Course Syllabus

1. Program of Study Bachelor of Science (Biological Science)
Bachelor of Science (Environment)
Faculty/Institute/College Mahidol University International College

2. Course Code ICBI 318
Course Title Aquatic Ecology Field Course

3. Number of Credits 4 (0-8-4) (Lecture/lab/Self-study)

4. Prerequisite *(s)* ICBI 317

5. Type of Course Elective

6. Trimester / Academic Year
Trimester 3/every academic year

7. Course Condition
Number of students is 20-30.

8. Course Description
Field course providing experience in ecological assessments and surveys of aquatic habitats; parameters measured/ascertained include water quality, riperian land use, in-stream and in-lake habitat types, algal communities, benthic invertebrates, fish communities; student presentations of their results.

9. Course Objective *(s)*
By the end of the course students should have extensive practical experience in:

1. Assessing the biophysicochemical properties of streams and lakes
2. The use of contemporary techniques to assess water quality
3. The methods and techniques to determine primary and secondary production in aquatic systems
4. Data collection and documentation
5. Integration, organization and dissemination of information
6. Teamwork

10. Course Outline

week	Topics/Seminar	Hours			Instructor
		Lecture	Lab	Self-study	
1-2	Stream Exercises – Physical 1. Solar radiation 2. air/water temperature 3. channel morphology 4. current + discharge	-	16	16	Dr.Wayne Phillips
3-4	Stream Exercises – Chemical 1. Dissolved oxygen 2. pH	-	16	16	Dr.Wayne Phillips

	3. Phosphates 4. Nitrates + n-itrites 5. Alkalinity				
5-6	Stream Exercises – Biological 1. Diurnal changes 2. benthic fauna in riffles 3. benthic fauna in pools 4. diurnal variations in benthic fauna fish	-	16	16	Dr.Wayne Phillips
7-8	Lake Exercises – 1. Physical 2.Solar radiation 3.Air/water temperature 4.Turbidity	-	16	16	Dr.Wayne Phillips
9-10	Lake Exercises – Chemical 1. Dissolved oxygen 2. pH 3. Phosphates 4. Nitrates + nitrites 5. Diurnal changes	-	16	16	Dr.Wayne Phillips
11	Lake Exercises – Biological 1. littoral zone 2. benthic fauna 3. Phytoplankton + Chlorophyll *a* 4. Zooplankton 5. Primary and secondary production	-	8	8	Dr.Wayne Phillips
12	Report presentation	-	8	8	
	Total		96	172	

11. Teaching Method *(s)*

Practical field experience with evening data documentation/lectures/presentations

12. Teaching Media

Field exercises and experiments.

13. Measurement and Evaluation of Student Achievement

Student achievement is measured and evaluated by

13.1 The ability to assess the biophysicochemical properties of streams and lakes

13.2 The ability to use the contemporary techniques to assess water quality

13.3 The ability to describe the methods and techniques to determine primary and secondary production in aquatic systems

13.4 The ability to do the data collection and documentation

13.5 The ability to do the integration, organization and dissemination of information

13.6 The ability to do teamwork

Student's achievement will be graded according to the college and university standard using the symbols: A, B+, B, C+, C, D+, D and F. Minimal passing level is 60%. Student who earns 85% up will have Grade A, 80-84% Grade B+ , 75-79% Grade B, 70-74% Grade C+, 65-69% Grade C, 60-64% Grade D+, 55-59% D, less than 55 Grade F. Students must attend at least 80% of the total class hours of this course.

Ratio of mark	
Participation	20%
Field trip presentation	30%
Field trip report	50%

14. Course evaluation

14.1 Students' achievement as indicated in number 13 above.

14.2 Students' satisfaction towards teaching and learning of the course using questionnaires.

15.Reference *(s)*

Dobson, M. and Frid, C. Ecology of aquatic systems. UK. Longman. 1998.

Adams, S.M. (ed), Biological indicators of aquatic ecosystem stress. USA. American Fisheries Society, Bethesda. 2002.

Talling, J.F. and Lemoalle, J. Ecological dynamics of tropical inland waters. USA. Cambridge University Press. 1998.

Wetzel, R.G. and Likens, G.E. Limnological analysis. USA. Springer-Verlag. 2000.

Wetzel, R.G. Limnology: lake and river ecosystems. USA. Academic Press, 2001.

Aquatic Ecology Field Trip Handbook

Additional readings set by instructor

16.Instructor *(s)*

Dr. Wayne Phillips

17.Course Coordinator

Dr. Wayne Phillips