PROFESSIONAL & CONTINUING EDUCATION
UNIVERSITY of WASHINGTON

Green Chemistry and Chemical Stewardship

Make a difference by learning to reduce the generation of hazardous substances with the online Certificate in Green Chemistry and Chemical Stewardship.

Approved by the UW Department of Environmental and Occupational Health Sciences.

Program Overview

Study the fundamental principles of green chemistry, which encourages the reduction in use of harmful substances through chemical design and material decision making processes. Examine the connection between chemicals, toxicity and human health and how these factors influence material and product decisions. Learn how to identify sustainability issues related to the adoption of green chemistry practices and how to apply your newly acquired knowledge and skills to promote chemical stewardship.

Key Outcome

Study the fundamental principles of green chemistry, and learn how to make informed product decisions that take into account sustainability, toxicity and human health concerns.

Program Features

- Online format
- Experience using comparative chemical hazard assessment tools for product selection
- Capstone project to evaluate a chemical product within a sustainability framework
- Curriculum developed with guidance from an advisory board of academic & industry experts

Who Should Apply

- Engineers, chemists and materials scientists
- Product managers and supply chain procurement professionals
- Sustainability consultants and coordinators
- Environmental managers, health and safety professionals and risk managers

Program Starts

Winter Quarter 2015

Format

Online

Apply Now

The program begins January 2015. Applications are now being accepted.

Contact

info@pce.uw.edu

206-685-8936 or 888-469-6499

www.keeplearning.uw.edu

UW Professional & Continuing Education is the place to look for high-quality programs on sustainability and the environment, including certificate programs in:

- Green Stormwater Infrastructure
- Wetland Science and Management
- Sustainable Transportation
- Decision Making for Climate Change

Course I: Sustainability, Toxicology and Human Health

The first course provides an overview of business drivers and barriers to implementing sustainable practices. Sustainability and product stewardship are driving the need to better understand the fundamental principles of toxicology, human health and material science. Participants will review their own business' sustainability drivers and barriers while investigating the health and environmental hazards that contribute to human disease.

Topics include:

Metrics for defining sustainability within a business
Key challenges to bringing sustainable technologies to market
The basic principles of toxicology and human health
Chemical exposure, routes of exposure, and understanding risk of exposure
Concepts that affect human toxicity

Course II: Principles of Green Chemistry

This course provides the fundamental principles of green chemistry including the human and ecological reasons for considering less toxic alternatives and the various green applications to chemical design. With an increased awareness of sustainability and toxicology from course one, participants will learn about the new tools and cutting edge research that is available to the design 21st century chemicals that minimize hazards to health and the environment.

Topics include:

Ecological and human health risks
Demand for safer products
Historical and current regulatory drivers
Green chemistry role in new product design
Environmental, economic, and societal benefits of green chemistry
New tools available for chemical design

Course III: Assessment Tools for Safer Chemical Decisions

The final course explores decision-making tools and methods used for comparative chemical hazard assessments. Participants will have an opportunity for hands-on use of these tools through the completion of a culminating project.

Topics include:

Chemical hazard data, location and use
Decision-making tools for choosing better materials
Green Screens methodology and use
Third-party evaluation tools
Life cycle thinking

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Web

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