

NEW COURSE PROPOSAL

PROGRAM AREA ENVIRONMENTAL SCIENCE AND RESOURCE MANAGEMENT

1. Catalog Description of the Course.

ESRM 463. WATER RESOURCES MANAGEMENT (3)

Three hours of lecture per week.

Prerequisites: BIOL 330, ECON 362, ESRM 329

Water management principles focusing on irrigation and drainage, soil and water conservation, and watershed development. Topics to be covered include the hydrologic cycle; runoff; erosion control; soil-water-plant relationships; surface and subsurface drainage; surface, sprinkler, and micro irrigation; vegetated waterways and open channel flow; impoundments; wetlands; water quality and supply; water rights.

2. Mode of Instruction.

	Units	Hours per Unit	Benchmark Enrollment
Lecture	3	1	25
Seminar			
Laboratory			
Activity			

3. Justification and Learning Objectives for the Course.

The course is designed to provide the student with a basic knowledge of:

- Water management and its importance to modern society;
- Responsible management practices for soil and water resources; and
- The ability to critically assess problems and evaluate solutions.

At the end of this course, students should be able to:

- Define a variety of real-world problems in water management and develop solutions to these problems;
- Specify and quantify the important components of water management systems;
- Describe the effects of alternative practices on system behavior; and
- Predict the external effects of water management practices.

It is anticipated that this course will be an elective for the ESRM major and minor

4. Is this a General Education Course **NO**
If Yes, indicate GE category:

A (English Language, Communication, Critical Thinking)		
B (Mathematics & Sciences)		
C (Fine Arts, Literature, Languages & Cultures)		
D (Social Perspectives)		
E (Human Psychological and Physiological Perspectives)		

5. Course Content in Outline Form.

Hydrologic cycle

Runoff

Erosion control

Soil-water-plant relationships
 Surface and subsurface drainage
 Surface, sprinkler, and micro irrigation
 Vegetated waterways and open channel flow
 Impoundments
 Wetlands
 Water quality and supply
 Water rights

6. References.

Soil & Water Conservation Engineering, 3rd ed.
 G. O. Schwab, R. K. Frevert, T. W. Edminster, and K. K. Barnes. John Wiley & Sons (1981)

Elementary Soil and Water Engineering, 3rd ed.
 G. O. Schwab and R. K. Frevert. John Wiley & Sons (1985)

Soil & Water Conservation, 2nd ed.
 F.R. Troeh, J.A. Hobbs, and R.L. Donahue. Prentice Hall. (1991)

Watershed Hydrology
 Peter E. Black. Prentice Hall (1991)

Water & the Shaping of California: A Literary, Political and Technological Perspective on the Power of Water
 Sue McClurg, Kevin Starr. Heydey Books (2000)

7. List Faculty Qualified to Teach This Course.

ESRM Faculty

8. Frequency.

a. Projected semesters to be offered: Fall X Spring Summer

9. New Resources Required.

None

10. Consultation.

N/A

11. If this new course will alter any degree, credential, certificate, or minor in your program, attach a program modification.

Dr. Mark Zacharias December 1st, 2002
 Proposer of Course Date

Approvals

 Program Coordinator Date