

Course	Applied Translational Microbiology
Course No.	01ER436
Credits	3 credits
Grade	1 st Year
Timetable	Spring AB
Instructor	Tang-Long Shen
Course Overview	Example is given as the following with a focus on Cordyceps spp. Participating students will have to attend a field trip involving in collecting indigenous fungi, in particular the fungi infected insects and known to be used in Traditional Chinese medicine (TCM), such as Cordyceps spp. In addition, students will also practice to identify, cultivate and analyze the collected fungi. In this program, bioassays and toxicological test will be conducted to investigate any of their potential usages in medicine and healthy supplement to improve the global health. At last, the protocols for cultivation and fermentation growth in vitro of the Cordyceps spp. will be learned important for future industrialization
Remarks	Conducted in English at National Taiwan University
Course Type	Lecture
Link between Course Objectives and Activities	Students will study the link of food & health and society to study mirco-organisms such as Cordyceps.
Academic Goal	- To be able to explain the biodiversity and in translation usage of the bioresources in Taiwan
Course Schedule	Week 1: Introduction Week 2-4: Field trip Week 5-10: Laboratory identification (including documentation, photography, isolation, culture, and genotyping), Cultivation and fermentation, Chemical analyses, in vitro bioassays (MTT, migration, whitening, ROS, lipolysis, antivirus), Toxicological test, Industrialization.
Course Prerequisites and Advisories	
Grading Philosophy (Percentage/ Criteria/ Methodology)	Participation (50%), Final report (50%)
Self-Directed Learning Other Than Coursework	Read materials introduced in class
Textbooks, References and Supplementary Materials	To be introduced in class
Office Hours	Tang-Long Shen Appointment only
Other (i.e. Expectations on Classroom, Conduct and Decorum etc.)	
Related Courses	
Keywords	Traditional Chinese Medicine, Cordyceps, bioassays,