

BIOLOGICAL ENGINEERING 7304  
ADVANCED NATURAL RESOURCES ENGINEERING  
CREDIT HOURS: 3 (3 HOURS LECTURE)  
SPRING SEMESTER 2013  
ROOM 115 E.B. DORAN BUILDING  
4:30 - 7:30 P.M. Tuesday

COURSE DESCRIPTION: BE 7304 Advanced Natural Resource Engineering (3) Advanced topics in statistical hydrology, flow theory, evapotranspiration, transport of pollutants, drainage, irrigation, erosion, sediment transport, and sedimentation applied to rural fields and watersheds.

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

INSTRUCTOR: Dr. Richard L. Bengtson, Room 177, E.B. Doran Building, Phone: 225-578-1056, e-mail: [bengtson@lsu.edu](mailto:bengtson@lsu.edu)

REFERENCE: MICROCLIMATE - THE BIOLOGICAL ENVIRONMENT by Norman J. Rosenberg, Blaine L. Blad, and Sashi B. Verma.

<u>GRADING OUTLINE:</u>	Homework and Quizzes	25%
	Mid-Term Examination	25%
	Research Paper	25%
	Final Examination	25%

RESEARCH PAPER: Subject to be announced.

Homework will be due one (1) week after it is assigned.

Quizzes and tests cannot be made up.

ACADEMIC MISCONDUCT:

"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."

BIOLOGICAL ENGINEERING 7304  
 ADVANCED NATURAL RESOURCES ENGINEERING  
 CREDIT HOURS: 3 (3 HOURS LECTURE)  
 SPRING SEMESTER 2013  
 ROOM 115 E.B. DORAN BUILDING  
 4:30 - 7:30 P.M. Tuesday

<u>CLASS</u>	<u>DATE</u>	<u>TOPIC</u>
1	JAN 15	Introduction to soil erosion Mechanics of erosion
2	JAN 22	Sedimentation Predicting rainfall erosion
3	JAN 29	Universal Soil Loss Equation Modified USLE
4	FEB 5	Introduction to terraces Design of terraces
5	FEB 12	MARDI GRAS HOLIDAY
6	FEB 19	Sediment transport Energy input to the biosphere
7	FEB 26	The radiation balance Soil heat flux and temperature
8	MAR 5	MID-TERM EXAMINATION
9	MAR 12	Sensible heat transfer Wind and turbulent transfer
10	MAR 19	Atmospheric humidity Evaporation, Evapotranspiration
11	MAR 26	Water balance method Mass transport method
14	APR 2	SPRING BREAK
12	APR 9	Energy balance methods Climatological methods
13	APR 16	Van Bavel method
15	APR 23	Resistance methods
16	APR 30	Class presentations
17	MAY 7	FINAL EXAMINATION TUESDAY 4:30 to 6:30 P.M.

The above schedule is tentative. Test dates will be confirmed at least one week ahead. Homework will be due one (1) week after date assigned.