

Mt. San Jacinto College
Integrated Course Outline of Record

Form B

Submitted by:

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Date:

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Department	Subject	Course Number	Title
Water Technology	Water Technology WATR	530	Environmental Laws and Regulations (formerly WATR-130)

Units/Hours

- Each lecture unit requires 1 hour per week of class time, and 2 hours per week of study outside of class.
- Each laboratory unit requires 3 hours per week of class time.
- Each activity unit requires 2 hours per week of class time and 1 hour per week of study outside of class.

Lecture Units

3.00

Lecture Contact Hours

48.00 - 54.00

Lecture Homework Hours

96.00 - 108.00

Total Units

3.00

Total Contact Hours

48.00 - 54.00

Stand Alone:

Program Applicable

AA/AS Degree General Ed Breadth Area(s):

-none-

General Education Justification:

Maximum Enrollment:

40

Maximum Enrollment Justification:

Justification:

Grading Method:

Letter Grade or P/NP

TOP code:

0958.00*

Can be Taken

1

time(s) for credit (max 4)

- ☐
- Visual or Performing Arts course that is required to meet major requirements for UC/CSU
-
- ☐
- Intercollegiate athletics course
-
- ☐
- Academic/vocational competition course

Catalog Description:

(Please do not refer to transferability or degree, certificate, or employment concentration applicability. Please only describe the course).
(75 words or less in gray box below).

This course provides an overview of federal, state, and local laws pertaining to environmental protection and pollution prevention relating to water quality, air quality, solid waste, and cross media contamination.

Schedule Description:

(Please do not refer to transferability or degree, certificate, or employment concentration applicability. Please only describe the course).
(25 words or less in gray box below).

This course is designed to provide a comprehensive overview of federal, state, and local laws and regulations relating to environmental protection and pollution prevention.

Need for the course:

Environmental laws and regulations define the conditions and terms concerning drinking water and wastewater treatment, in addition to establishing the pollution threats to humans and the environment. It is critical that treatment plant operators as well as other water agency employees are very familiar with all the laws and regulations relative to their jobs. This course is an elective in the Water degree/certificate as well as the Environmental Studies: Water and Soil Technologies/Environmental Engineering Emphasis degree.

Prerequisite(s):

Prerequisites go through a separate approval process. See Forms E1-E6 for details.
(For further clarification, contact the Prerequisite Subcommittee)

-none-

Corequisite(s):

Corequisites go through a separate approval process. See Forms E1-E6 for details.

-none-

Recommend Preparation:

Recommended Preparation goes through a separate approval process. See Forms E1-E6 for details.

-none-

Other Enrollment Criteria:

-none-

Learning Objectives:

(please number each objective and express in behavioral terms)
Upon the completion of the course the student will be able to do the following:

1. Demonstrate knowledge of federal, state, and local laws relating to environmental protection and pollution prevention.
2. Describe the inter-relation of federal, state and local laws relating to environmental protection and pollution prevention.
3. Analyze case studies and apply the appropriate laws in the development of appropriate intervention actions and plans.
4. Demonstrate understanding of the environmental technician’s legal role, responsibilities and requirements in

- environmental technology fields.
- 5. Report on new or pending significant regulations and their anticipated impacts.
 - 6. Collect, evaluate and select information, examples, and expert opinion to illustrate and support points on a pending or proposed state or federal regulation (i.e. arsenic, chromium, MTBE).
 - 7. Differentiate between various Public Health Goals (PHGs) and their intended benefits.
 - 8. Examine and apply California Title 22 regulations as they relate to environmental and health concerns of citizens of California.
 - 9. Compare and contrast federal and state regulations and their impacts on the water and wastewater industry.
 - 10. Criticize newly published environmental regulations.
 - 11. Compare, contrast and describe the regulatory outline fo the Safe Drinking Water Act (SDWA), Clean Water Act (CWA), and other applicable regulations as they pertain to the drinking water and wastewater industries.
 - 12. Compare and contrast the key stakeholders and their interaction in the regulatory process.
 - 13. Analyze and identify regulatory compliance resources.

Course Content:

(please number the outline of main topics and subtopics)

- 1. Course overview
- 2. Regulatory universe
 - 1. Regulatory structure
 - 2. Federal, state and local regulations
- 3. Stakeholders
- 4. History of environmental regulations
- 5. Safe Drinking Water Act
 - 1. History
 - 2. 1986/1996 Amendments
- 6. Clean Water Act
 - 1. History
 - 2. NPDES program
 - 3. POTWs and the Pretreatment Program
- 7. Clean Air Act
- 8. Stormwater regulations
- 9. Recycled water
- 10. California regulatory universe
 - 1. SDWA
 - 2. CWA/SWRCB
 - 3. CAA/CARB-AQMD
 - 4. CEQA
- 11. Water law and regulations
 - 1. Protection and pollution prevention
 - 2. Intervention, actions, and plans
 - 3. Title 22
- 12. Water utility regulatory issues
 - 1. Ordinances–water conservation
 - 2. SB 610 and WSAs
 - 3. Pending or proposed state or proposed state or federal regulations (i.e. arsenic, chromium, MTBE, etc)
 - 4. Compliance
- 13. Environmental regulations and the public
 - 1. Public participation
 - 2. Public communication-risk
- 14. Environmental advocacy
- 15. Public health goals
- 16. The role of laboratories

- 1. Laboratory and custody protocols
 - 2. The “Vanishing Zero”
- 17. Ethics in the water industry
- 18. Tomorrow’s regulatory universe
 - 1. Emerging contaminants
 - 2. New technology
 - 3. Pending and/or proposed regulations
- 19. Current environmental regulatory topics and event

