

DEPARTMENT OF ENVIRONMENTAL ENGINEERING

Contact Information

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Room Number: 376

Environmental Engineering Program Educational Objectives

Within a few years of graduation, alumni of the TAMU-K undergraduate EVEN program will demonstrate achievement in the following areas:

1. Graduates will practice in one of the areas appropriate to the interdisciplinary field of environmental engineering (water quality engineering, air quality engineering, water resource management, hazardous and solid waste management, ecological engineering or engineering management).
2. Graduates will demonstrate leadership qualities (such as career advancement, community service and professional society activity) and maintain high standards for professional and ethical behavior.
3. Graduates will pursue continuing education opportunities.

Faculty Faculty

Al-Qudah, Omar Senior Lecturer, Department of Environmental Engineering; B.S., Mu'tah University (Jordan); M.S., Jordan University of Science and Technology (Jordan); Ph.D., University of Texas at El Paso.

Bezares-Cruz, Juan Assistant Professor, Department of Environmental Engineering; B.S., University of Puerto Rico (Puerto Rico); M.S., Purdue University; Ph.D., University of Texas at El Paso.

Camacho, Lucy M Assistant Professor, Department of Environmental Engineering; B.S., Technische Universität Dresden (Germany); M.S., Technische Universität Dresden (Germany); Ph.D., New Mexico State University.

Clapp, Lee Professor, Department of Environmental Engineering; Chair; B.S., University of Maine; M.S., University of Wisconsin-Madison; Ph.D., University of Wisconsin-Madison.

Jones, Kim Professor, Department of Environmental Engineering; Regents Professor; B.S., United State Military Academy, West Point; M.S., The University of Texas at Austin; M.S., Georgia Institute of Technology; Ph.D., Georgia Institute of Technology.

Lynn, Thomas Visiting Assistant Professor, Department of Environmental Engineering; B.S., University of South Florida; M.S., University of South Florida; Ph.D., University of South Florida.

Ramirez, David Associate Professor, Department of Environmental Engineering; B.S., Universidad Autonoma de Aguascalientes (Mexico);

M.S., University of Illinois at Urbana-Champaign; Ph.D., University of Illinois at Urbana-Champaign.

Ren, Jianhong Professor, Department of Environmental Engineering; B.S., Beijing Polytechnic University (China); M.S., Drexel University; Ph.D., Northwestern University.

Sinha, Tushar Assistant Professor, Department of Environmental Engineering; B. Engr., Maharana Pratap University of Agriculture and Technology (India); M.S., Indian Institute of Technology Delhi (India); Ph.D., Purdue University.

Wu, Yaoxing Assistant Professor, Department of Environmental Engineering; B.S., Harbin Institute of Technology (China); Ph.D., Nanyang Technological University (Singapore).

Zhong, Min Assistant Professor, Department of Environmental Engineering; B.S., Harbin Institute of Technology (China); M.S., Pohang University of Science and Technology (South Korea); Ph.D., University of Florida.

Courses

Environmental Engineering (EVEN)

EVEN 1201 Environmental Engi as a Career **2 SCH (2)**

Definition and role of the engineer in society. Engineering skills, tools and techniques applied to problem solving, academic and professional survival strategies.

EVEN 2304 Computer Methods for EVEN **3 SCH (3)**

Basic computer methods useful for environmental engineering analysis and design. Introduction to programming, analysis and application software, with hands-on applications. Applications of structured, object-oriented and event-driven programming and relational databases for environmental problems.

EVEN 2310 Intro to Environmntl Engineer **3 SCH (3)**

Science basics, law and regulations, protection of human health and the environment from air, water, solid/hazardous and product pollution. Structure of the environmental industry. Prerequisite: sophomore standing in physical science, engineering or agriculture.

EVEN 2311 Env. Engr. Ethics & Policy **3 SCH (3)**

Recognition and formulation of ethical questions and issues in engineering professional practice with topics linking environmental policy and economics with philosophical and cultural considerations, along with the U.S. experience of environmental policy, economics and regulation.

EVEN 2372 Envir Eng in a Global Society **3 SCH (3)**

This course focuses on current global environmental issues including environmental pollution, climate change, energy and sustainability. It also discusses the interactions between human behavior and environment crisis, studies the impact of global environmental issues, and evaluates the prospect of changing lifestyle for promoting sustainable development. Prerequisite: Sophomore standing or higher.

EVEN 2373 Sustainability Pr. & Economics **3 SCH (3)**

The social, economic and environmental dimensions of sustainability including environmental ethics and philosophy, and critical planning issues surrounding new technology, energy developmental, water management, climate science, environmental impact assessment, ecological economics and systems thinking in a global context.

