

Course Syllabus (updated 21 June 2023)
SCBE 209 Ecological monitoring and the assessment of bioresources
12th June – 12th July, 2023

- 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 สุขนธปฎิภาค	MU-KACB
Lect.Dr.Pornwiwan Pothisin	อ.ดร.พรวิวรรณ โพธิสินธุ์	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 กลศาสตร์เสนี	MU-SCBI

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Teaching assistants

Pakorn Komkam	ปกรณ์ คมขำ	MU-SCBI
Budda Chotimanvijit	บุตดา โชติมานวิจิตร	MU-SCBI
Xxx1 (TA)		MU-SCBI
Xxx2 (TA)		MU-SCBI
Inthiporn Malijan	อินทิพร มลิจันทร์	MU-SCBI

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 2022
5. Pre-requisite None
6. Location SC1-159/ Onsite at Mahidol-Salaya and Khao Yai National Park
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
45 hours	38 hours	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 12 Jun 2023	09.00-12.00	Lecture	Course orientation Ecology and biodiversity monitoring and assessment	Piyathip Chalita
	13.00-16.00	Lecture	Database for ecological and biodiversity monitoring	Piyathip Chalita
Day 2 Wednesday 14 Jun 2023	9.00-12.00	Lecture	Assessment of biodiversity	Piyathip Chalita
Day 3 Thursday 15 Jun 2023	09.00-12.00	Lecture	Vegetation survey: sampling techniques Vegetation parameters (DBH, height, canopy cover etc.)	Pornwiwan
	13.00-16.00	Lab	Lab: Vegetation 1	Pornwiwan Pakorn (TA)
Day 4 Friday 16 Jun 2023	09.00-12.00	Lecture	Vegetation survey: community structure, diversity indices Ecological services: aboveground biomass and carbon storage	Pornwiwan
	13.00-16.00	Lab	Lab: Vegetation 2	Pornwiwan Pakorn (TA)
Day 5 Monday 19 Jun 2023	09.00-12.00	Lecture	Habitat description and location Using topography map, compass, GPS	Chutamas
	13.00-16.00	Lab	Lab: Habitat mapping	Chutamas Pakorn (TA)
Day 6 Tuesday 20 Jun 2023	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	Chutamas Pakorn (TA)
Day 7 Thursday 22 Jun 2023	09.00-12.00	Lecture	Introduction to GIS Using GIS for biodiversity and ecological monitoring	Intanon
	13.00-16.00	Lab	Lab: GIS	Intanon Budda (TA)
Day 8 Friday 23 Jun 2023	09.00-12.00	Lecture	Insect survey technique and identification	Ekgachai
	13.00-16.00	Lab	Lab: Insect survey and identification	Ekgachai Xxx1 (TA) Xxx2 (TA)
Day 9 Monday 26 Jun 2023	09.00-12.00	Lecture	Aquatic ecosystem 1	Toemthip
	13.00-16.00	Lab	Lab: Data and sample collection from aquatic habitats	Toemthip Inthiporn (TA)
Day 10 Tuesday 27 Jun 2023	09.00-12.00	Lecture	Aquatic ecosystem 2	Toemthip
	13.00-16.00	Lab	Lab: Physical and biological factors in aquatic habitats	Toemthip Inthiporn (TA)
Day 11 Thursday 29 Jun 2023	09.00-12.00	Lecture	Genetic monitoring of wildlife populations	Chalita
	13.00-16.00	Lab	Lab: Genetic diversity	Chalita
Day 12 Monday 3 July 2023	09.00-12.00	Lecture	Quiz and field trip preparation	Piyathip Chalita

Day/Date	Time/Room		Topic	Lecturer
Day 13-15	6-8 July 2023		Khao Yai National Park	Piyathip Chalita Pornwiwan
Day 16 Wednesday 12 July 2023	9.00-11.00	Lecture	Filed trip presentation and course summary	Piyathip Chalita

11. Course evaluation

No.	Evaluation methods	Proportions
1.	Lab practice/assignment/quiz/participation	55%
2.	Final Exam	35%
3.	Khao Yai field practice, presentation and report	10%

Grading criteria

Percentage	0-49.9	50-54.9	55-59.9	60-64.9	65-69.9	70-74.9	75-79.9	80-100
Grade	F	D	D+	C	C+	B	B+	A

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