

ENV 6441 WATER RESOURCES PLANNING AND MANAGEMENT
Course Syllabus and Rules – Spring 2020 Section # EDGE 7563, 8800, On-Campus -
8795

1. Instructor:

Dr. Warren Viessman, Jr., Department of Environmental Engineering Sciences, 208 A. P. Black Hall, P. O. Box 116450, phone 352-392-2312. Office hours by appointment.

2. Times:

Wednesdays Period 10 through E1 (5:10 – 7:45 PM), room E112 CSE building.

3. Credit Hours: 3

4. Enrollment Cap:

16 on campus
no cap for online students

5. Material and Supply Fee: none

6. Prerequisites: none

7. Catalog Description:

ENV 6441 – Water Resources Planning and Management (3) Principles and practice of water resources planning and management. Protocols employed at local, state, federal, regional and international levels. Plan formulation, evaluation, and implementation. Stakeholder involvement in planning processes. Analytical tools. Case studies.

8. Course Objective:

This course is designed to (1) acquaint students with the history and practice of water resources planning and management; (2) provide examples of water resources planning protocols employed by various agencies and levels of government; (3) address the role of analytic methods in water resources planning processes; (4) illustrate the roles of interdisciplinary teamwork, partnerships, and public involvement in planning and management processes; (5) differentiate the roles of planners and decision makers; and (6) present the elements of integrated water resources planning and management.

The content of the following outline will be covered, but that the sequencing of topics and the time allotted to them may vary, depending upon the length of discussions and other factors..

9. Course Syllabus: Note that most guest speakers will not be speaking for the entire session. The topic listed below the speakers name and affiliation is the lecture topic for the remainder of that lecture period.

- January 6 Introduction, Water Resources Planning and Development from 1800 to 2004, Federal, State, and Local Government Agencies Involved in Water Resources Planning and Management, Forecasting, Future Scenarios, Population and Other Trends
- 13 Forecasting, Future Scenarios, Population and Other Trends, State and Federal Water Laws and Their Impact on Planning Processes
20. Regulatory Programs and their Impact on Planning Processes, Planning Elements, Problem Identification, Defining Alternatives, Predicting Outcomes, Valuing Outcomes, Recommending A Choice. Planning processes, use of models, optimization.
- 27 Water Resources Planning at the Corps: Theory and Practice (VC)
Robyn S. Colosimo
Senior Water Resources Planner
USACE Headquarters, Washington, D.C.
- Use of models. Optimization and simulation.
- February 3 Flood Damage Reduction, and Lessons From Katrina (VC)
Gerald E. Galloway
Glenn L. Martin Institute Professor of Engineering
Department of Civil and Environmental Engineering
University of Maryland
- Economic Analysis – Benefits, Costs, Cost Effectiveness, Incremental Cost Analysis, Discounting, Plan Evaluation
10. Water Supply Planning in the St. Johns River Basin (VC)
Barbara A. Vergara
Director, Division of Water Supply Management
St. Johns River Water Management District
- Economic Analysis – Benefits - Costs, Cost Effectiveness, Incremental Cost Analysis, Discounting, Plan Evaluation, Example Applications
- 17 State Water Resources Planning - 2005
Elizabeth M. Perez, P.E.
Brown & Caldwell
West Palm Beach, FL

Multiple Purpose and Multiple Objective Planning, the Emergence of Water Quality Protection and Enhancement as Major Planning Elements

24 Decision Analysis, Federal, State, Regional, and International Water Resources Planning Protocols

Mar. 3 Civil Works Project Planning and Development
Stuart J. Appelbaum
Deputy for Restoration Program Management
Jacksonville District, USACE
Jacksonville, Florida

Plan Formulation and Analysis, Analytical Tools

17 Public Participation, Partnering, Shared Vision Planning, Systems Analysis

24 California's Approach to Water Resources Planning and Management
John R. (Woody) Wodraska
National Director of Water Resources
PBS & J
W. Palm Beach, FL

■ Plan Formulation and Analysis, Use of Analytical Tools, Principles and Guidelines for Water and Related Land Resources Planning

31 Sustainable Water Resources Planning (VC)
Daniel P. Loucks
Professor of Civil & Environmental Engineering
Cornell University
Ithaca, New York

