water, ground water and industrial water treatment. Processes discussed include coagulation/flocculation, gravity separation, filtration, disinfection, adsorption, advanced oxidation, and phase transfer (e.g., air stripping). (Sp even years)

CEES 5283  Environmental Organic Chemistry  3 Credit Hours
Prerequisite: 4114 or permission of instructor. Solubility, partitioning, and sorption of organic compounds in aqueous systems; linear free energy relationships; natural organic matter chemistry and characterization; environmentally pertinent hydrolysis, oxidation, and reduction reactions; disinfection reactions; and aqueous photochemistry. (Sp)

CEES 5303  Asphalt Materials and Mix Design  3 Credit Hours
Prerequisite: CEES 3403 and CEES 3883. Asphalt cement, cutbacks, emulsions, testing procedures and grading; aggregate properties, blending; asphalt concrete mix design (Marshall, Hveen and Superpave); HMA construction; HMA pavement performances; special asphalt mixes; recent developments. Laboratory (Sp)

CEES 5313  Engineering Geology  3 Credit Hours
Prerequisites: CEES 3363, CEES 3361 and permission of instructor. Understanding geology in engineering design and mitigation: topics include weathering and soil-forming processes; engineering properties of rock; landslides and debris flow (slope stability); fluval processes and hazards; land subsidence; expansive soil; hazard, risk and land-use planning. (F)

CEES 5323  Geosynthetics  3 Credit Hours
Prerequisites: CEES 3363 and CEES 3361. To introduce students to concepts and design methods involving the use of geosynthetics in geotechnical and transportation engineering applications. (F)

CEES 5324  Environmental Biology and Ecology  4 Credit Hours
(Slashlisted with CEES 4324) Prerequisite: graduate standing in Environmental Science. Examines applied environmental biology; biological consequences of environmental impacts; mitigation of environmental impacts via biogeochemical, ecological and microbial processes. No student may earn credit for both 4324 and 5324. Laboratory (F)

CEES 5343  Advanced Soil Mechanics  3 Credit Hours
Prerequisites: CEES 3363, CEES 3361 and permission of instructor. Advanced treatment of theories and principles of shearing strength, stress distribution and settlement analysis. (F)

CEES 5353  Introduction to Soil Dynamics  3 Credit Hours
Prerequisite: 3364 or permission of instructor. Review of basic concepts (single- and multi-degree of freedom system, wave propagation, behavior of dynamically loaded soils), liquefaction, vibrations of footings on elastic half space, analog models, dynamics of pile foundations, machine foundations, design of foundations for dynamic loads including earthquake loading. (Irreg.)

CEES 5363  Ecological Engineering Science  3 Credit Hours
Prerequisite: senior or graduate standing. Defined as the design of sustainable ecosystems that integrate human society with its natural environment for the benefit of both. It is distinct from both environmental engineer and ecology and uses a systems perspective based on the premise that sustainable solutions require working with natural ecological and biogeochemical process and not against them. Ecologically engineered systems are designed to require less fossil fuel input, produce less pollution and represent cost-effective alternatives to traditional energy-and resource-intensive technologies. (Sp)

CEES 5373  Water Resources Management  3 Credit Hours
(Slashlisted with 4373) Prerequisite: Graduate standing and permission of instructor. Theory and concept of water resources management. An in-depth study of theory of optimization, hydrologic modeling, reservoirs and dams operation. Data analysis and computational methods for hydrology and water resources management. Special emphasis on system modeling and parameter tuning using automatic calibration approaches. Basic level of scientific programming. No student may earn credit for both 4373 and 5373. (F, Sp)

CEES 5383  Earthquake Engineering  3 Credit Hours
Prerequisite: senior or graduate standing. To provide students with an understanding of the effects of earthquakes on civil engineering structures and analytical tools for their seismic analysis. (F)

CEES 5393  Reinforced Soil Structures  3 Credit Hours
Prerequisites: CEES 3363 and CEES 3361. Introduce students to the analysis and design methods related to geotechnical structures reinforced with geosynthetics. The main focus of this course will be on reinforced soil walls, slopes and embankments. (Sp)

CEES 5404  Soil Stabilization  4 Credit Hours
Prerequisites: CEES 3403, 3363 and 3361. Principles and methods of soil stabilization; soil-aggregate, soil-chemical stabilization; grouting; design and laboratory testing of stabilized soils. Laboratory (Irreg.)
CEES 5413 Soil-Structure Interaction 3 Credit Hours
Prerequisite: 3364 or permission of instructor. Introduction-definition, methods of solution; beams on deformable foundations; analysis and design of axially loaded structures — single pile, pile groups, retaining walls; plates on deformable foundations; role of interfaces and joints; wave equation for pile behavior. (Irreg.)

