



## Course Syllabus (Academic Year 2021)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

- Course No. and Title:** KACB 350 Ecology of wetlands  
**Credit (study hours):** 3 (2-3-5)
- Program Name:** Bachelor of Science in Conservation Biology
- Course Module:**  Gen.Edu. course  B.Sc. core course  Elective course  
**Pre/co-requisite:** KACB 207 Ecology
- Semester:**  1<sup>st</sup>semester  2<sup>nd</sup>semester  3<sup>rd</sup>semester
- Class Schedule & Venue:** Lecture: Thursday 09:00 – 11:00 and 13:00 – 15:00, online via Google Classroom and Webex during August, 12 – September, 30  
Lab: Thursday 09:00 – 12.00 and 13.00 – 16.00, Room L-209, Laboratory building during October, 14 – November, 25
- Course Coordinator:** Lect. Chutamas Sukhontapatipak  
Tel. 087-495-0560  
Email: chutamas.suk@mahidol.ac.th, chutamas.suk@mahidol.edu

### 7. Course Description

Properties of wetlands, definition and classification, wetland functions, wetland biogeochemistry, microalgae, aquatic macroinvertebrates, wetland plants and animals, diversity of wetlands, zonation and succession, a functional approach, factors controlling properties of wetlands, hydrology, disturbances, herbivory, burial, fertility, competition, wetland conservation, restoration, and management

### 8. Course Objectives / Course Learning Outcomes (CLOs)

No.	Objectives/Course Learning Outcomes (CLOs)	PLOs*
8.1	Classify wetlands based on physical and biological characteristics by writing short paragraph and drawing diagram.	1,5
8.2	Explain wetland biodiversity, functions, and ecological process via short paragraph and concept map.	1,5,6
8.3	Perform basic techniques for study ecology of wetlands using scientific literacy, personal responsibility, and teamwork.	1,4,7
8.4	Express the ideas about sustainable practices for wetland conservation, restoration and management via short essay.	5,6,7

**NOTE** \*PLOs = Program Learning Outcomes

PLO 1: Analyze biodiversity value, status, trend, and their threats for monitoring and solving biodiversity problems.

PLO 4: Develop and conduct research projects systematically through scientific processes to prevent/solve/relieve problems related to biodiversity.

PLO 5: Use information technology to support effective biodiversity conservation management with morals and ethics.

PLO 6: Use communication to support appropriate biodiversity conservation management.

PLO 7: Collaborate with teammates and stakeholders in biodiversity conservation with responsibility, integrity, and respect the rights of them.

PLO 8: Show the ideas of caring both local and global biodiversity.

9. Class Instructor List Lect. Chutamas Sukhontapatipak

อ. จุฑามาศ สุขคนธปฏิบัติภาค

Lect. Sanae Jitklang

อ.เสน่ห์ จิตต์กลาง

Teaching assistant Mr. Thanaphat Klubchum

ธนภัทร กลั้วชุ่ม

## 10. Course Outline

Week	Date	Time	Contents	CLOs	Instructor's Names
1	12/08/21	09.00-11.00	Lec - Course orientation - Properties of wetlands: definition, classification, functions, and causal factors in wetland ecology	1,2	Chutamas
2	19/08/21	09.00-11.00	Lec - Wetland Biogeochemistry	1,2	Chutamas
		13.00-15.00	Lec - Wetland animal	2	Chutamas
3	26/08/21	09.00-11.00	Lec - Wetland plants	2	Chutamas
		13.00-15.00	Lec - Microalgae and aquatic macroinvertebrates	2	Sanae
4	02/09/21	09.00-11.00	Lec - Diversity of wetlands	2	Chutamas
		13.00-15.00	Lec - Zonation and succession	2	Chutamas
5	09/09/21	09.00-11.00	Lec - A functional approach	2	Chutamas
		13.00-15.00	Lec - Factors controlling properties of wetlands: Hydrology	1,2	Chutamas
6	16/09/21	09.00-11.00	Lec - Factors controlling properties of wetlands: Disturbance	1,2	Chutamas
		13.00-15.00	Lec - Factors controlling properties of wetlands: Herbivory	1,2	Chutamas
7	23/09/21	09.00-11.00	Lec - Factors controlling properties of wetlands: Burial	1,2	Chutamas
		13.00-15.00	Lec - Factors controlling properties of wetlands: Fertility	1,2	Chutamas
8	30/09/21	09.00-11.00	Lec - Factors controlling properties of wetlands: Competition	1,2	Chutamas
		13.00-15.00	Lec - Wetland conservation, restoration, and management	1,2,4	Chutamas
9	Midterm examination				
10	14/10/21	09.00-12.00	Lab - Wetland classification and delineation	1,3	Chutamas, Thanaphat
		13.00-16.00	Lab - Seed banks (1) : Setting up the experiment	2,3	Chutamas, Thanaphat
11	28/10/21	09.00-12.00	Lab - Water and sediments of wetlands	2,3	Chutamas, Thanaphat

