



Course Syllabus (Academic Year 2021)

School of Interdisciplinary Studies, Kanchanaburi Campus, Mahidol University

1. **Course No. and Title:** KACB306 Basic Microbiology
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 125
4. **Semester:** 1st semester 2nd semester 3rd semester **Academic Year 2021**
5. **Class Schedule & Venue:** Tuesday, lecture 9.30-12.30 and 13:30-16:30
6. **Course Coordinator:** Dr. Sanae Jitklang
Tel. 085-1427395, Email: sanae.jit@mahidol.ac.th

7. Course Description

Introduction to Microbiology: Basic knowledge of microorganisms & general microbial classification, Microscopes & Tools for observing microorganism, Classification of Bacteria, Classification of Fungi, Classification of Protozoa & algae, Microbial genetics, Virus Immunology, Microbial Nutrition, growth factors & culture collection of microorganisms, host-microorganism interaction & control, Environmental microbiology, Food microbiology including Microbial ecology

8. Course Objectives / Course Learning Outcomes (CLOs)

No.	Objectives/CLOs	PLOs*
8.1	Explain the definition of microorganism, general microbial classification and including tools or microscopes for observing microorganism	1
8.2	Explain the microbial classification, microbial genetics, immunology, metabolism, nutrition, growth factor including culture collection of microorganisms	1, 2, 4
8.3	Describe the host-microorganism interaction and basic knowledge of environmental microbiology, food microbiology including microbial ecology	1, 4

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 List

1. Name: Dr. Sanae Jitklang	Contact No. : 085-1427395	Email : sanae.jit@mahidol.ac.th
2. Name : Dr. Pinnara Rojvirat	Contact No. : 098-646-9415	Email : pinnara.roj@mahidol.ac.th
3. Name : Dr. Amnat Jarerat	Contact No. : 086-038-1084	Email : amnat.jar@mahidol.ac.th

10. Course Outline

Week	Date	Contents	CLOs	Instructor's Names
1	20/07/21	- Introduction to Microbiology - Definition of Microorganism & General microbial classification	1	Sanae Jitklang
2	20/07/21	Microscope & Tools for observing microorganism	1	Sanae Jitklang
3	27/07/21	Classification of Bacteria and characterization	1,2	Sanae Jitklang
4	27/07/21	Classification of Archaea and characterization	1,2	Sanae Jitklang
5	03/08/21	Classification of Fungi	1,2	Sanae Jitklang
6	03/08/21	Classification of Protozoa & algae	1,2	Sanae Jitklang
7	10/08/21	Microbial genetics	2	Pinnara Rojvirat
8	10/08/21	Virus	2	Sanae Jitklang
9	Mid-term Examination			
10	17/08/21	Immunology	2	Sanae Jitklang
11	17/08/21	Microbial nutrition, growth factors & Preservation of microorganisms	2	Amnat Jarerat
12	24/08/21	Bacteria-host interaction and controlling of bacteria	3	Sanae Jitklang
13	24/08/21	Fungi-host interaction & Protozoa-host interaction	3	Sanae Jitklang
14	31/08/21	Environmental microbiology	3	Sanae Jitklang
15	31/08/21	Food microbiology	3	Amnat Jarerat
16	07/09/21	Microbial ecology & Symbioses	3	Sanae Jitklang
17	Final Examination			

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	1-8	35

11.2	Final exam	3 hours exam (other regulations will be announced in the class later)	2, 3	10-16	30
11.3	Quiz	To be announced	1, 2, 3	1-8, 10-16	10
11.4	Assignments	To be announced	1, 2, 3	1-8, 10-16	15
11.5	Class attendance and participation	On time class	1, 2, 3	1-8, 10-16	10
				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

Megican, M., Martinko, J., Bender, K., Buckley, D. & Stahl, D. (2015). *Brock Biology of Microorganisms*. 4th edition (Global edition). Pearson Education Limited, England, 1030 pp.

Talaro, K. P. (2009). *Fundamentals in Microbiology: Basic Principles*. 7th edition (International edition). McGraw-Hill, 534 pp.