CEES 5423 Environmental Geotechnology 3 Credit Hours
Prerequisite: 3243 and 3364, or permission of instructor. Covers geotechnical issues in environmental problems and solutions. Site characterization; laboratory and in-situ testing for environmental applications; soil mineralogy and fabric; design and construction of contaminant barriers and landfill liners. (Sp)

CEES 5433 In-Situ Soil Testing 3 Credit Hours
Prerequisites: CEES 3363, CEES 3361 and permission of instructor. This is a "hands-on" course that focuses on conducting and interpreting laboratory and in-situ tests for geotechnical engineering. Topics can include but are not limited to drilling, sampling, soil characterization, triaxial shear testing, one-dimensional compression, flexible wall permeability testing, pressuremeter, cone penetrometer, borehole shear, and pile load testing. Laboratory (Sp)

CEES 5443 Unsaturated Soil Mechanics 3 Credit Hours
Prerequisites: CEES 3363 and CEES 3361. Provide students with an understanding of the theoretical and practical fundamentals of unsaturated soil mechanics with applications in geotechnical engineering. (F)

CEES 5453 Public Mass Transportation Systems 3 Credit Hours
(Crosslisted with RCPL 5453) Prerequisite: 3884 or permission of instructor. Service characteristics of the principal modes of public mass transportation with emphasis on urban transit (fixed-route bus, light rail, subways, commuter rail, paratransit, taxi); legislation and regulations; institutional structures; financing; need and demand studies; planning strategies; management; operations and record keeping; case studies of leading systems. (Irreg.)

CEES 5473 Forensic Geotechnical Engineering 3 Credit Hours
Prerequisites: CEES 3363 and CEES 3361. Examines methods for investigating and analyzing geotechnical failures. Examples include slope failures, pavement subgrade failures, foundation failures, excessive seepage from earth dams, and excavation failures. The course also addresses the role of the engineer as a consultant and/or expert witness in legal cases involving geotechnical failures. (F or Sp)

CEES 5483 Urban and Regional Transportation Planning 3 Credit Hours
(Crosslisted with RCPL 5483) Prerequisite: graduate standing or permission. Characteristics of urban and regional passenger and freight demand; travel demand forecasting methodologies; long- and short-range planning strategies; role of governments; characteristics of major modes of transport; decision-making strategies; case studies. (Sp)

CEES 5493 Transportation and Land Development 3 Credit Hours
(Crosslisted with RCPL 5493) Prerequisite: graduate standing or permission. Study of interactions between land development activity and the transportation network. Application of planning and design techniques to manage the impacts of development upon the transportation system.

CEES 5524 Biological Waste Treatment 4 Credit Hours
Treatment of waste using biological processes; emphasis on treatment kinetics, municipal wastewater treatment processes, and design of municipal wastewater unit processes; application of biological treatment concepts to other wastes including industrial wastes, groundwater, and solid or hazardous wastes. Laboratory (F)

CEES 5624 Biological Waste Treatment 4 Credit Hours
CEES 5653 Advanced Mechanics of Materials 3 Credit Hours
Prerequisite: CEES 2153 or PE 2153 and senior or graduate standing. Principal stresses and strains; theories of failure; introduction to elasticity; unsymmetrical bending and shear; torsion of noncircular solid cross sections, cellular sections and open sections; introduction to plate bending and buckling. (F)

CEES 5673 Colloid and Surface Science 3 Credit Hours
(Crosslisted with CH E) Prerequisite: graduate standing or permission of instructor. Capillarity, surface thermodynamics, adsorption from vapor and liquid phases, contact angles, micelle formation, solubilization, emulsions and foams. Applications to be discussed include detergency, enhanced oil recovery and adsorption for pollution control. (Irreg.)

