

Course Syllabus (updated 19 May 2022)

SCBE 209 Ecological monitoring and the assessment of bioresources
During 20th June – 22th July, 2022

- 1. Course** SCBE 209 Ecological monitoring and the assessment of bioresources
2. Credits 4 (3-3-6)
3. Instructors

Lect.Piyathip Piyapan*	อ.ปิยทิพย์ ปิยพันธุ์	MU-KACB
Lect.Dr.Chutamas Sukonthapatipak	อ.ดร.จุฑามาศ สุขคนธปฏิบัติภาค	MU-KACB
Lect.Dr.Pornwiwan Pothasin	อ.ดร.พรวิวรรณ โพธาสินธุ์	MU-KACB
Assist.Prof.Dr.Chalita Kongrit*	ผศ.ดร.ชลิตา คงฤทธิ์	MU-SCBI
Assist.Prof.Dr.Ekgachai Jiratthitikul	ผศ.ดร.เอกชัย จิรัฏฐิติกุล	MU-SCBI
Lect.Dr.Toemthip Poolpak	อ.ดร.เต็มทิพย์ พูลภักตร์	MU-SCBI
Assist.Prof.Dr.Intanon Kolsartsanee	ผศ.ดร.อินทนนท์ กลศาสตร์เสณี	MU-SCBI

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MU-KACB = Conservation Biology Program, Mahidol University, Kanchanaburi Campus

MU-SCBI = Department of Biology, Faculty of Science, Mahidol University

- 4. Semester** 3rd semester
Academic year 2021

- 5. Pre-requisite** None

- 6. Location** Onsite at Mahidol-Salaya and Khao Yai National Park
Online teaching via WebEx

7. Course description

General methods in monitoring, collecting data and materials of the areas/ environments for detecting a particular environmental change. In this course, general methods are included in lectures, field exercises, quizzes, excursions, and reports.

8. Total hours

Lecture	Laboratory/Field Works	Self-study
48 hours (16x3)	55 hours (13x3 lab) + (16 hr field trip)	90 hours

9. Course objectives

- 1) Explain the necessary concepts and methods for ecological and bioresources monitoring
- 2) Explain the significances and application of ecological and bioresources monitoring on the conservation and management program
- 3) Demonstrate the necessary laboratory and field techniques ecological and bioresources monitoring

10. Course schedule

Day/Date	Time/Room		Topic	Lecturer
Day 1 Monday 20 Jun 2022	09.00-12.00	Lecture	Course orientation Ecology and biodiversity monitoring and assessment	Piyathip Chalita
	13.00-16.00	Lab	Lab: Database for ecological and biodiversity monitoring	Piyathip Chalita
Day 2 Wednesday 22 Jun 2022	9.00-12.00	Lecture	Assessment of biodiversity 1	Piyathip Chalita
	13.00-16.00	Lecture	Assessment of biodiversity 2	Piyathip Chalita
Day 3 Thursday 23 Jun 2022	09.00-12.00	Lecture	Vegetation survey: sampling for trees/herbaceous/shrubs Vegetation parameters (DBH, height, canopy cover etc.)	Pornwiwan
	13.00-16.00	Lab	Lab: Vegetation 1	Pornwiwan Chalita
Day 4 Friday 24 Jun 2022	09.00-12.00	Lecture	Vegetation survey: community structure (diversity, density, etc.) Ecological services: aboveground biomass and carbon storage	Pornwiwan
	13.00-16.00	Lab	Lab: Vegetation 2	Pornwiwan Chalita
Day 5 Monday 27 Jun 2022	09.00-12.00	Lecture	Habitat description and location	Chutamas
	13.00-16.00	Lab	Lab: Habitat mapping 1	Piyathip Chutamas Tanapat (TA)
Day 6 Tuesday 28 Jun 2022	09.00-12.00	Lecture	Using topography map, compass, GPS	Chutamas
	13.00-16.00	Lab	Lab: Habitat mapping 2	Piyathip Chutamas Tanapat (TA)
Day 7 Wednesday 29 Jun 2022	09.00-12.00	Lecture	Surveying birds and their habitats Bird watching equipment, and bird identification	Chutamas
	13.00-16.00	Lab	Lab: Bird watching 1	Chutamas Piyathip Tanapat (TA)
Day 8 Thursday 30 Jun 2022	09.00-12.00	Lecture	Bird diversity and its habitats	Chutamas
	13.00-16.00	Lab	Lab: Bird watching 2	Chutamas Piyathip Tanapat (TA)
Day 9 Friday 1 July 2022	09.00-12.00	Lecture	Introduction to GIS Using GIS for biodiversity and ecological monitoring	Intanon
	13.00-16.00	Lab	Lab: GIS	Intanon Tanapat (TA)
Day 10-12 4-6 July 2022			Khao Yai National Park	Teaching Team
Day 13 Monday	09.00-12.00	Lecture	Monitoring population change	Chalita

Day/Date	Time/Room		Topic	Lecturer
11 July 2022	13.00-16.00	Lab	Lab: Population growth	Chalita
Day 14 Tuesday	09.00-12.00	Lecture	Insect survey technique Insect specimen preparation and insect identification	Ekgachai
12 Jul 2022	13.00-16.00	Lab	Lab: Insect survey and identification	Ekgachai
Day 15 Monday	09.00-12.00	Lecture	Aquatic ecosystem 1	Toemthip
18 July 2022	13.00-16.00	Lab	Data and sample collection from aquatic habitats	Toemthip
Day 16 Tuesday	09.00-12.00	Lecture	Aquatic ecosystem 2	Toemthip
19 July 2022	13.00-16.00	Lab	Physical and biological factors in aquatic habitats	Toemthip
Day 17 Wednesday	09.00-12.00	Lecture	Genetic monitoring of wildlife populations	Chalita
20 July 2022	13.00-16.00	Lab	Lab: Genetic diversity	Chalita
Day 18 Friday	13.00-16.00	Lecture	Field trip report and discussion	Chalita Piyathip
22 July 2022				

11. Course evaluation

No.	Evaluation methods	Days	Proportions
1.	Lab practice/assignment and report/quiz	1-18	
2.	Field practice in ecological monitoring	10-12	
3.	In-class participation	1-18	

12. References

- Hill D., Fasham M., Tucker G., Shewry M., Shaw P. (ed.). (2005). Handbook of Biodiversity Methods: Survey, Evaluation, and Monitoring. Cambridge University Press.
- Larsen T.H. (ed.). (2016). Core Standardized Methods for Rapid Biological Field Assessment. Conservation International, Arlington, VA.
- Philip Wheeler C., Bell J.R., Cook P.A. (2011) Practical Field Ecology: A Project Guide. A John Wiley & Sons, Ltd., Publication