

Syllabus -- Geography 208 Water Resources Systems

Instructor: Hugo A. Loáiciga

Time: Tuesday, 5-7 pm, room 2620 Ellison Lecture; Lab.: Wednesday 5-7 pm, Ellison 2610.

Office hours: Tuesday, Thursday: 11:00-12:00 am room 5712 Ellison, or by appointment.

Objectives: Water Resources Systems is the discipline concerned with the study of hydrology-human-environment interactions. It deals with the development and application of quantitative methodologies to analyze and synthesize water resources processes and problems, and to plan, design, and simulate water resources systems. In this course, we shall cover a variety of water resources subjects, such as water-resources economics, flood control, water treatment, groundwater management, reservoir operation, hydropower production (micro and small scale), mathematical programming. The emphasis will be on the analysis of water resources systems and on the determination of best-management strategies based on a variety of quantitative methods. The course's overall goal is to prepare the student to conceptualize and formulate water-resources problems within a quantitative framework and to derive solutions to those problems using systematic approaches.

Prerequisites: hydrology, ground-water hydrology, mathematical programming, statistical methods.

Notes and textbooks: class notes, articles to be distributed in class; plus several reference textbooks which will be listed in class if necessary.

Contents

Topic	Sessions (estimated)
Economics of Water Resources Planning	2
Flood Control Planning and Management, plus graphic HEC-1, and RAS software	2
Multipurpose reservoir operation and analysis	2
water quality/water supply/hydropower	3
Ground water systems	2
Climate change and regional water resources	2

GRADING

Homework and projects	75%
Final examination	25%