CEES 5683 Dynamics of Structures 3 Credit Hours
Prerequisite: CEES 3263, CEES 3414. Free vibration, forced vibration and transient response of structures having one, multiple or infinite number of degrees-of-freedom; structural damping effects; numerical solution techniques; Lagrange's equation of motion, Rayleigh-Ritz method. General matrix formulation for multiple degrees-of-freedom, modal coordinate transformation. Introduction to earthquake engineering concepts. (F)

CEES 5693 Structural Design of Pavements 3 Credit Hours
Prerequisites: CEES 3363, 3361 and 3883. Effect of load and climate on the design of rigid and flexible pavements and interaction of pavement components. (Irreg.)

CEES 5763 Introduction to Finite Element Method 3 Credit Hours
(Crosslisted with AME 5763) Prerequisite: graduate standing. Weighted residual and variational approaches. Finite element formulation for rod, truss and beam elements; plane stress and plane strain problem; axisymmetric and three-dimensional analysis; isoparametric elements; conforming and nonconforming plate and shell elements. (Sp)

CEES 5773 Structural Design—Steel II 3 Credit Hours
Prerequisite: CEES 3663. Advanced structural steel design including steel deck diaphragms, column and beam bracing, composite beam design, rigid frame design, torsional member design, plate girder design, and design of building connections. (F or Sp)

CEES 5783 Structural Design—Concrete II 3 Credit Hours
Prerequisite: CEES 3673. Advanced reinforced concrete behavior and design including limit design, anchorage slender columns, truss models for shear and torsion on beams, two-way and flat slabs, and the art of detailing. (F or Sp)

CEES 5793 Design of Prestressed Concrete Structures 3 Credit Hours
Prerequisite: CEES 3673. Design procedures for pretensioned and post-tensioned concrete structures, with emphasis on the behavior of prestressed concrete. Topics include methods of analysis, time dependent effects, fabrication and construction procedures, connections, highway bridges, frames, composite construction, continuous structures, and anchorage zone detailing. (Irreg.)

CEES 5833 Ground Water Quality Protection 3 Credit Hours
Prerequisite: graduate standing or permission. Introduction to ground water quality protection. Covers sources of ground water, ground water hydrology, ground water information sources, ground water pollution sources, subsurface transport and fate processes and monitoring of ground water systems. (F)
CEES 5843 Hydrology 3 Credit Hours
Prerequisite: MATH 3113, graduate standing, or permission of instructor. An applied course on hydrology dealing with environmental water problems; principles of hydrologic systems, their structure and components; methods of analysis and their application to various purposes of water resources planning and development. (Sp)

CEES 5853 Groundwater and Seepage 3 Credit Hours
(Crosslisted with GEOL 5853) Prerequisite: graduate standing in civil engineering, environmental science or geology or permission. An applied course dealing with properties of aquifers, modeling of groundwater flow, groundwater hydrology and its interrelation with surface water; well hydraulics, pumping tests and safe yield of aquifers. (F)

CEES 5873 Water Quality Management 3 Credit Hours
Prerequisite: MATH 3113, and graduate standing, or instructor permission. Water quality in lakes, rivers, estuaries; chemical, physical and biological aspects of marine and fresh waters; waste assimilation; system modeling; water quality management; waste load allocation, and engineer controls. (Sp)

CEES 5883 Environmental Modeling 3 Credit Hours
Prerequisite: MATH 3113, graduate standing or instructor permission. Introduction to theoretical and practical issues of computer-based environmental modeling. Covers problem formulation, implementation, and application. Topical areas include conceptualizing problems, conservation laws, partial differential equations, numerical methods, and applications ranging from coastal hydrodynamics to contaminant transport. Emphasis on understanding the model process rather than using "canned" models. (F)

CEES 5903 Remote Sensing Hydrology 3 Credit Hours
Prerequisite: senior standing, or graduate standing, or permission of instructor. Overview of various orbital satellite platforms/sensors and introduces advances in remote sensing hydrology from space-borne observations, state-of-the-art retrieval algorithms for hydrological variables, and ground validation strategies. Required for Hydrology minors. (Sp)

CEES 5933 Climate Change, Water, and Natural Hazards 3 Credit Hours
Prerequisite: senior standing, or graduate standing, or permission of instructor. A workshop style course for undergraduate and graduate students who wish to have a correct understanding of the Earth’s climate history, climate variability, and climate extremes. With an overview of the climate change’s causes, effects, and solutions, this course further examines how abrupt climate changes impact on natural hazards occurrences and water sustainability. (F)