Plan Formulation and Analysis, Use of Analytical Tools, Principles and Guidelines for Water and Related Land Resources Planning

April 7 Environmental Restoration and Mitigation in the Missouri River Basin
Margaret K. Reed
Environmental Resources Specialist
USACE, Omaha, NE

■ Integrated Water Resources Planning and Management

14 Flood Management in Nevada

Naomi S. Duerr
Director, Truckee River Flood Project
Washoe County Department of Water Resources
Washoe Co., Nevada

21 Integrated Water Resources Planning and Management (case studies)

■ QUIZ DAY

VC - video conference

10. Text Books and Software (Required)

1. Andrew A. Dzurik, "Water Resources Planning," 3rd edition, Rowman & Littlefield Publishers, Inc., Savage, Maryland, 2002, ISBN 0-7425-1744-6.
2. Linus Schrage, Optimization Modeling With LINGO, 6th edition, 2007, LINDO Systems, Inc., Chicago, IL, 2997, ISBN 1-893355-00-4. **(Or number 3 below)**
3. "WinQSB Version2.0," Yih-Long Chang, John Wiley & Sons, Inc., New York, 2003, ISBN 0-471-40672-4.

11. Recommended (but not required) Reading

1. Alvin S. Goodman, "Water Resources Planning," Prentice Hall Inc., Englewood Cliffs, New Jersey, 1984, ISBN 0-13-710616-5.
2. Neil S. Grigg, "Water Resources Management," McGraw-Hill Book Co., New York, 1996, 0-07-024782-X.
3. Neil S. Grigg, "Water Resources Planning," McGraw-Hill Book Co., New York, 1985, 0-07-024771-4.
4. Margaret S. Peterson, "Water Resources Planning and Development," Prentice Hall Inc., Englewood Cliffs, New Jersey, 1984, ISBN 0-13-945908-1.
5. David C. Major and Roberto L. Linton, "Applied Water Resource Systems Planning," Prentice Hall Inc., Englewood Cliffs, New Jersey, 1979, ISBN 0-13-043364-0.
6. Lester R. Brown, et. al., "State of the World 1999," W. W. Norton & Company, New York.
7. Norman J. Vig and Michael E. Kraft, "Environmental Policy: New Directions for the Twenty-First Century," Fifth Edition, CQ Press, Washington, D.C., 2003, ISBN 1-56802-698-6
John G. Thibodeau and Phillip Williams, Editors, "The River Dragon Has Come!," M. E. Sharpe, Armonk, New York, 1997 ISBN 0-7656-0206-7
9. Stephen R. Chapman, "Environmental Law and Policy," Prentice hall, 1998, ISBN 0-13-848706-5
10. Norman J. Vig and Regina S. Axelrod, Editors, "The Global Environment: Institutions, Law and Policy," CQ Press, Washington, D.C., 1999, ISBN 1-56802-368-5.
11. Marc Reisner, "Cadillac Desert." Penguin Books, New York, 1986, ISBN 0-1401-0432-1.

12. Daniel P. Loucks and Eelco van Beek, "Water Resources Systems Planning and Management: An Introduction to Methods, Models and Applications," UNESCO Publishing, 2005, ISBN 92-3-103998-9.
13. Warren Viessman Jr. and Timothy D. Feather, Editors, "State Water Resources Planning in the United States," American Society of Civil Engineers, Reston, VA, 2006, ISBN 0-7844-0847-5
14. Task Committee on Sustainability Criteria for Water Resource Systems, Water Resources Planning and Management Division, ASCE, "Sustainability Criteria for Water Resource Systems," American Society of Civil Engineers, Reston, VA, 1998, ISBN 0-7844-0331-7
15. Viessman, W., Jr., Mark J. Hammer, Elizabeth M. Perez, and Paul A. Chadik Water Supply and Pollution Control, 8th edition, Prentice Hall, Upper Saddle River, NJ, 2009, 843 pp. , ISBN – 10: 0-13-233717-7.

