

SCBE332 – Host-microbe Interactions 3 (2-3-5)

- 1. Subject** SCBE 332 Host-microbe Interactions
- 2. Credit** 3 (2-3-5)
- 3. Instructor**
Course co-ordinator & Instructor: Dr. Pahol Kosiyachinda (pahol.kos@mahidol.edu)
- 4. Semester/Academic Year** 1 / 2565
- 5. Pre-requisite & Co-requisite** None
- 6. Location**
Mahidol University, Salaya Campus

7. Course description

Biodiversity of microbes and their interactions with their hosts; various types of interactions including mutualism, commensalism, parasitism; molecular aspects of host and microbes of importance with implications in ecological aspects; implication and exploitation of the interactions in agriculture, medicine, and public health; laboratory exercises.

8. Total hours

Lecture	Extra-curriculum activity	Laboratory	Self-study
30	-	45	75

9. Objectives

Instructor expects students to acquire skills and knowledge as follows. Students should:

- 1) Understand roles of microbes and their interactions with their hosts.
- 2) Have ability to explain how microbes affect our lives and well-being.
- 3) Be aware of harms and benefits of microbes as well as the biology behind.
- 4) Be able to apply the concepts of host-microbe interactions through understanding of science and technology in daily life.

10. Grading:

Total percentage	0-49	50-54	55-59	60-64	65-69	70-74	75-79	80-100
Grade	F	D	D+	C	C+	B	B+	A

11. Reference

Current research publications from scientific journals in related fields

Course syllabus: SCBE332 Host-microbe Interactions 3 (2-3-5)

Google class code: jzu22up
 Lecture : Fridays: 12:30-14:30 (SC1-157, when on-site class is permissible)
 Laboratory: Fridays: 14:30-17:30 (SC3-300, when on-site class is permissible)
 Lecturer: Dr. Pahol Kosiyachinda
 Laboratory technician: Ms. Krissana Parkpoomkamol
 Class link: <https://classroom.google.com/c/NTM2ODY3MDAYnZUw?cjc=jzu22up>

Week	Date	Topic
1	5 Aug	Introduction: Diversity of microbes
2	19 Aug	Biology of microbiome including virome and mycome
3	26 Aug	Techniques in microbiomes
4	2 Sep	Various modes of interactions
5	9 Sep	Viral infection and viral ecology
6	16 Sep	Bacterial infection and bacterial intercellular communication
7	23 Sep	Fungal infection and fungal toxins
8	30 Sep	Antibiotics and resistance
9	7 Oct	Midterm examination
10	21 Oct	Horizontal gene transfer and microbial evolution
11	28 Oct	Immunity, antibiotics, and resistance
12	4 Nov	Co-evolution of hosts and microbes I
13	11 Nov	Co-evolution of hosts and microbes II
14	18 Nov	Case study: virus and antiviral drugs
15	25 Nov	Case study: mycotoxins and their applications
16	2 Dec	Case study: PGPR and bio-Fertilizer
17	6-16 Dec	Final Examination

Evaluation

TQF	Evaluation Method	Week	Proportion
1	- Participation - Attendance/Attention - Quiz & Presentation	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	30 %
2	- Laboratory	1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15	30%
3	- Midterm Examination	1, 2, 3, 4, 5, 6, 7, 8	20 %
4	- Final Examination	9, 10, 11, 12, 13, 14, 15, 16	20 %