Week	Date	Time	Contents	CLOs	Instructor's Names
		13.00-16.00	Lab - Macrophyte adaptations	2,3	Chutamas, Thanaphat
12	04/11/21	09.00-12.00	Lab - Microalgae	2,3	Sanae, Thanaphat
		13.00-16.00	Lab - Aquatic macroinvertebrates	2,3	Sanae, Thanaphat
13	11/11/21	09.00-12.00	Lab – Wetland birds	2,3	Chutamas, Thanaphat
		13.00-16.00	Lab – Invertebrates and litter decomposition (1) : : Setting up the experiment	2,3	Chutamas, Thanaphat
14	18/11/21	09.00-12.00	Lab - Plant zonation	2,3	Chutamas, Thanaphat
		13.00-16.00	Lab – Primary production	2,3	Chutamas, Thanaphat
15	20/11/21	9-hr lab	<b>Wetland trip:</b> The King's Royally Initiated Laem Phak Bia Environmental Research and Development Project Laem Phak Bia Sub-district, Ban Laem District, Petchaburi Province	1,2,3 4	Chutamas, Thanaphat
16	25/11/21	09.00-12.00	Lab - Seed banks (2) : data collection	2,3	Chutamas, Thanaphat
		13.00-16.00	Lab – Invertebrates and litter decomposition (2) : data collection	2,4	Chutamas, Thanaphat
17	Final Examination				

## 11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Midterm exam	Individual knowledge and skills from week 1-4 evaluated by closed book, writing examination	1,2	9	25%
11.2	Final exam	Individual knowledge and skills from week 5-8 evaluated by closed book, writing examination	2,4	17	30%
11.3	Field notes	Quality of individual field note taking from wetland trip	1, 2, 3, 4	15	20%
11.4	Lab assignment	Quality of group lab assignment	1, 2, 3	10-16	15%
11.5	Peer assessment	Level of individual engagement in group work assessed by group members	3	10-16	5%
11.6	Class participation	Individual assessment of level of engagement in class, listening skills, disruptive behavior, and preparation	1, 3	1-16	5%
<b>TOTAL</b>					<b>100</b>

\*\*\* Please sign for class attendance. If the students attend in the class less than 80%, they will be announced to disqualification for the later course assessment activities. Thus, the unexpected matters bring to an absence in the class, please contact course coordinator to fill in the application form and attached the evidence of absence.

## 12. Grading System

Criterion-referenced evaluation

Grade	Score	Grade	Score	Grade	Score	Grade	Score
A	$\geq 80\%$	B	70 – 74.99%	C	60 – 64.99%	D	50 – 54.99%
B+	75 – 79.99%	C+	65 – 69.99%	D+	55 – 59.99%	F	$< 50\%$

Norm-referenced evaluation

\*If use both criterion and norm-referenced evaluation, please tick two boxes.

## 13. References

Keddy, P.A. 2004. Wetland ecology: principles and conservation. Cambridge University Press, Cambridge

Mitsch, W.J. and Gosselink, J.G. 2000. Wetlands. 3rd edn. John Wiley & Sons, Inc., New York

Van der Valk, A.G. 2006. The biology of freshwater wetlands. Oxford University Press, New York.