CEES 5953 Computational Hydrology and Water Resource Systems 3 Credit Hours
(Crosslisted with GIS 5953) Prerequisite: graduate standing or permission of instructor. Covers fundamental theory and modeling of hydrologic and water systems. Emphasis is placed on the application of quantitative methods for planning, design, and decision-making in regional water resources. Users will learn elements of time series analysis and watershed distributed modeling, using license-free software (e.g., R, QGIS) to resolve fairly complex problems in hydro-systems and hydrologic science. (F)

CEES 5960 Directed Readings 1-3 Credit Hours
1 to 3 hours. Prerequisite: graduate standing and permission of department. May be repeated; maximum credit twelve hours. Directed readings and/or literature reviews under the direction of a faculty member. (F; Sp, Su)

CEES 5970 Special Topics/Seminar 1-3 Credit Hours
1 to 3 hours. Prerequisite: Graduate standing or permission of instructor. May be repeated; maximum credit nine hours. Special topics or seminar course for content not currently offered in regularly scheduled courses. May include library and/or laboratory research and field projects. (Irreg.)

CEES 5980 Research for Master’s Thesis 2-9 Credit Hours
Variable enrollment, two to nine hours; maximum credit applicable toward degree, four hours. (F, Sp, Su)

CEES 5982 CEES Non-Thesis Project 2 Credit Hours
Prerequisite: graduate standing and instructor permission. This is for all CEES non-thesis students to take as their final project for their non-thesis defense. Each student with their faculty advisor will determine what the project will cover. Each student will be required to develop an oral presentation about his/her written project. (F, Sp, Su)

CEES 5990 Independent Study 1-3 Credit Hours
1 to 3 hours. Prerequisite: Graduate standing and permission of instructor. May be repeated; maximum credit nine hours. Contracted independent study for a topic not currently offered in regularly scheduled courses. Independent study may include library and/or laboratory research and field projects. (Irreg.)

CEES 6210 Environmental Science Special Topics 1-6 Credit Hours
1 to 6 hours. Prerequisite: graduate standing. May be repeated with change of topic; maximum credit four hours for master’s candidate, six hours for a doctoral candidate. Research-oriented problems dealing with current topics of special interest in environmental science. (F, Sp, Su)

CEES 6663 Advanced Finite Element Methods 3 Credit Hours
(Crosslisted with AME 6663) Prerequisite: 5763. Selected topics such as: nonlinear material problems, plasticity, creep (visco-plasticity), fracture, etc.; geometrically nonlinear problems, large displacement and structural stability; dynamic problems and analytical solution procedures; soil-structure interactions; application of finite element method to fluid and heat transfer problem. (Irreg.)

CEES 6960 Directed Readings 1-3 Credit Hours
1 to 3 hours. Prerequisite: graduate standing or permission of instructor. May be repeated; maximum credit six hours. Directed readings and/or literature review under the direction of a faculty member. (Irreg.)

CEES 6970 Special Topics/Seminar 1-3 Credit Hours
1 to 3 hours. Prerequisite: graduate standing or permission of instructor. May be repeated; maximum credit 12 hours. Special topics or seminar course for content not currently offered in regularly scheduled courses. May include library and/or research and field projects. (Irreg.)

CEES 6980 Research for Doctoral Dissertation 2-16 Credit Hours
2 to 16 hours. (F, Sp, Su)

CEES 6990 Independent Study 1-3 Credit Hours
1 to 3 hours. Prerequisite: Graduate standing and permission of instructor. May be repeated; maximum credit nine hours. Contracted independent study for a topic not currently offered in regularly scheduled courses. Independent study may include library and/or laboratory research and field projects. (Irreg.)

