Environmental Management Certificate Program

Accelerate Your Career

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University of California, Irvine
Improve Your Career Options with a Professional Certificate

UCI Division of Continuing Education’s professional certificate and specialized studies programs help you increase or enhance your current skills or prepare for a new career. Courses are highly practical and instructors are qualified leaders in their field. Convenient online courses make it easy to learn on your own time, in your own way. A certificate bearing the UC seal signifies a well-known, uncompromising standard of excellence.

Environmental Management Certificate Program

Compliance with regulatory requirements, remediation, and planning for sustainability greatly influences corporate operational issues and business decisions. UCI Continuing Education’s Certificate Program in Environmental Management prepares professionals at every career level to meet the challenges of the expanding regulatory framework and the increasing need for sustainable and green initiatives in the rapidly changing environmental profession.

This program is designed for individuals responsible for conducting environmental management activities such as permitting and regulatory compliance, site assessment and remediation, green and sustainability initiatives, and reporting. The curriculum prepares candidates for multi-function, multimedia and/or multi-facility responsibilities.
Who Should Enroll

Individuals transitioning into the environmental field; specialists and mid-level experienced professionals who want to enhance and update their skills and knowledge to be better prepared for additional technical and management responsibilities.

Certificate Eligibility and Requirements

One year of college chemistry or completion of Introductory Chemistry of Hazardous Materials, CHEM X470, is required for the certificate.

The certificate is awarded upon successful completion of 15 credit units (6 required and 9 elective credit units) each with a grade of "C" or better in each course. It is recommended that candidates complete the required courses prior to the elective courses.

To become an official candidate in the program, students pursuing the certificate must submit a Declaration of Candidacy. To receive the certificate after completing all program requirements, students must submit a Request for Certificate. All requirements must be completed within 5 years after the student enrolls in his/her first course. Students not pursuing the certificate program are welcome to take as many individual courses as they wish.

Program Benefits

- Learn about the roles of environmental regulatory agencies
- Recognize the importance of multi-media environmental management
- Understand the basic sciences influencing environmental and sustainability issues
- Conduct site-specific environmental activities such as project planning and assessing compliance

Program Fees

The total cost of the program varies depending on the electives chosen. Actual fees may differ from the estimate below. Fees are subject to change without prior notice.

<table>
<thead>
<tr>
<th>Fee</th>
<th>Amount</th>
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<tbody>
<tr>
<td>Course Fees</td>
<td>$4,345</td>
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<tr>
<td>Candidacy Fee</td>
<td>$125</td>
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<tr>
<td>Textbooks and Materials</td>
<td>$700</td>
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<td>Total Estimated Cost</td>
<td>$5,170</td>
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Professional Associations of Interest

- Air Water and Waste Management Association (AWMA)
- Association of Environmental Professionals (AEP)
- California Air Resources Board (CARB)
- South Coast Air Quality Management District

For more information:

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AEP members receive a 10% discount!
Please call (949) 824-5414
Advisory Committee
David Bauer, President, Targhee, Inc.
Anne Brown, Principal, Environmental Management Consulting
Jeffery V. Dagdigian, Managing Partner, Waterstone Environmental Inc.
Joel Farrier, West US Strategic Clients Executive; Regional GP Manager - Environment, Southwest, Burns & McDonnell
Lori Galloway, Vice President, CH2M Hill
Stanley Grant, Professor, University of California, Irvine, Chemical Engineering & Materials Science
Ken Herrera, Manager, T&D Environmental Services, Southern California Edison Company
Peggy Lobnitz, President, Pika Environmental, LLC
Betty Olson, Professor, University of California, Irvine, Civil & Environmental Engineering
Christina Schwerdtfeger, President, Coto Consulting Inc.
Judy Yorke, President and Principle Engineer, Yorke Engineering, LLC

Prerequisite Course
Introductory Chemistry of Hazardous Materials
CHEM X470 (3 units)
Covers concepts used in the environmental management courses. Emphasizes the practical aspects of hazardous materials chemistry, including chemical and physical properties, chemical usage in society, and familiarization with common chemical hazards. Explore topics that include terminology, periodic table, states of matters, acids and bases, solubility, bonds, compounds, equations, water cycle, movement of hazardous materials, common toxic gases, and modes of entry and action of chemicals. Also useful for people seeking to update formal chemistry training.

