

SCBE253 - Fundamentals to Finesse: Microbes for quality life 3 (2-3-5)

1. Subject

SCBE 253 Fundamentals to Finesse: Microbes for quality life

2. Credit

3 (2-3-5)

3. Instructor

Course co-ordinator & Instructor: Dr. Pahol Kosiyachinda (pahol.kos@mahidol.edu)

4. Semester/Academic Year

2 / 2563

5. Pre-requisite & Co-requisite

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7. Location

Mahidol University, Salaya Campus

8. Course description

Beneficial interactions between microbes and humans are investigated, including those in various industries, in production of foods (e.g. lactic acid bacteria for dairy products, bacterial acetic acid fermentation, yeast application in the manufacture of beer, wine, and breads, and gasohol production, soy sauce, sauerkraut, dill pickles, olives, salami, cocoa and black teas), medical and pharmaceutical applications, in agriculture, and in environmental applications.

9. Total hours

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

10. Objectives

To understand roles of microbes in modern life

To appreciate applications of sciences behind quality life

To be aware of harms and benefits of microbes

To be able to distinguish fineness among the common through understanding of science and technology

Reference

Kent, M. Advanced Biology, Oxford University Press; 2000

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Course syllabus

Google class code: 7a5vgeo
 Lecture : Fridays: 13.00-15.00 (SC1-157)
 Laboratory: Fridays: 15.00-18.00 (SC3-300)
 Lecturer: Dr. Pahol Kosiyachinda
 Laboratory technician: Ms. Krissana Parkpoomkamol

Date	Topic	Assignment
22 Jan	Introduction: Microbes for quality life	-
29 Jan	Microbes, diseases, and vaccine	17.1-17.3
5 Feb	Techniques to study microorganisms	17.4-17.5
12 Feb	Chemicals: Ingredients and additives	17.6
19 Feb	Fermentation	17.7-17.9
5 Mar	Case study: Yoghurt	
12 Mar	Fermented food: Probiotics food and culture	17.9
19 Mar	Midterm Examination	
26 Mar	Sensory evaluation: Flavors	
2 Apr	Sensory evaluation: Fragrances	
9 Apr	Fermented food: Bread and cheese	
16 Apr	Fermented food: Beverage	17.10
23 Apr	Biogas and gasohol	17.10
30 Apr	Agricultural product: Fertilizer and organic farming	17.11
7 May	Environmental application: Bioremediation	
11-21 May	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 %

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
Grade	U	S					O	