

CUYAMACA COLLEGE
COURSE OUTLINE OF RECORD

Engineering 103 – Environmental Engineering Seminar

3 hours lecture, 3 units

Catalog Description

Exploring the breadth and depth of environmental engineering field through presentations by invited faculty, guests, and seminar enrollees; includes individual library/internet research with written and oral presentations on selected environmental topics.

Prerequisite

None

Course Content

- 1) Engineering and environment
- 2) Sustainable development and green engineering
- 3) Global and Regional Air pollution
- 4) Water and Wastewater Management
- 5) Water Conservation and Recycled Water Program in Southern California
- 6) The role of the local and state governments in environmental management
- 7) Humanitarian projects in developing counties to provide safe drinking water
- 8) The role of private sector in environmental responsibility
- 9) Storm Runoff Control measures through contemporary hydromodification management
- 10) Engineering Economics
- 11) Renewable Energy
- 12) Frontier thinking in water sciences
- 13) The future of automobile and alternative energy sources
- 14) Engineering and environmental ethics

Course Objectives

Students will be able to:

- 1) Explore the broad sub-fields of environmental engineering
- 2) Research and analyze the responsibilities of environmental engineers in industry and society
- 3) Synthesize and present environmental engineering knowledge to peers and groups of people

Method of Evaluation

A grading system will be established by the instructor and implemented uniformly. Grades will be based on demonstrated proficiency in the subject matter determined by multiple measurements for evaluation, one of which must be essay exams, skills demonstration or, where appropriate, the symbol system.

- 1) Classroom assessment tools which may include reading quizzes, concept quizzes, and one-minute papers that measure students' ability to remember concepts just discussed in class. An example would be a short multiple choice and/or fill-in-the-blank quiz during class.
- 2) Individual/group presentations covering the environmental engineering topics presented in seminar. Two examples of this assessment: a) Individuals/groups are responsible for researching and presenting the seminars' topic followed by Q&A and further elaboration by the instructor b) Individuals/groups are responsible for researching and preparing questions before seminar and asking the questions of the instructor or guest during seminar to enrich and deepen the seminar discussion.

Special Materials Required of Student

None

Minimum Instructional Facilities

- 1) White board or SMART Board
- 2) Smart Cart with projector setup
- 3) Appropriate lab/demonstration equipment

Method of Instruction

- 1) Integrated lecture, demonstration, discussion
- 2) Guest speakers from relevant industry
- 3) Small/large group discussion and peer presentations
- 4) In-class activities and independent homework, research projects
- 5) Auxiliary use of study groups, peer tutoring and/or instructional office hours

Out-of-Class Assignments

- 1) Individual/group presentations
- 2) Readings for seminar preparation

Texts and References

- 1) Required (representative example): Davis and Cornwell *Introduction to Environmental Engineering* 9th Edition. McGraw-Hill 2022, ISBN10: 1260241092 ISBN13: 9781260241099
- 2) Supplemental: None

Student Learning Outcomes

Upon successful completion of this course, students will be able to:

- 1) Define various roles of environmental engineers in industry and society.
- 2) Apply environmental engineering concepts in presentations for peers and industry professionals.