

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:

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|-----------------|---------------------|
| Mon 18:00-18:50 | Online or Room 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 6, 8, 9 | Course Introduction, Practical 1 – Culture & Isolation of Microbes |
| 2 | Feb 13, 15, 16 | Practical 1 – Culture & Isolation of Microbes (Cont.) |
| 3 | Feb 20, 22, 23 | Practical 2 – Antimicrobials & Sterilization |
| 4 | Feb 27, Mar 1, 2 | Practical 3 – Visualization of Microbial Cells |
| 5 | Mar 6, 8, 9 | Practical 4 – Identification & Characterization of Microbes |
| 6 | Mar 13, 15, 16 | Practical 4 – Identification & Characterization of Microbes (Cont.) |
| 7 | Mar 20, 22, 23 | Practical 5 – Viruses |
| 8 | Mar 27, 29, 30 | Practical 5 – Viruses (Cont.) |
| 9 | Apr 3, 12, 13 | Project – Briefing & Practical work |
| 10 | Apr 17, 19, 20 | Project – Practical work (Cont.) |
| 11 | Apr 24, 26, 27 | Project – Practical work (Cont.) |
| 12 | May 3, 4 | Project – Practical work (Cont.) |
| 13 | May 8 | Project – Conclusive discussion |

Student Learning Activities:

Performing laboratory practical work, observing laboratory demonstrations, attending briefing sessions, reading course instructive materials, exploring microbiological information from other resources, proposing a microbiological project, writing laboratory reports

Student Learning Resources:

Course instructive materials provided by the instructor, library and internet-based resources, textbook for LIFS3060

Assessment Mode: Pass/Fail

Assessment Tasks: [Failing any one task will result in an F grade in this course]

- Laboratory Work (assessing ILOs 1, 2, 3, 5 & 6)
- Project Proposal Writing (assessing ILOs 1, 3, 4, 5 & 7)
- Report Writing (assessing ILOs 1, 3, 4 & 7) [Failing any report will result in a fail in this task]

Instructor: Dr. Eugene S. C. HUNG (bohsc@ust.hk, x7303, Room 5451)

Technologists: Mr. Yau Ming WONG (bovge@ust.hk, x7325, Room 6217), Miss Mandy C. M. CHAN, Mr. Ka Lun SO, Mr. Francis Wong