Methods of Instruction:

Methods of instruction may include, but are not limited to the following:

- **Method:** Lecture
Integration: Lecture presentation and discussion with supporting visual materials (overhead slides or multimedia), introducing concepts and terminology relevant to water/wastewater regulations throughout the course(e.g., the inter-relation of federal, state and local laws relating to environmental protection and pollution prevention and related water quality issues, types of laws and ordinances and their appropriate applications.
- **Method:** Guest Lecturers
Integration: Guest lectures will enhance students comprehension by exposing students to people who are up to date in water technology and give detailed presentations on real world field applications.
- **Method:** Homework
Integration: Various writing assignments will be given to summarize major concepts discussed relevant to environmental protection and pollution prevention.
- **Method:** Audiovisual
Integration: Videos and/or slides will be used to provide a better understanding of environmental laws and regulations relating to water or wastewater. Videos will include, current regulatory issues in water supply, delivery, and treatment systems
- **Method:** Discussions
Integration: Small group discussion allows for students to discuss in detail, review, and application of content. This allows for students to put into practice/use terminology, processes, and regulatory issues in the field of water and wastewater treatment operations.
- **Method:** Supplemental Material
Integration: Supplemental material will include reviews of current news articles concerning environmental laws and regulations related to water or wastewater issues.

Methods of Evaluation:

A student's grade shall be determined by the instructor using multiple measures of performance related to the course objectives. Methods of evaluation may include but are not limited to the following:

- **Method:** Quizzes
Integration: Periodic short objective quizzes of course-related concepts, such as how water or wastewater treatment systems are impacted by regulations, water quality issues, case studies and their impacts, society’s role in the regulatory process, fiscal impacts of regulations and health based criteria. The final written work product will be graded for accuracy, completeness, and demonstrated mastery of the subject matter.
- **Method:** Exams/Tests
Integration: Students will be evaluated on a variety of written assignments demonstrating an understanding of and ability to analyze water quality concerns in a regulatory context. The final written work product will be graded for accuracy, completeness, and demonstrated mastery of the subject matter.
- **Method:** Graded assignments/worksheets
Integration: Graded assignments/worksheets will be administered to determine the students’ knowledge federal, state, tribal, territorial, and local laws and regulations and institution of practices that protect public health and the environment. The final written work product will be graded for accuracy, completeness, and demonstrated mastery of the subject matter.
- **Method:** Research Projects

Integration: Research investigation of specified subject mater related to concepts and skills developed throughout the course.The final written work product will be graded for completeness and demonstrated mastery of the subject matter.

- **Method:** Class Work

Integration: Written classroom assignments will be administered to determine the studentsâ€™ knowledge federal, state, tribal, territorial, and local laws and regulations and institution of practices that protect public health and the environment. The final written work product will be graded for accuracy, completeness, and demonstrated mastery of the subject matter.

- **Method:** Homework

Integration: Written out of the classroom assignments will be administered to determine the studentsâ€™ knowledge federal, state, tribal, territorial, and local laws and regulations and institution of practices that protect public health and the environment. The final written work product will be graded for accuracy, completeness, and demonstrated mastery of the subject matter.

- **Method:** Special Projects and Case Studies

Integration: Students will conduct research related to concepts and skills developed throughout the course. Students will evaluate the impact of proposed regulation and write a paper either supporting or criticizing the amendment. The final written work product will be graded for demonstrated mastery of the subject matter.

- **Method:** Midterm and Final Examination

Integration: A combination of objective questions of important concepts (previously quizzed or discussed in class) will be given to assess the students' knowledge and comprehension of course concepts. The final written work product will be graded for accuracy, completeness and demonstrated mastery of the subject matter.

Examples of Assignments:

Students will be expected to understand and critique college level texts or the equivalent. Reading and writing, as well as out of class assignments are required. These assignments may include but are not limited to the following:

1. Read an outside article or abstract from a trade journal that addresses water or wastewater regulatory issues that exemplify current discussions or theories. Be prepared to give an oral presentation, which briefly describes the article content, opinions and or findings.
2. In a group setting, discuss water shortages and current changes to regulatory climate safeguarding this valued resource. For example, the Environmental Protection Agency (EPA) can set limits on arsenic levels in California. Write a two-page report, APA format describing the regulation and its impact to the usage of groundwater supplies.
3. Read an article pertaining to the Safe Drinking Water Act (SDWA) or other examples of water system contamination by synthetic organic chemicals. Write a one to two page paper summarizing its significance and evaluating the importance to enviromental laws and water regulations.

Textbooks:

- Herndon, Christine; Hemming, Sally (2012). *Environmental Compliance Guidebook: Beyond Water Quality Regulations Hardcover Edition* American Water Works Association. ISBN: 978-1583218570
- Water Environment Federation (2015). *I. Advances in Water Quality Trading as a Flexible Compliance Tool* Water Environment Federation. ISBN: 978-1572783157
- University California Press (2009). *Introduction to Water in California* University California Press. ISBN: 0520260163
- Sengupta, Pradip K (2017). *Industrial Water Resource Management: Challenges and Opportunities for Corporate Water Stewardship* John Wiley and Sons, Inc. ISBN: 978-1-119-27250-2
- Lane, A., Norton M., Ryan, S. (2017). *Water Resources: A New Water Architecture* Wiley-Blackwell. ISBN: 978-1-118-79390-9

Other Resources:

Minimum Qualification

- Environmental Technologies