

Water in the Rise and Fall of Civilizations--Laboratory

ERTH 140L

Fall 2007, F 14:00-17:00, MSEC 113

Instructor: Robert Bowman, 835-5992, bowman@nmt.edu
Office Hours: Tuesday and Thursday 14:00-15:00, MSEC 250

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Textbook:

COURSE OBJECTIVES

The purpose of this laboratory is to use local resources to illustrate hydrologic principles and to demonstrate the effort and challenges involved in managing the hydrologic system for man's benefit. The course will be a mixture of field trips to various portions of the managed riverine system along with laboratory demonstrations and exercises.

COURSE STRUCTURE

APPROACH

1. Background materials, if any, will be distributed prior to the scheduled lab session.
2. Field notebooks will be checked weekly.
3. Written assignments will be graded.

STUDENT RESPONSIBILITIES

1. Attend and participate in all regularly scheduled classes.
2. Read assigned handouts prior to class.
3. Complete and hand in field notebooks and assignments. Assignments are due at the beginning of the designated class period. Late assignments will be not being accepted unless prior arrangements are made.
4. Complete midterm and final exams. Exams will be concurrent with the exams in EARTH 140.

STUDENT EVALUATION

1. The field notebook will count for 25% of the final grade; graded assignments, 20%; the midterm exams, 15% each; final exam, 25%.

2. The grading scale will be:
 - 100-90, A
 - 89-80, B
 - 79-70, C
 - 69-60, D
 - less than 60, F
4. The final grade may be adjusted upward in recognition of active class participation and demonstrated interest.

COURSE SCHEDULE

Date	Topic	
31 Aug.	Introduction and instructions for note taking	Lab exercise
7 Sep.	The engineered water system in the Rio Grande Valley	Field trip
14	The agricultural and drainage system of the valley	Field trip
21	Engineering effects on sediment transport and riparian habitat	Field trip
28	Management for riparian habitat and wildlife	Field trip
5 Oct.	Visit to Elephant Butte Dam and reservoir	Field trip
12	Visit to instrumented watershed in Sevilleta NWR	Field trip
19	Academic holiday—no class	
26	Weekend visit to Chaco Canyon	Field trip
2 Nov.	Visit to Piro Indian archaeological site	Field trip
9	River discharge and flood frequency analysis	Lab exercise
16	Model aquifer demonstration	Lab exercise
23	Academic holiday—no class	
30	Principles of groundwater flow using Darcy columns	Lab exercise
7	Introduction to Geographical Information Systems	Lab exercise