

Course Description: An introduction to microbiological techniques and principles through hands-on laboratory activities and tutorials. Topics include cultivation, isolation, differentiation, identification, control and exploitation of microorganisms, and prevalence of microorganisms in the body, environment and food. **Co-requisite:** LIFS3060 **Credit Points:** 3

Intended Learning Outcomes (ILOs): On successful completion of this course, students are expected to be able to: (1) recall information concerning basic microbiology laboratory techniques; (2) demonstrate practical competence in basic microbiology laboratory techniques; (3) apply scientific reasoning and knowledge to describe, analyze, interpret and explain experimental data; (4) apply basic microbiological principles to daily life and special situations; (5) work and coordinate effectively in a group to develop collaborative projects; (6) operate ethical laboratory practices such as safety and environmental protection; and (7) evaluate and design laboratory experiments, interpret experimental data and write up the results in accordance with appropriate scientific conventions.

Weekly Meeting Time & Venue:

Mon 18:00-18:50	Room 1104 or 4160
Wed 14:00-16:50	Room 4160
Thu 18:00-18:50	Room 4160

Course Schedule:

Week	Dates	Topics
1	Feb 1 Feb 5, 7, 8	Course Introduction Practical 1 – Culture & Visualization of Microbes
2	Feb 12, 14, 15	Practical 2 – Isolation & Characterization of Microbes
3	Feb 21, 22	Practical 2 – Isolation & Characterization of Microbes (cont.)
4	Feb 26, 28, Mar 1	Practical 3 – Antimicrobials & Sterilization
5	Mar 5, 7, 8	Practical 4 – Symbiotic & Food Microbes
6	Mar 12, 14, 15	Project – Identification of Microbes in the Air
7	Mar 19, 21, 22	Project – Identification of Microbes in the Air (cont.)
8	Mar 26, 28, 29	Project – Identification of Microbes in the Air (cont.)
9	Apr 9, 11, 12	Practical 5 – Microbiological Analysis of Food & Water
10	Apr 16, 18, 19	Practical 5 – Microbiological Analysis of Food & Water (cont.)
11	Apr 23, 25, 26	Practical 6 – Viruses
12	Apr 30, May 2, 3	Practical 6 – Viruses (cont.)
13	May 7 May 9	Final Exam Briefing (TBA)

Student Learning Activities:

Performing laboratory experiments & project, observing laboratory demonstrations, attending tutorials, reading course instructive materials, watching course videos, writing laboratory reports & exploring relevant materials from other resources

Student Learning Resources:

Course instructive materials & videos provided by the instructor; references: (1) Textbook for LIFS3060, (2) Forbes B.A. *et al.* “Bailey & Scott's Diagnostic Microbiology” Elsevier-Mosby. 2007, (3) Holt J.G. *et al.* “Bergey's Manual of Determinative Bacteriology” Williams & Wilkins. 1994; library and internet-based resources

Assessment Scheme:

- **Laboratory Reports (40%)**, assessing ILOs 3, 4, 5 & 7
- **Experimental Skills (20%)**, assessing ILOs 2, 3, 5, 6 & 7
- **Final Exam (40%)**, assessing ILOs 1, 3 & 4

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