12. Attendance and Expectations

1. Attendance of all on-campus students is expected. Those missing more than one class without a written medical or similar excuse will lose one letter grade for each absence.
2. On-campus students will be called upon, from time to time, to give reports on current news items. In general, there will be about 5 reports given each week. Distance learning students will be asked to provide e-mail summaries of articles upon request.
3. There will be weekly reading assignments in Dzurik. Read one chapter each week through April 14.
4. Oral responses to questions will be expected and there will be classroom discussions.
5. Copies of computerized slides, homework problems, reading assignments and other course materials are given on the ENV 6441 Web page: <http://ufedge.eng.ufl.edu/arch/WRPM/>
6. Class convenes at 5:10PM, there will be a 15 minute break at 6:30PM and class will be adjourned at 7:45 PM.

13. Grading

1. There will be 3 quizzes (about 60 minutes each) covering reading assignments and class lectures. Quizzes will be held on February 3, March 24, and April 7.
2. Two sets of homework tasks will be assigned on January 6 Task #1 will be due on February 17, Task #2 will be due on April 7.

Homework is to be submitted in hard copy only. For the Gainesville class, homework is due on the due date. Homework not received on the due date will lose five points per day late. Homework not received within 10 days of the due date will be graded zero. For online students, homework must be sent on the due date. It is to be sent by UPS (2-day OK) or FedX, do not use US Mail. Homework should arrive here within three days of the shipping date. If not, a late

penalty may be assessed. Homework not received within 10 days of the shipping date will be graded zero. For UPS and Fed X, use the address on my e-mails but do not include the PO Box number and use room 220 Black Hall, not 208.

The written report on each homework task must be organized as follows: as a report to the Gladsville Regional Council (GRC) from the Gladsville Metropolitan Area Planning Commission (GMAPC). The report must have: (1) a cover page; (2) a table of contents; (3) an executive summary, see item number 15 for instructions on this; and (4) the main body of the report which must include all data and computer formulations and runs. Reports not containing these features will lose points.

- 3 The quizzes will count 50% of the grade and the homework will count 50%.
4. Consult instructor regarding make-up exams or other work.

14. Grading

90-100 - A
85-89 - B+
80-84 - B
75-79 - C+
70-74 - C
65-69 - D+
60-64 - D
below 60 – E

15. Executive Summary Rules

An Executive Summary is a concise statement of the contents of a report. It is designed to consolidate the principal findings of the report. After reading it, the reader should fully understand the purpose of the report, its findings and its recommendations. Executive summaries are widely used by decision makers and their staffs to determine whether or not the report has relevance to their purpose. They do not have time to wade through the volumes of text that may be included in the full report.

A good Executive summary should contain the following:

- ▲ A statement of the purpose of the report.
- ▲ A summary of the key findings of the report
- ▲ A statement of conclusions drawn, and
- ▲ A list of recommendations

And it should:

- ▲ Include a rationale to support the findings and recommendations
- ▲ Be organized in the same manner (sequencing of topics) as the report

- ▲ Be as concise as possible (most Executive Summaries are only a few pages long, but for very large reports they may be longer)
- ▲ Be written after the report is complete, and
- ▲ Not include information that is not in the report.

Once the Executive Summary has been written, it should be read to ascertain that it tells the reader: why the report was written, what the key findings were, and what actions should be taken to deal with the problem. It should also indicate the reasoning used to support the report's recommendations.

16. Honesty Policy

All students admitted to the University of Florida have signed a statement of academic honesty committing themselves to be honest in all academic work and understanding that failure to comply with this commitment will result in disciplinary action.

This statement is a reminder to uphold your obligation as a UF student and to be honest in all work submitted and exams taken in this course and all others.

17. Accommodation for students with disabilities

Students requesting classroom accommodation must first register with the Dean of Students Office. That office will provide the student with documentation that he/she must provide to the course instructor when requesting the accommodation.

18. UF Counseling Services

Resources are available on-campus for students giving personal problems or lacking clear career and academic goals. These resources include:

University Counseling Center, 301 Peabody Hall, 392-1575, personal and career counseling

SHCC Mental Health, Student Health Care Center, 392-1171, personal counseling

Center for Sexual Assault/Abuse, Recovery and Education (CARE), Student Health Care Center, 392-1161, sexual assault counseling

Career Resource Center, Reitz Union, 392-1601, career development assistance and counseling

19. Software Use

All faculty, staff and students of the University are required and expected to obey the laws and legal agreements regarding software use. Failure to do so can lead to monetary damages and/or criminal penalties for the individual violator. Because such violations are also against University policies and rules, disciplinary action will be taken as appropriate.