Advanced Microbiology (微生物學特論); 2026 Spring

Affiliated Programs

- TIGP-MBAS (AS-NCHU): Elective Core Course; NCHU course code: 8024 (listed under "Special Topics in Microbiology").
- TIGP-BIODIV (AS-NTNU): Elective Course; NTNU course code: DID0003.
- TIGP-MCB (AS-NDMC): Elective Course; NDMC course code: 3024470.
- Plant Pathology and Microbiology (NTU): Elective Course; NTU course code: 633 U1480 PPM5082.

Course Information

- Coordinators
    - TIGP: Chih-Horng Kuo (郭志鴻); chk@gate.sinica.edu.tw; 02-2787-1127.
    - NTU: Li Chang (張立); lichang@ntu.edu.tw; 02-3366-4095.
- Assistant: Jennifer Wu (吳泓欣); mbastigp@gate.sinica.edu.tw; 02-2652-2928.
- Objectives: For students to understand the principles of microbiology research. The first part introduces the general biology of major microorganism groups. The second part covers core concepts and approaches in modern microbiology. The third part focuses on microbial interactions, from molecular mechanisms to ecological dynamics, with selected applied examples.
- This is a 3-credit graduate-level course conducted in English.
- Time: Tuesday 3-6 PM; 2-hour lecture & 1-hour discussion.
    - Generally: (1) key concept of the weekly topic, (2) research of the instructor as in-depth examples, and (3) homework guidelines and Q&A.
- Location: Room A236, Agricultural Biotechnology Building, Academia Sinica. May switch to online if required.
- Evaluation
    - Three homework assignments and one in-class oral presentation (25% each).
    - In the first week, each student selects three instructors for their assignments and one topic for oral presentation. The assignments are due one week after the selected lectures.
    - For homework assignments, each instructor will decide on the format and provide guidelines to the students during the discussion. The typical format is a ~2-5 pages essay on the assigned topic/paper. Other examples include but not limited to: (1) a practice review on one paper/preprint, and (2) a mini-proposal. Instructors should provide written or oral feedback to the students, and email the scores to Chih-Horng Kuo within two weeks after the lecture.
    - Attendance is required but not scored. Students who missed three or more of the lectures will not receive the course credit, unless permission from Chih-Horng Kuo is granted.

Schedule

Week	Date	Topic	Instructor
1	2/24	Bacteria and archaea	Chih-Horng Kuo (郭志鴻) chk@gate.sinica.edu.tw
2	3/03	Oomycetes	Chih-Hang Wu (吳志航) wuchh@gate.sinica.edu.tw
3	3/10	Microalgae	Chuan Ku (顧銓) chuanku@gate.sinica.edu.tw
4	3/17	Viruses	I-Hsuan Wang (王宜萱) ihwang@ibms.sinica.edu.tw
5	3/24	Viral vectors	Li Chang (張立) lichang@ntu.edu.tw
6	3/31	Evolution	Jun-Yi Leu (呂俊毅) jleu@gate.sinica.edu.tw
7	4/07	Fungi	Hiran Anjana Ariyawansa (歐海仁) ariyawansa44@ntu.edu.tw
8	4/14	Bioinformatics and metagenomics	Yu-Wei Wu (吳育瑋) yuwei.wu@tmu.edu.tw
9	4/21	Quantitative biology	Jian-Geng Chiou (邱澗庚) jchiou@gate.sinica.edu.tw
10	4/28	Aquatic microbiology	Shan-Hua Yang (楊姍樺) shanhua@ntu.edu.tw
11	5/05	Symbiosis	Ko-Hsuan Chen (陳可萱) kohsuanchen@gate.sinica.edu.tw
12	5/12	Plant microbiota	Ka-Wai Ma (馬家威) kawaim7@gate.sinica.edu.tw
13	5/19	Plant-fungi interactions	Lay-Sun Ma (馬麗珊) laysunma@gate.sinica.edu.tw
14	5/26	Fungi-bacteria interactions	Phoebe Yu-Ying Hsieh (謝侑穎) yhsieh@as.edu.tw
15	6/02	Bacteria-bacteria interactions	See-Yeun Ting (陳詩允) syting@gate.sinica.edu.tw
16	6/09	In-class presentation	Chih-Horng Kuo (郭志鴻) chk@gate.sinica.edu.tw