

BIOLOGICAL ENGINEERING 4383
NATURAL RESOURCE ENGINEERING
CREDIT HOURS: 3 (3 HOURS LECTURE)
FALL SEMESTER 2015

10:30-11:50 A.M. T TH ROOM 115 E.B. DORAN BLDG

COURSE DESCRIPTION:

Prerequisite: CE 2200. Engineering analysis and design of natural resource control systems, including open channels, vegetated waterways, terraces, water control structures, spillways, reservoirs, flood control, surface water quality, and wetlands.

OBJECTIVE: To enable the student to analyze and design natural resource control systems.

INSTRUCTOR: DR. RICHARD L. BENGTON, Room 177, E.B. DORAN BLDG
Phone: 578-1056, Office Hours: 9:00 to 10:30 A.M. TTh

REFERENCE: Natural Resources Engineering
by Ernest W. Tollner.
Iowa State Press.

<u>GRADING OUTLINE:</u> ATTENDANCE	100 points
HOMework AND QUIZZES	200 points
ONE HOUR EXAMINATIONS	100 points
DESIGN PROJECT	100 points
FINAL EXAMINATION	<u>200 points</u>
TOTAL	700 points

Homework will be due one (1) week after it is assigned. Late homework will have 25% deducted from the grade.
Quizzes and test cannot be made up.

EXAMINATIONS: We will have one (1) one-hour mid-term examination and a final examination. We will use the following tentative schedule.

MID-TERM EXAMINATION: Thursday October 15th, 10:30-11:50 A.M.
FINAL EXAMINATION: Monday December 7th, 10:00-12:00 Noon.

A design project will be required. It will be due at 4:00 P.M. December 11, 2015.

Course grades will be determined from the following scale:

A+	100-97%
A	96-94%
A-	93-90%
B+	89-87%
B	86-84%
B-	83-80%
C+	79-77%
C	76-74%
C-	73-70%
D+	69-67%
D	66-64%
D-	63-60%
F	60-0%

"Academic Misconduct, as defined in the Code of Student Conduct, will not be tolerated in this course. It is my responsibility as the instructor to report such incidents to the Department of Judicial Affairs. It is your responsibility to understand the Code of Student Conduct and make sure your actions and perceived actions are not considered as misconduct. Ignorance of these rules will not be an adequate defense in such cases." Go to <http://appl003.lsu.edu/slas/judicialaffairs.nsf/index> for a copy of the current Code of Student Conduct."

ABET objectives assessed in BE 4383.

- (a) An ability to apply knowledge mathematics, science, and engineering
- (b) An ability to design a system, component, or process to meet desired needs
- (c) An ability to identify, formulate, and solve engineering problems
- (d) An understanding of professional and ethical responsibility
- (e) The broad education necessary to understand the impact of engineering solutions in a global and societal context
- (f) A knowledge of contemporary issues
- (g) An ability to use techniques, skills, and modern engineering tools necessary for the engineering practice

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NATURAL RESOURCE ENGINEERING
LECTURE SCHEDULE FALL 2015

<u>CLASS</u>	<u>DATE</u>	<u>TOPIC</u>
1	AUG 25	Introduction
2	AUG 27	Water Quality
3	SEP 1	Principles of Weather and Climate
4	SEP 3	Principles of Weather and Climate
5	SEP 8	Statistical Methods in Hydrology
6	SEP 10	Principles of Precipitation
7	SEP 15	Introduction to Soils
8	SEP 17	Principles of Evaporation
9	SEP 22	Principles of Evapotranspiration
10	SEP 24	Principles of Surface Runoff
11	SEP 29	Methods for Predicting Runoff
12	OCT 1	Calculating Surface Runoff Hydrographs
13	OCT 6	Principles of Open Channel Hydraulics
14	OCT 8	Principles of Open Channel Hydraulics
15	OCT 13	Design of Open Channels
16	OCT 15	<u>FIRST HOUR EXAMINATION</u>
17	OCT 20	Design of Open Channels
18	OCT 22	Design of Open Channels
19	OCT 27	Design of Open Channels
20	OCT 29	FALL HOLIDAY
21	NOV 3	Design of Vegetated Waterways
22	NOV 5	Design of Water Control Structures
23	NOV 10	Design of Culverts
24	NOV 12	Design of Spillways
25	NOV 17	Principles of Flood Control
26	NOV 19	Principles of Flood Routing
27	NOV 24	Principles of Flood Routing
28	NOV 26	THANKSGIVING HOLIDAY
29	DEC 1	Flood Routing Exercise
30	DEC 3	Reservoir Site Selection
31	DEC 7	<u>FINAL EXAMINATION</u> Monday 10:00-12:00 Noon
32	DEC 11	<u>DESIGN PROJECT DUE</u> 4:00 P.M.