Required Courses (6 units)
The required courses provide a solid basis for environmental management by integrating the elements of environmental science with the legal and regulatory framework for federal, state and local government.
Legal and Regulatory Framework of Environmental Management
SOCECOL X498.1 (3 units)
Enhance your understanding of the state and federal legal and regulatory system as it relates to environmental management. Increase your knowledge of topics including: the legislative and regulatory history of major environmental programs at the federal, state and local levels; principals of land use governance; hazardous materials rules; air and water quality regulations; the permitting process; natural resource protections, and other elements of the environmental legal and regulatory framework. Additionally, we will look at the public and private "players" in this arena and the essential roles they play in establishing environmental policy and crafting and implementing law and regulations.
Chemical and Physical Principles of Environmental Management
SOCECOL X497 (3 units)
Enhance your knowledge of the application of physical and chemical principles to solve environmental problems. Gain new insight into the scientific process as used in environmental management. Learn an interdisciplinary approach using chemistry, physics, geology, meteorology, bioremediation and engineering principles to identify, evaluate and manage multi-media environmental problems. Guest experts serve as lecturers for selected sessions.

Elective Courses (Minimum 9 units)

Biological Principles of Environmental Management*
CEM X492.41 (3 units)
Extensive exposure to contaminants released in environmental and occupational settings can impact human and environmental health. Students will gain an understanding of the biological principles relating chemical exposures to adverse human and environmental health outcomes. Students will also explore current thinking on public and environmental health; environmental risk assessment; environmental risk management and control; and, regulatory perspectives. Students will be able to apply information obtained from toxicological and environmental health studies to the process of assessing, managing and controlling environmental risks. Lectures are supplemented by examples and lessons learned from active and current case studies.

Industrial Waste Management*
SOCECOL X498.9 (3 units)
Enhance your knowledge of industrial processes and the generation of waste streams. Learn about the various raw materials and chemicals used in industry, and examine the changes that occur as they move through the industrial processes. Gain an understanding of the regulations related to waste stream management, and the EPA-recognized treatment technologies for specific industries. An in-depth review of waste minimization provides the foundation to implement an effective pollution prevention program. You will also learn about the lifecycle design for general manufacturing.

Assessment and Remediation of Environmental Contamination*
ENGRCEE X468.5 (3 units)
Explore the introduction of the issues relevant to the investigation and management of contaminated sites, emphasizing problem diagnosis/characterization and the development of site remediation and restoration. This includes methods for the development of site restoration tasks, methods for evaluating the progress of corrective action programs, and the application of risk assessment methods as a decision-making tool. The focus is to synthesize technically sound principles and techniques that can be applied globally to contaminated sites in different regions of the world.

Environmental Sampling and Analysis*
ENGRCEE X468.6 (3 units)
This course introduces the theory, application, methodology, and instrumentation used in planning, sampling, and analysis of environmental contaminants in air, water, and soils. Completion of this course will increase your knowledge in topics that include: Identification and selection of appropriate methods for collection and chemical analysis environmental media samples (soil, water and air) according to EPA and other regulatory agency requirements; Understand and utilize field quality control objectives in an environmental sampling project; Interpret chemical and physical properties of common environmental contaminants and the process that affect the fate and transport of contaminants in the subsurface; How to design and prepare a basic “Site Conceptual Site Model” (CSM) using existing environmental data for a site and identify potential data gaps for additional investigation; How to design and utilize a basic “Sampling and Analysis Plan” (SAP) for an environmental assessment based on a CSM/Data Quality Objective (DQO) foundation as recommended by the U.S. EPA and other environmental agencies, and; How to evaluate analytical and other environmental data on a “risk screening level” for the potential impact to receptors.

*One year of chemistry or Chem X470, “Introductory Chemistry of Hazardous Materials.”

