Course Syllabus

SCBE 209 Ecological monitoring and the assessment of bioresources Academic year 2025 (9th June – 9th July, 2026) Classroom : Salaya SC2-154

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 สุคนธปฏิภาค	MU-KACB
Lect.Dr.Pornwiwan Pothasin	อ.ดร.พรวิวรรณ โพธาสินธุ์	MU-KACB
Assist.Prof.Dr.Chalita Kongrit*	ผศ.ดร.ชลิตา คงฤทธิ์	MU-SCBI
Assoc.Prof.Dr.Ekgachai Jiratthitikul	รศ.ดร.เอกชัย จิรัฏฐิติกุล	MU-SCBI
Lect.Dr.Toemthip Poolpak	อ.ดร.เติมทิพย์ พูลภักตร์	MU-SCBI
Assist.Prof.Dr.Intanon Kolsartsanee	ผศ.ดร.อินทนนท์ กลศาสตร์เสนี	MU-SCBI

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Teaching assistants

Pakorn Komkam	ปกรณ์ คมขา	MU-SCBI
Budda Chotimanvijit	บุตดา โชติมานวิจิตร	MU-SCBI
Pichsinee Sapparojpattana	พิชญ์สินี สรรพโรจน์พัฒนา	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 2024

5. Pre-requisite None

6. Location 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	35 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 8 Jun 2026	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 10 Jun 2026	9.00-12.00	Lecture	Assessment of biodiversity IUCN red list	Piyathip Chalita
Day 3 Thursday 11 Jun 2026	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 12 Jun 2026	09.00-12.00	Lecture	Vegetation survey: community structure, diversity indices Ecological services: above ground biomass and carbon storage	Pornwiwan
	13.00-16.00	Lab	Lab: Vegetation 2	Pornwiwan Pakorn (TA)
Day 5 Monday 15 Jun 2026	09.00-12.00	Lecture	Habitat description and location Using topography map, compass, GPS	Chutamas
	13.00-16.00	Lab	Lab: Map and GPS practicing	Chutamas Pakorn (TA)
Day 6 Tuesday 16 Jun 2026	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 18 Jun 2026	9.00-12.00	Lecture	Introduction to GIS Using GIS for biodiversity and ecological monitoring	Intanon
		Lab	Lab: GIS	Intanon
Day 8 Friday 19 Jun 2026	09.00-12.00	Lecture	Genetic monitoring of wildlife populations	Chalita
	13.00-16.00	Lab	Lab: Genetic diversity	Chalita
Day 9 Monday 22 Jun 2026	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 23 June 2026	09.00-12.00	Lecture	Aquatic ecosystem 2	Toemthip
	13.00-16.00	Lab	Lab: Physical and biological factors in aquatic habitats	Toemthip
Day 11 Thursday 25 June2026	09.00-12.00	Lecture	Insect survey technique and identification	Ekgachai
	13.00-16.00	Lab	Lab: Insect survey and identification	Ekgachai xxxx (TA)
Day 12 Monday 29 June 2026	09.00-12.00	Lecture	Evaluation KY trip preparation	Piyathip Chalita

Day/Date	Time/Room		Topic	Lecturer
Day 13 – 15	**2-4 July 2026**		Khao Yai National Park	Piyathip Chalita Pornwiwan Jakkrit Pakorn (TA)
Day 16 Thursday 9 July 2026	09.00-12.00	Lecture	Filed trip presentation 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 Wheater C., Bell J.R., Cook P.A. (2011) Practical Field Ecology: A Project Guide. A John Wiley & Sons, Ltd., Publication