EVEN 3320 Chemical Principles for EVEN 3 SCH (3)

Fundamental chemical principles for determination of the source, fate, and transformation of chemical compounds in natural and polluted environments. Climate change, air pollution, stratospheric ozone depletion, pollution and treatment of water sources, and the utilization of insecticides and herbicides. Prerequisite: CHEM 1312, CHEM 1112.

EVEN 3321 Environmental Engineering Lab 3 SCH (0-1-0-4)

Overview of contaminant transport and partitioning processes, chemical processes, biological processes, and particle dynamics and separations processes. Design and performance of experiments to generate data for environmental engineering design. Statistical analyses and interpretation of experimental data. Prerequisites: EVEN 2310 and, CHEM 1312/1112. Fee: \$30.00

EVEN 3328 Environ Engi Process Fundamntl 3 SCH (3)

Physicochemical fundamentals and applications using mass and energy balances for the design of water treatment systems with consideration of water characteristics, reaction kinetics, and process reactors. Fundamental principles are used in environmental engineering processes for water and air quality applications. Prerequisite: EVEN 2310.

EVEN 3336 Environmental Microbiology 3 SCH (3)

Use and control of microorganisms in engineered systems and the effects of microorganisms on the environment and on human activity, health, and welfare. Microbial structure, function, growth, metabolism, and diversity, as well as microbial involvement biogeochemical cycling and in water and waste treatment, waterborne diseases, and pollution control. Prerequisite: CHEM 1311.

EVEN 3399 Nuclear Environment Protection 3 SCH (3)

Nuclear fuel cycle and associated environmental impacts and safety concerns related to nuclear chemistry, nuclear physics, health physics, and environmental engineering. Prerequisite: junior standing.

EVEN 4102 Environ Engineering Design I 1 SCH (0-1-0)

Application of the scientific, engineering, technical and communications skills to develop engineering alternatives and economics analysis for an environmental engineering design topic. Students will meet one hour per week with an additional hour of recitation period to present ideas and proposal work products to the instructor. Prerequisites: CEEN 3392, EVEN 2310, EVEN 3320, EVEN 3328.

EVEN 4105 Engineering Management 1 SCH (1)

Principles and fundamentals of engineering management and leadership. Prerequisite: junior or senior standing.

EVEN 4301 Water and Wastewater Treatment 3 SCH (3)

Engineering analysis and design of water and wastewater treatment processes. Water quality evaluation; physical, chemical, and biological treatment systems; design of facilities for production of drinking water and treatment. Prerequisites: MATH 3320, EVEN 2310, EVEN 3320.

EVEN 4303 Environ Engr Design II (WI) 3 SCH (3)

The application of environmental engineering principles, including sustainability and economic criteria to a comprehensive air pollution control design problem. Computer software is utilized as a design aid. Prerequisites: EVEN 3320, EVEN 3328, EVEN 4386.

EVEN 4304 Water Res. & Adv. Comp. Meth. 3 SCH (3-1)

Application of advanced computer techniques and methods for numerical analysis and solution of complex environmental engineering problems including geospatial analysis, mathematical model development and numerical solutions to non-linear differential equations, and their applications to water resources problems. Prerequisite: EVEN 2304 or equivalent.

EVEN 4306 Solid & Hazard Waste Fundamntl 3 SCH (3)

Solid and hazardous waste engineering and planning. Landfill technology development and design. Waste to energy concepts and technology development, and resource conservation and recovery perspectives. Prerequisite: EVEN 3328.

EVEN 4317 Environmental Eng Fund 3 SCH (3)

Introductory course in Environmental Engineering: science basis, law and regulations, protection of human health and the environment from air, water, solid/hazardous and product pollution. Structure of the environmental industry. Prerequisite: junior standing in B.S. program in physical science, engineering or agriculture.

EVEN 4336 Selected Topics 1-3 SCH (1-3)

One or more topics of environmental engineering. May be repeated when topic changes. Prerequisite: senior standing.

EVEN 4357 Envr Aspects of Engi Products 3 SCH (3)

Environmental transformations, contaminant transport, ideal reactor models, design and application of exposure assessment models to solve waste load allocation problems. Prerequisite: senior standing in engineering.

EVEN 4386 Air Pollution Control 3 SCH (3)

A fundamental approach to air pollutants classification, sources and effects; theories of air quality, air pollution control and atmospheric science; control technologies of particulate and gaseous air pollutants, and process design variables; introduction to air pollution meteorology and dispersion modeling. Prerequisites: CEEN 3392 and senior standing. Credit may not be obtained in both CHEN 4386 and EVEN 4386.

EVEN 4399 Internship in Env. Engineering 1-3 SCH (1-3)

Internships in industry, government or consulting companies, designed to broaden the skills obtained through curricular education. Prerequisite: junior or senior standing.

Degree Requirements

Major

- Environmental Engineering, B.S. (<https://catalog.tamuk.edu/undergraduate/engineering/environmental/environmental-engineering-bs>)