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Clean Water Program Regulations and Management
ENGRCEE X468.3 (3 units)
Gain an in-depth understanding of the impact and control of water pollution from urban runoff and other human activities. Grasp new insight into the evolving role of comprehensive watershed protection management. Enhance your knowledge of topics that include: review of the permitting and monitoring requirements for construction, industrial, commercial, and residential activities with emphasis on Best Management Practices (BMPs); management of urban runoff from the facility, community and watershed perspectives; Low Impact Development (LID); Hydro-modification Plan (HMP); receiving water’s Total Maximum Daily Loads (TMDLs); and the roles of education and enforcement in the successful management of urban runoff pollution. A field trip provides hands-on, practical experience utilizing BMPs.

Climate Protection and Environmental Sustainability: The Business of Mitigating Climate Change
ENGRCEE X468 (3 units)
Climate protection and environmental sustainability requires a systems engineering approach to develop and implement a strategic plan for climate protection and sustainable practices. In this course you will explore the forces driving sustainable change, the application of sustainable practices, and be guided through an analysis that will help you develop a vision and plan for implementation. Topics covered include: understanding the forces driving change; developing a strategic vision; identifying options and analyzing sustainability solutions; and developing and communicating a sustainability, climate protection, or impact reduction plan. Learn a systems approach to developing a sustainable business or community – whether to affect the bottom line for energy usage, develop new markets, or “Go Green.”

Sustainability & Green Initiatives for Environmental, Safety & Facility Professionals
SOCSECOL X499.8 (1.5 units)
Gain an understanding of how organizations are taking responsibility for the impact of their activities on employees, customers, communities, and the environment. Learn how to manage interdisciplinary relationships within an organization to develop and implement workplace programs that encompass initiatives supporting corporate social responsibility (CSR), sustainability, and green initiatives. Learn a practical approach to applying CSR and sustainability principles, and presenting data to decision makers for maximum impact. Enhance your knowledge of topics that include: elements of CSR and sustainability programs; organizational impact and risk factors; voluntary and regulatory initiatives; certification and special interest systems; environmental impact analysis; and methods and resources to solve problems.

Introduction to Environmental Assessment and Auditing
SOCSECOL X498.10 (3 units)
Enhance your knowledge of the basic principles of environmental assessment and auditing. First, learn about the ASTM process for performing Phase I Site Assessments. Explore topics that include site inspection, environmental historical review process, governmental database review, and report preparation. Then learn the basic concepts of performing Phase II site assessments and risk assessments. Conclude with a review of compliance auditing processes and gain new insight into the audit process as it relates to regulatory compliance audits and EPA involvement.

Corporate Training
Our Corporate Training specialists can deliver this program or customize one that fits your company’s specific needs. Visit ce.uci.edu/corporate or call (949) 824-1847 for information.
Air Quality Permitting and Compliance
ENGRMAE X422 (3 units)
Gain an in-depth understanding of SCAQMD air quality permitting and regulatory compliance as applied to Industrial and Government facilities. Explore the responsibilities and regulations of air quality management agencies on federal, state and local levels. Prepare for the SCAQMD Certified Professional Permitting exam. Get instruction in permit application preparation and examine issues related to permitting and compliance such as identifying and quantifying emissions, calculating air toxic health risks, and determining rule compliance. Learn about the Federal Clean Air Act revisions (including Title V), the California Clean Air Act, AB 32 Greenhouse Gas Legislation, and the SCAQMD RECLAIM Program. This course will assist those studying to take the SCAQMD’s Certified Permitting Professional Exam.

Applied Dynamic Modeling for Wastewater Treatment Plant Efficiency
ENGRCEE X499 (3 units)
Through a combination of theory and case study applications, the course provides practical experience on how to apply dynamic modeling simulators to design/upgrade wastewater treatment plants. Particular emphasis is placed on making treatment facilities more efficient from a resource utilization and recovery standpoint. Application of field test results to maximize energy efficiency in aeration systems (e.g., off gas tests) and biogas generation for energy production receives particular attention. Modeling calibration techniques are taught and implemented.
Academic Management

Dave Dimas, Ph.D., Director, Engineering, Sciences and Information Technologies

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