Course Syllabus (Academic Year 2021)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title:** KACB 311 Environmental Science
   Credit (study hours): 3 (3-0-6)
2. **Program Name:** Bachelor of Science in Conservation Biology
3. **Course Module:** ☐ Gen.Edu. course ☑ Core course ☐ Elective course
   Pre/co-requisite: -
4. **Semester:** ☑ 1st semester ☐ 2nd semester ☐ 3rd semester
5. **Class Schedule & Venue:** 09:00-12:00, Room....., Mahidol University, Kanchanaburi Campus
6. **Course Coordinator:** Lect. Paiphan Paejaroen Tel. 081-2557694, Email: paiphan.pae@mahidol.edu
7. **Course Description:**

   แนวคิดสิ่งแวดล้อม องค์ประกอบทางกายภาพและชีวภาพของสิ่งแวดล้อม พลวัตประชากรของสิ่งมีชีวิต ระบบนิเวศ ผลกระทบของมนุษย์ต่อการสูญเสียทรัพยากรธรรมชาติ มลพิษสิ่งแวดล้อมและการจัดการ

   Concepts in environmental science, biotic and abiotic factors, population, dynamics, community of living things, ecosystem, impacts of human to natural resources, pollution and management.

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

No.	Objectives / CLOs	Expected Skills / Knowledge			PLOs
		Specific	Generic	Knowledge	
8.1	Understand the environment as well as the relationship between human and environment				1, 2
8.2	Describe the physical and biological components of environment, natural resources, ecosystem and population dynamics				1
8.3	Explain the human impact on environment and pollution control				2, 5
8.4	Explain environmental law				2, 3, 5

9. **Class Instructor List**

9.1	Paiphan Paejaroen	081-255-7694	paiphan.pae@mahidol.edu
9.2	Chetsada Phaenark	080-076-2169	chetsada.pha@mahidol.edu
9.3	Weerachon Sawanproh	093-339-0526	weerachon.saw@mahidol.ac.th

10. Course Outline

Day	Date	Contents	CLOs	Instructor(s)
1	11 Aug 21	What is environmental science?	1	Paiphan
2	18 Aug 21	Environmental risk: Economics, assessment, and management	2, 3	Paiphan
	*18 Aug 21 (1.00-4.00 pm)	Population biology and Human populations	2	Paiphan
3	25 Aug 21	Food and hunger	1, 2, 3, 4	Paiphan
4	1 Sep 21	Farming: conventional and sustainable practices	1, 2, 3, 4	Paiphan
5	8 Sep 21	Biodiversity and restoration ecology	2, 3	Weerachon
6	15 Sep 21	Geology and earth resources	2, 3	Paiphan
7	22 Sep 21	Conventional and sustainable energy	2, 3	Paiphan
8	29 Sep 21	Environmental law	4	Weerachon
9	Midterm Examination (4-8 October 2021)			
10	13 Oct 21	**No class** (King Bhumibhol's cremation day)		
11	20 Oct 21	Solid, toxic and hazardous waste	3, 4	Chetsada
12	27 Oct 21	Water: Use, management and pollution control	3, 4	Chetsada
13	3 Nov 21	Climate change	3, 4	Chetsada
14	10 Nov 21	Air pollution	3, 4	Paiphan
15	17 Nov 21	Environmental health and toxicology	3, 4	Chetsada
16	24 Nov 21	Urbanization and sustainable cities	1, 2, 3, 4	Paiphan
17	Final Examination (29 November-10 December 2021)			

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Midterm Examination	3-hour exam (other regulations will be announced in the class later)	1-4	2-8	55
11.2	Final Examination	3-hour exam (other regulations will be announced in the class later)	1-4	11-16	40
11.3	Reports / Assignments	Group report and assignment about case study in environmental science	1-4	2-8, 11-16	5
TOTAL					100

***** If the students attend in the class less than 80%, they will be announced to disqualification for the course examination. 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	≥ 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 and resources

- Botkin, D. B. and Keller, E. A. (2012). Environmental Science. 8th edition. John Wiley & Sons, Inc. 519 pp.
- Cunningham, W. P. and Cunningham, M. A. (2018). Environmental Science. 14th edition. McGraw-Hill Education. 614 pp.
- Enger, E.D. and Smith, B. F. (2019). Environmental Science. A Study of Interrelationships. 15th edition. McGraw-Hill Education. 516 pp.
- Enger, E.D. and Smith, B. F. (2013). Environmental Science: A Study of Interrelationships. 13th edition. McGraw-Hill. 485 pp.
- Miller, G. T. and Spoolman, T. (2013). Environmental Science. 14th edition. Brooks/Cole Cengage Learning. 459 pp.
- Wright, R. T. (2008). Environmental Science. 10th edition. Pearson Prentice Hall. 682 pp.