ARCH A141: INTRODUCTION TO RESOUSE MANAGEMENT

Item	Value
Curriculum Committee Approval Date	12/07/2022
Top Code	030300 - Environmental Technology
Units	3 Total Units
Hours	54 Total Hours (Lecture Hours 54)
Total Outside of Class Hours	0
Course Credit Status	Credit: Degree Applicable (D)
Material Fee	No
Basic Skills	Not Basic Skills (N)
Repeatable	No
Grading Policy	Standard Letter (S)

Course Description

This course introduces the principles of environmental resource management. An overview of the global aspects of resources and waste, creative strategies for reclaiming resources, and an introduction to community and industry opportunities and skills needed for employment in green industries, sustainable advocacy and education will be presented and explained. Transfer Credit: CSU.

Course Level Student Learning Outcome(s)

1. Students will demonstrate understanding of how consumerism, waste, and economics have interacted to create environmental degradation and will understand how develop zero waste resource management goals.
2. Students will be able to identify resources and assess the value of reclaimed resources for community and commercial purposes including: composting and organic resources, construction related waste recovery, and commercial, industrial and community discards and by-products.
3. Students will interact with resource management professionals and demonstrate understanding of careers in environmental resource management and demonstrate knowledge of the management strategies and skills needed for environmental management professions and advocacy.

Course Objectives

- 1. Identify the principles of environmental resources and how they are managed, including: water, energy, air quality, soil and food production, organic and non-organic materials and waste streams.
- 2. Understand and explain the environmental impacts of “throw away” culture and identify waste streams and the evolution of modern resource management.
- 3. Identify and explain how consumerism, waste, economics, and public policies and laws interact and relate.
- 4. Understand the principles of zero waste and define measurement tools for waste reduction and strategies for material recovery.
- 5. Analyze and identify opportunities for reusables, recyclables, compostables, and other resource recovery strategies.
- 6. Understand and describe resource management concepts.
- 7. Describe and explain the principles of composting and organic material recovery and market uses.
- 8. Understand and identify the resources derived from building-related construction, demolition, rehabilitation, and operations and how to recover and use them.
- 9. Understand and analyze how public resources are monitored and managed.
- 10. Analyze and explain how private sector businesses and industries manage resources and interact with economic models and media.
- 11. Identify occupations, careers, and citizen roles in resource management.
- 12. Observe and learn how resource management works in public and private sector businesses and facility operations.

Lecture Content

LECTURE CONTENT: Global perspective on environmental resources and managementSpaceship Earth and limited planetary resources Water Cycle and management by watershed and districts Energy Sources: non-renewables and renewables Air Quality Soil, food production, farming ranching Materials “waste” – organic Materials “waste” – non-organic Overview of “Throw-Away” culture and waste streams Global waste steams US waste streams Environmental impacts Global movements for social and environmental change Introduction to Recycling Waste Management How landfills work Recycling practices, policies, economics Collection and processing resources Waste management systems Consumerism and Zero Waste Economics of a disposable society Natural Capitalism, Ecology of Commerce (Hawkens) Products, packaging, and transportation Manufacturing Integrated waste management Zero waste principles and strategies Resource Management Concepts Rethinking waste, Cradle to Cradle Measurement tools of waste reduction Carbon reduction Embodied Energy Life cycle assessment Material recovery Downcycle/Upcycle Composting and organic resource management Science principles of composting Composting methods, public and private Organic material recovery Toxins and pathogens Compost uses and markets Construction/Demolition building-related resources LEED resources: energy, water, environmental qualityDemolition, rehabilitation of buildi ngs Material recovery, disaster debris Barriers to C/D resource recovery Policies, ordinances, programs Market strategies Public Resource Management StrategiesGlobal environmental policies US environmental policies Local environmental policies practices Southern California AQMD Utilities Waste Management practices Internships and employment opportunities Private Sector Management StrategiesMarketing and ecological narrative Social marketing and media Business and economic models Materials sourcing and environmental declarations Plant operations and design Sustainability coordinator, management opportunities Resource Management Careers Professional Development Recycling Plant Operations Resource Management Analysis Resource Marketing Economics Design Professions Public Policy Government Education Advocacy Active Learning Topics: Field visits, tours, guest speakers, interviews, case studies) Recycling, non-organic material recovery Permaculture, composting, organic materials Private business, design, manufacturing Government, education, advocacy Resource management careers

Method(s) of Instruction

- Lecture (02)
- DE Live Online Lecture (02S)
- DE Online Lecture (02X)

Instructional Techniques

Lecture, discussion, field visits and guest speakers (as available), small group projects.

Reading Assignments

Text book readings, handouts and websites assigned by instructor.

Writing Assignments

Essays, reports, exam short answers.

Out-of-class Assignments

Readings, research assignments, projects.

Demonstration of Critical Thinking

Analytical discussions about readings; discussion and analysis of how individuals, businesses, institutions, and communities manage environmental resources.

Required Writing, Problem Solving, Skills Demonstration

Prepare a report that identifies and analyzes how a community can achieve zero waste and the related benefits and challenges.

Eligible Disciplines

Architecture: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience. Architecture: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience. Environmental technologies (environmental hazardous material technology, ha...: Any bachelors degree and two years of professional experience, or any associate degree and six years of professional experience.

Textbooks Resources

1. Required Zimring, Carl A.. Cash for Your Trash, Latest ed. Rutgers University Press, 2009 Rationale: Texts will be reviewed and updated as soon as an instructor is scheduled for the course. 2. Required Paul Hawken. Drawdown:The most comprehensive plan ever proposed to reduce global warming, Current ed. Penguin Books, 2017