

Course Syllabus

1. Program of Study: Bachelor of Science (Biological Science)
 Bachelor of Science (Environment)
Faculty/Institute/College Mahidol University International College
 Faculty of Science,
 Faculty of Environment and Resource Studies,
 Mahidol University

2. Course Code: ICBI 314 / ICEN 314 **Course Title:** Tropical Ecology

3. Number of Credits: 4 (Lecture/lab) (3 - 2)

4. Prerequisites:

ICNS 112

5. Type of Course:

Elective for 3rd year students

6. Semester / Academic Year:

Trimester 1

7. Course Description:

This course is intended to introduce students to tropical ecosystems and ecology. Topics addressed include: the tropical environment; tropical grasslands/savanna; tropical rainforests and biodiversity; tropical streams, rivers, floodplains and estuaries; tropical lakes; wetlands; mangroves; seagrasses; coral reefs; biogeography.

8. Course Objectives:

By the end of the course students should be able to describe and explain:

- the climatic conditions of the tropics
- the types of grasslands and savanna
- the importance of and environmental factors affecting photosynthesis
- the effects of grazing/predation
- tropical lakes, energy flow and biogeochemical cycling
- tropical streams and rivers – types of streams/rivers
- tropical floodplains – the Mekong river
- the River Continuum Concept (RCC) and the Flood Pulse Concept (FPC)
- tropical estuaries – types and productivity
- wetlands – types and importance
- the importance of tropical rainforests in terms of biodiversity
- mangroves and seagrasses – their importance and susceptibility to human influence
- coral reefs – biology, ecology and management
- island biogeography – evolution, extinctions and biodiversity

9. Course Outline

Class	Topic			Lecturer
	Lecture / Seminar	Hour	Lab	
1	The tropical climate; biogeographical regions; plate tectonics	4	-	Dr W. Phillips
2	Grasslands and savannah	4	-	
3	Tropical Lakes	4	-	
4	Tropical streams and rivers	4	-	
5	Tropical estuaries (+ midterm exam)	4 + 2	-	
6	Wetlands	4	-	
7	Tropical rainforests	4	-	
8	Mangroves and seagrasses	4	-	
9	Coral reefs	4	-	
10	Island biogeography + biodiversity	6	-	

10. Teaching Methods:

Lectures, in-class practical exercises, discussion, self-study and field trip with practical exercises

11. Teaching Media:

Text and teaching materials, Powerpoint, handouts, field exercises.

12. Course Achievement:

Assessment made from stated criteria: students with 80%+ obtain grade A

13. Course Evaluation:

1. Field trips report	20%
2. Assignments (x4)	20%
3. Mid-term exam	30%
4. Final exam	30%

14. References:

Osborne, 2000. Tropical ecosystems and ecological concepts. CUP, Cambridge.
 Richards, 1996. The tropical rain forest : an ecological study. CUP, Cambridge.
 Spalding *et al*, 2001. World Atlas of coral reefs. University of California Press, Berkeley
 Additional readings set by instructor

15. Instructor:

Dr Wayne Phillips

16. Course Coordinator:

Dr Wayne Phillips