

COURSE OUTLINE
CIVE 544 – Water Resources Planning and Management

Credits: 3

Term(s) to be offered: Fall

Prerequisite: CIVE 322 / ENVE 322, Basic Hydrology

Catalog description: Management and planning of natural and constructed water systems. Integrated management and case studies of water use and environmental resources.

Instructor: Neil S. Grigg, B 207 Engr, Phone: 491-3369

Text: *Water Manager's Handbook: A Guide to the Water Industry*, Neil S. Grigg, 2005.

Course Objectives: Our world's water is under pressure from development and pollution, and billions lack access to basic water services. Water resources managers apply technology, management and political tools to solve problems and sustain viable water systems. This course in water resources management covers principles of analysis, decision-making, and problem-solving in the water arena. Case studies illustrate the many scenarios faced by managers. The course focuses on current topics, including Colorado water, water law reform, water security, natural systems protection and others. Student presentations add to the diversity of case topics covered. The course is designed for advanced undergraduate students and graduate students in engineering, science, or management fields.

Upon completion of this course, the student should be able to:

- Describe the major issues facing water managers and the most common causes of conflict;
- Describe the necessary elements of water resources management to provide a sustainable water system;
- Describe the decision support technologies available for water management.

Course Topics/Weekly Schedule:

Week	Topic
1.	Integrated Water Resources Management Issues and Principles
2.	Natural Water Systems and Sustainable Development
3.	Water Management Infrastructure
4.	Planning and Decision-making Processes, Decision Support: Data, Models, Systems Analysis
5.	Water and Environmental Laws and Administrative Systems
6.	Financial Planning and Management
7.	Water Industry Structure and Regulation
8.	Paradigms for Solving Large-Scale Water Problems
9.	River Basin Planning and Coordination
10.	Trans-boundary issues, hydro-diplomacy, and water treaties
11.	Drought and Flood Water Management
12.	Regional Integration in Water Management
13.	Water Quality Management
14.	Management of Estuaries and Coastal Waters
15.	International Issues in Water Management

Instructional Methodology: Three lectures per week.

Mode of Delivery: Traditional lectures in class and via the course website for distance students.

Methods of Evaluation: The course grade will be based on the following distribution:

Homework and Case Study	40%
Three Exams	40%
<u>Final Exam</u>	<u>20%</u>
Total	100%