

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 2502 or 4160
Wed 14:00-16:50	Room 4160
Thu 17:00-17:50	Room 4160

Course Schedule:

<i>Week</i>	<i>Dates</i>	<i>Topics</i>
1	Feb 1, 2	Course Introduction Practical 1 – Culture & Visualization of Microbes
2	Feb 6, 8, 9	Practical 1 – Culture & Visualization of Microbes (Cont.)
3	Feb 13, 15, 16	Practical 2 – Isolation & Characterization of Microbes
4	Feb 20, 22, 23	Practical 2 – Isolation & Characterization of Microbes (cont.)
5	Feb 27, Mar 1, 2	Project – Identification of Unknown Bacteria
6	Mar 6, 8, 9	Project – Identification of Unknown Bacteria (cont.)
7	Mar 13, 15, 16	Practical 3 – Microbiological Analysis of Food & Water
8	Mar 20, 22, 23	Practical 3 – Microbiological Analysis of Food & Water (cont.)
9	Mar 27, 29, 30	Practical 4 – Symbiotic & Food Microbes
10	Apr 3, 5, 6	Practical 5 – Antimicrobials & Sterilization
11	Apr 10, 19, 20	Practical 6 – Viruses
12	Apr 24, 26, 27	Practical 6 – Viruses (cont.)
13	May 4, 8	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, course videos, textbook for LIFS3060, 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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Teaching Assistants: Mr. Yingdong LI, Miss Fenghong LIU, Miss Xiao TANG, Miss Ying WANG, Mr. Xin YANG