

# ECOLOGICAL WATER RESOURCES MANAGEMENT

2009 Spring

**Instructor: Jian-Ping Suen, [jpsuen@mail.ncku.edu.tw](mailto:jpsuen@mail.ncku.edu.tw), (O) 2757575 ext. 63243**

**Meeting Time and Classroom: 09:10~12:00, Thursday, Room 4646, HOE**

**Office hour: Room 4661, HOE. 10:00~11:30, Friday, or by appointments**

Students will learn how to frame water resources problems and relevant questions from an ecological viewpoint using the systems perspective, examining ecological and human dimensions of ecosystem management through case studies of water resources in ecosystem management settings. Instruction includes a comprehensive overview and synthesis of water resources problems and their relationships to human activities, with a focus on ecological and natural resource elements. Application of ecological principles and approaches to ecosystems management will be addressed.

## **Required Readings**

Readings for each lecture will be assigned from course notes or archived papers. I will use our NCKU E-LEARNING system. Notes, assignments, and other course information will be available on the system. To access NCKU E-LEARNING system, please go to <http://iteach.ncku.edu.tw/>. After you login, **ECOLOGICAL WATER RESOURCES MANAGEMENT** class should be available. Some of you have already accessed this system. If you have any problem to use it, please ask your classmates or stop by my office.

## **Assignments**

There will be a term project and presentation.

## **Examinations**

There will be a take home examination and final oral examination.

## **Grading**

Course grades will be determined based on the following:

Examinations	40%
Term project and presentation	40%
Discussion	15%
Professional Evaluation	5%

## **Feedbacks**

There will be two feedback evaluations in early April and June for improving the quality of this course.

# **ECOLOGICAL WATER RESOURCES MANAGEMENT**

## **Syllabus 2009 Spring**

1. Incorporating Uncertainty and Complexity into Management
2. Ecological Engineering
3. Ecohydraulics
4. Ecohydrology
5. Environmental Flows
6. River Health
7. Ecosystem Services
8. Adaptive Management
9. Public Involvement
10. Balancing Water for Human and Nature

### **Term Project**

The final term project may consist of an application of the topics covered in class to a situation of your own choosing, a literature review and example application for a new management approach, or the development and testing of a type of management approach or theory not covered in class.

The major purpose of this term project is to develop some potential integrations of ecology into engineering design or management practice. Hydrology, hydraulics, geomorphology, and water quality are some possible components for the integration. Up to three people can work as a team to finish this project, but I expect each of the group members to contribute substantively to the team effort. Your individual grade for the project will be based on: a) your contribution to a written report on the project, b) the quality of the oral presentation on your results, and c) an evaluation of your performance by other members of the project team.

The term project will due on Sunday, June 7, 2009. You also need to submit a one page summary/proposal of your project by April 9, 2009. The summary/proposal should describe what you expect to do for the term project and what results you expect to find. I will be happy to help you think of ideas.