Faculty

<table>
<thead>
<tr>
<th>Last Name</th>
<th>First/Middle Name</th>
<th>Middle init.</th>
<th>OU Service start</th>
<th>Title(s), date(s) appointed</th>
<th>Degrees Earned, Schools, Dates Completed</th>
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</thead>
<tbody>
<tr>
<td>Butler</td>
<td>Elizabeth</td>
<td></td>
<td>1999</td>
<td>PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2010</td>
<td>PhD, Univ of Michigan, 1998; MS. Univ of Maryland, 1991; BS, Univ of Maryland, 1985</td>
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<td>Name</td>
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<td>Position</td>
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<tr>
<td>Cerato Amy</td>
<td>2005</td>
<td>ROBERT GLENN RAPP FOUNDATION PRESIDENTIAL PROFESSOR, 2009; PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2016</td>
<td>PhD, Univ of Massachusetts, 2005; MS, Univ of Massachusetts, 2004; MS, Univ of Massachusetts, 2001; BS, Lafayette College, 1999</td>
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<tr>
<td>Floyd Royce</td>
<td>2012</td>
<td>ASSOCIATE PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2018</td>
<td>PhD, Univ of Arkansas, 2012; BS, Univ of Arkansas, 2008</td>
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<tr>
<td>Hatami Kianoosh</td>
<td>2004</td>
<td>PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2014; PRESIDENT’S ASSOCIATES PRESIDENTIAL PROFESSOR, 2018</td>
<td>PhD, McMaster Univ, 1997; MS, Univ of Iran, 1991; BS, Univ of Iran, 1987</td>
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<tr>
<td>Kibbey Tohren</td>
<td>1999</td>
<td>PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2010; LLOYD G. AND JOYCE AUSTIN PRESIDENTIAL PROFESSOR, 2016</td>
<td>PhD, Univ of Michigan, 1997; MSE, Univ of Michigan, 1993; BSE, Univ of Michigan, 1991</td>
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<td>Miller Gerald</td>
<td>1994</td>
<td>PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2014; ROBERT GLENN RAPP FOUNDATION PRESIDENTIAL PROFESSOR, 2013</td>
<td>PhD, Univ of Massachusetts, 1994; MS, Clarkson, 1989; BS, Clarkson, 1987</td>
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<td>Nanny Mark</td>
<td>1996</td>
<td>PROFESSOR OF EARTH AND ENERGY, 2010; PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2012</td>
<td>PhD, Univ of Illinois, 1994; MS, Univ of Illinois, 1989; BS, Univ of Wayne State, 1986</td>
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<td>Pei Jinsong</td>
<td>2002</td>
<td>ASSOCIATE PROFESSOR OF CIVIL ENGINEERING AND ENVIRONMENTAL SCIENCE, 2008</td>
<td>PhD, Columbia Univ, 2001; M Engr, Nanyang Tech Univ, 1997; B Engr, Xi’an Jiaotong Univ, 1989</td>
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<td>Ramseyer Christopher</td>
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<td>PhD, Univ of Oklahoma, 2006; MS, Univ of Oklahoma, 1999; BS, Univ of Oklahoma, 1998</td>
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<td>Last Name</td>
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<td>Sabatini</td>
<td>David</td>
<td>1989</td>
<td>Chair in Civil Engineering and Environmental Science</td>
<td>PhD, Iowa State, 1988; MSCE, Memphis State, 1985; BSCE, Univ of Illinois, 1981</td>
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<tr>
<td>Strevett</td>
<td>Keith</td>
<td>1995</td>
<td>David Ross Boyd Professor of Civil Engineering and Environmental Science</td>
<td>PhD, Univ of Connecticut, 1995; BS, Michigan State Univ, 1992</td>
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<td>Vogel</td>
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<td>2017</td>
<td>Associate Professor of Civil Engineering and Environmental Science</td>
<td>PhD, Oklahoma State Univ, 2001; MS, Texas A&amp;M Univ, 1997; BS, Univ of Nebraska, 1995</td>
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<tr>
<td>Volz</td>
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<td>2013</td>
<td>Associate Professor of Civil Engineering and Environmental Science</td>
<td>PhD, Pennsylvania State Univ, 2008; MS, Pennsylvania State Univ, 1987; BS, Pennsylvania State Univ, 1985</td>
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<td>Wang</td>
<td>Naiyu</td>
<td>2013</td>
<td>Assistant Professor of Civil Engineering and Environmental Science</td>
<td>PhD, Georgia Inst of Tech, 2010; MS, Univ of Tennessee, 2005; BS, Univ of Elec Sci &amp; Tech of China, 2000</td>
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<tr>
<td>Yang</td>
<td>Tiantian</td>
<td>2018</td>
<td>Assistant Professor of Civil Engineering and Environmental Science</td>
<td>PhD, Univ of California Irvine, 2015; MS, Univ of California, 2010; BS, Tsinghua Univ, 2009</td>
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<tr>
<td>Zaman</td>
<td>Musharraf</td>
<td>1982</td>
<td>Kerr McGee Presidential Professor</td>
<td>PhD, Univ of Arizona, 1982; MS, Carleton Univ, 1979; BS, Bangladesh Univ of Engr &amp; Tech, 1975</td>
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