STREAM ECOLOGY

2009 Fall

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

Meeting Time: 09:10~12:00, Monday, Room 4646, HOE

Office hour: Room 4661, HOE. 14:00~15:30, Monday, or by appointments

This courses will focus on the description of physical, chemical, and biological characteristics in streams and rivers including an integrated study of the environmental factors affecting the composition and distribution of biota; emphasizes the application of ecological principles in aquatic ecosystem protection and management.

Required Readings

Readings for each lecture will be assigned from course notes or the textbook: **Allan J. D. and M. M. Castillo, 2007. *Stream Ecology: Structure and function of running waters. 2nd Eds.***

Recommended textbook: ***Hauer, F. R. and G. A. Lamberti. 2007. Methods in Stream Ecology. 2nd Eds.***

FISRWG, 1998. *Stream Corridor Restoration*. http://www.nrcs.usda.gov/technical/stream_restoration/

Additional readings will be accessible through libraries.

Examinations

There will be two examinations (and ?? quizzes 20-30 minute exercises).

Assignments

Critical Review:

This assignment is an original writing and critical analysis project. Please find a journal paper in the 'ecology or environmental science' category. It is better an engineering paper with some ecological applications. I would recommend that you select the article that seems the most interesting, is related to your research, or perhaps, ties in with another course. The details of this assignment will be announced soon.

Discussion

I strongly encourage (ask) students to discuss in the classroom. A discussion forum will also be used to extend the discussion outside of the classroom.

Grading

Course grades will be determined based on the following:

Examinations and Quizzes	60%
Assignments	35%
Professional Evaluation	5%

2009 LECTURE TENTATIVE SCHEDULE

Describing Stream Systems

1.	Introductory Class	Syllabus, Notes
2.	Watersheds	Notes
3.	Channel morphology	Notes, Chap 3
4.	Channels and Flow	Notes, Chap 3
5.	Physical factors that affect organisms - habitat	Notes, Chap 5
6.	Stream water chemistry	Notes, Chap 4
7.	Nutrient dynamics	Notes, Chap 11
8.	Time issues in streams	Notes
9.	Understanding organism distribution	Notes

Ecological Fundamentals

10.	Basic Ecological Theory of Streams	Notes, Chap 1 & 14
11.	Energy – Primary Production	Notes, Chap 6
12.	Energy – Organic Matter Dynamics	Notes, Chap 7
13.	Trophic Relationships	Notes, Chap 8
14.	Periphyton	Notes
15.	Macroinvertebrates	Notes
16.	Fish	Notes
17.	Predator Prey Interactions in Streams	Notes, Chap 9
18.	Grazing, Competition	Notes, Chap 9
19.	Succession, Colonization and Movement	Notes, Chap 9