

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

- 1. Subject** Fundamentals to Finesse: Microbes for quality life (SCBE253)
- 2. Credit** 3 (2-3-5) #SC2-161 / Saturday/ 09.00-14.00
- 3. Instructor**
Course co-ordinator & Instructor: Dr. Pahol Kosiyachinda (pahol.kos@mahidol.edu)
- 4. Semester/Academic Year** 2 / 2565
- 5. Pre-requisite & Co-requisite** None
- 6. Type of course** General Education
- 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 science and technology

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

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		

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Course syllabus

Google class code: apfszxq
 Lecture : Saturday: 08.30-10.30 (To be announced)
 Laboratory: Saturday: 10.30-13.30 (To be announced)
 Teaching assistant: Mr. Worasak Viwatsurseree
 Laboratory technician: Ms. Suchada Geawduanglek
 Class materials: <https://classroom.google.com/c/NTgwOTM2Mzk2NzI0?cjc=apfszxq>

Date	Topic	Assignment
14 Jan	Introduction: Microbes for quality life	-
21 Jan	Microbes, diseases, and vaccine	17.1-17.3
28 Jan	Techniques to study microorganisms	17.4-17.5
4 Feb	Chemicals: Ingredients and additives	17.6
11 Feb	Fermentation	17.7-17.9
18 Feb	Case study: Probiotic supplements	
25 Feb	Fermented food: Probiotics food and culture	17.9
4 Mar	Sensory evaluation: Flavors	
11 Mar	Midterm Examination	
18 Mar	Sensory evaluation: Cheese	17.10
25 Mar	Fermented food: Bread	17.10
1 Apr	Fermented food: Beverage	17.10
8 Apr	Fermented food: Sauce and condiment	17.10
15 Apr	Public holiday	
22 Apr	Agricultural product: Fertilizer and organic farming	
29 Apr	Environmental application: Bioremediation	
2-12 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 %