



## Course Syllabus (Academic Year 2020)

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:**  1<sup>st</sup> semester  2<sup>nd</sup> semester  3<sup>rd</sup> semester **Academic Year 2020**
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	POs*	Specific Skills	Generic Skills
8.1	Explain the origin and theory of evolution including the evidences for evolution.	1	<b>S1</b> Understanding basic physical sciences and mathematics	<b>G1</b> Scientific literacy skill <b>G2</b> Numerical skill
8.2	Explain genetic variation and theory of natural section and adaptive explanation	1	<b>S1</b> Understanding basic physical sciences and mathematics <b>S5</b> Explain mechanism of genetic variations in organisms	<b>G3</b> Information literacy skill <b>G4</b> Communication skill
8.3	Compare the concept between microevolution and macroevolution including concept of speciation and extinction	1	<b>S1</b> Understanding basic physical sciences and mathematics <b>S5</b> Explain mechanism of genetic variations in organisms <b>S7</b> Explain factors and mechanisms to promote biodiversity environments	<b>G5</b> ICT literacy skills <b>G8</b> Personal responsibility

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	10/08/20	Course overview and Introduction to evolution - Biography of Charles Robert Darwin - History and theory of evolution	1, 5	Sanae Jitklang
2	17/08/20	The evidence for evolution & Rates of Evolution *	1	Sanae Jitklang
3	24/08/20	Polymorphism (Genetic variation) & Theory of natural selection	2	Sanae Jitklang
4	31/08/20	Natural selection & Adaptation	2	Sanae Jitklang
5	07/09/20	Microevolution & Macroevolution	3	Sanae Jitklang
6	14/09/20	Speciation & Extinction	3	Sanae Jitklang
7	21/09/20	Phylogeny	4	Sanae Jitklang
8	28/09/20	Concept & Misconception of Evolution	1-5	Sanae Jitklang
9	Mid-term Examination (05-09/10/20)			
10	12/10/20	Plant evolution	4	Sanae Jitklang
11	19/10/20	Animal evolution (Invertebrate)	4	Sanae Jitklang
12	26/10/20	Animal evolution (Vertebrate)	4	Sanae Jitklang
13	02/11/20	Human evolution *	1, 4	Sanae Jitklang
14	09/11/20	Human evolution (Prehistoric Age & Historic Age) *	1, 4	Sanae Jitklang

15	16/11/20	Coevolution	1-5	Sanae Jitklang
16	23/11/20	Debate in topic of evolution ** (Assignment)	1-5	Sanae Jitklang
17	Final Examination (30/11-11/12/20)			

\* 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	25
11.3	Quiz	To be announced	1-5	1-8, 10-16	15
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
				<b>Total</b>	<b>100</b>

### 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.