

SEMESTER II
LSM3242 – APPLIED MICROBIOLOGY

Prerequisite: LSM2101 or LSM2102 or LSM2103. Students may co-read with LSM3232 or have passed LSM3232.

Workload: 26 lecture hours + 6 tutorial hours/industrial visits + 18 laboratory hours

This module covers the underlying scientific principles and the wide-ranging industrial, environmental, pharmaceutical, and biomedical applications of microbiology. The objectives are (a) to gain an understanding of the role of microorganisms for biotechnology applications and (b) to review advances in genetics and molecular biology of industrial microorganisms, enzyme engineering, environmental microbiology, food microbiology and molecular biotechnology.

S/N	Topics	Lecture hours
1.	Microbes and cell cultivation	4 Lee YK
2.	Genetic and molecular biology of industrially important microorganisms; screening of primary and secondary metabolites	4 Sim TS
3.	Industrial biotechnology Pharmaceutical Chemical	2 2 Sim TS
4.	Food and agro biotechnology Food biotechnology Agrobiotechnology	4 Lee YK 2 Lee YK
5.	Immunoassay for microbes and microbe specific antibodies	2 DM Kemeny
6.	Diagnostic and vaccine development	6 Jimmy Kwang
Total Lectures: 26h		
Tutorials: 6h		
Practicals: 6x3= 18h		
Total hours:		50h

TEXT BOOK (Reference books):

Lee YK. Microbial Biotechnology, Principles and Application, 2nd ed. World Scientific, Singapore. 2006

Atlas RM. Principles of Microbiology. Wm. C. Brown Publishers, Dubuque, IA. 1997.

Black JG. Microbiology: Principles and Explorations, 6th ed. John Wiley & Sons, Hoboken. 2005

Prescott LM, Harley JP, Klein DA. Microbiology, 6th ed. McGraw Hill, Boston. 2005.

MODE OF ASSESSMENT:

30% - Continuous Assessment

70% - Written Examination

MODULE CO-ORDINATOR:

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LECTURERS:

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