Course Syllabus (Academic Year 2021)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title:** KACB315 Principles of Evolution
   Credit (study hours): **3** (3-0-6)
2. **Program Name:** Bachelor of Science in Conservation Biology
3. **Course Module:** ☐ Gen.Edu. course ☐ B.Sc. core course ☑ CB core course ☐ Elective course
   Pre/co-requisite: SCBI 124, SCBI 102, KACB303, KACB209
4. **Semester:** ☑ 1st semester ☐ 2nd semester ☐ 3rd semester **Academic Year 2021**
5. **Class Schedule & Venue:** Monday, 13:30-16:30
6. **Course Coordinator:** Lect. Sanae Jitklang
   Tel. 085-1427395, Email: sanae.jit@mahidol.ac.th
7. **Course Description**

   Origin and theory of Evolution, Evidence for Evolution and Rates of Evolution, Biological variation and Polymorphism, Theory of Natural selection, Adaptation, Microevolution and Macroevolution, Speciation and Extinction, Evolution & Phylogeny, Plant & animal evolution including Human evolution, Prehistoric Age and Historic Age, Coevolution, Concept and Misconception of Evolution

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

No.	Objectives/CLOs	PLOs*	Specific Skills	Generic Skills
8.1	Explain the origin and theory of evolution including the evidences for evolution.	1	**S1** Understanding basic physical sciences and mathematics	**G1** Scientific literacy skill **G2** Numerical skill **G3** Information literacy skill **G4** Communication skill **G5** ICT literacy skills **G8** Personal responsibility
8.2	Explain genetic variation and theory of natural section and adaptive explanation	1	**S1** Understanding basic physical sciences and mathematics **S5** Explain mechanism of genetic variations in organisms	
8.3	Compare the concept between microevolution and macroevolution including concept of speciation and extinction	1	**S1** Understanding basic physical sciences and mathematics **S5** Explain mechanism of genetic variations in organisms **S7** Explain factors and mechanisms to promote biodiversity environments	

8.4	Explain concept of phylogeny, plant evolution, animal and human evolution including prehistoric age and historic age	1	**S1** Understanding basic physical sciences and mathematics **S5** Explain mechanism of genetic variations in organisms	
8.5	Evaluate and explain the concept and misconception of evolution	1,2	**S1** Understanding basic physical sciences and mathematics **S5** Explain mechanism of genetic variations in organisms	

NOTE: *PLOs = Program Learning Outcomes

PLO 1: Apply skills and knowledge of fundamental and biological sciences for explaining biodiversity.

PLO 2: Evaluate functions, value, status, trend, and threats to address biodiversity problems.

PLO 4: Choose appropriate techniques, research, and possible practices for biodiversity conservation.

9. Class Instructor

Name: Sanae Jitklang Contact No. : 085-1427395 Email : sanae.jit@mahidol.ac.th

10. Course Outline

Week	Date	Contents	CLOs	Instructor's Names
1	09/08/21	Course overview and Introduction to evolution - Biography of Charles Robert Darwin - History and theory of evolution	1, 5	Sanae Jitklang
2	16/08/21	The evidence for evolution & Rates of Evolution *	1	Sanae Jitklang
3	23/08/21	Polymorphism (Genetic variation) & Theory of natural selection	2	Sanae Jitklang
4	30/08/21	Natural selection & Adaptation	2	Sanae Jitklang
5	06/09/21	Microevolution & Macroevolution	3	Sanae Jitklang
6	13/09/21	Speciation & Extinction	3	Sanae Jitklang
7	20/09/21	Phylogeny	4	Sanae Jitklang
8	27/09/21	Concept & Misconception of Evolution	1-5	Sanae Jitklang
9	Mid-term Examination (04-08/10/21)			
10	11/10/21	Plant evolution	4	Sanae Jitklang
11	18/10/21	Animal evolution (Invertebrate)	4	Sanae Jitklang
12	25/10/21	Animal evolution (Vertebrate)	4	Sanae Jitklang
13	01/11/21	Human evolution *	1, 4	Sanae Jitklang
14	08/11/21	Human evolution (Prehistoric Age & Historic Age) *	1, 4	Sanae Jitklang

15	15/11/21	Coevolution	1-5	Sanae Jitklang
16	22/11/21	Debate in topic of evolution ** (Assignment)	1-5	Sanae Jitklang
17	Final Examination (30/11-10/12/21)			

* Field trip in these contents

11. Course Assessment

No.	Methods / Activities	Regulations	CLOs	Week	Weight Distribution (%)
11.1	Mid-term exam	3 hours exam (other regulations will be announced in the class later)	1, 2, 3, 4	1-8	35
11.2	Final exam	3 hours exam (other regulations will be announced in the class later)	1,4, 5	10-16	30
11.3	Quiz	To be announced	1-5	1-8, 10-16	10
11.4	Debate/Assignment	To be announced	5	16	10
11.5	Class attendance and participation	On time class	1-5	1-8, 10-16	10
11.6	Field trip/Presentation	To be announced	1, 4	2, 12, 13, 14	5
				Total	**100**

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

Ridly, M. (1993). *Evolution*. Blackwell Scienlife Publications, London.

Strickberger, M.W. (1995). *Evolution*. 2nd edition. Jones and Bartlett Publishers, Inc. Boston.