

2864: Biology & Ecology
<http://www.shokulan.org/Courses/Courses.html>
Wednesday 14:10-17:00
Room: M232

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Credit: 3 hours

Syllabus

Course Summary: Why are there so many different kinds of life forms? How long could we survive without plants? Have humans exceeded earth's ability to support them? This course answers these questions as it reviews general biology and ecology. A special focus is the ecology of Taiwan, its environments, habitats, and life forms.

Tentative Schedule:

Week	Lecture & Discussions
1	Introduction: why are there so many different life forms?
2	Global and local weather (coriolis effect and orthographic uplift)
3	Ecosystems (Holdridge Life Zones)
4	Energy & nutrients
5	Why are plants so important? (photosynthesis)
6	Trophic levels & food webs
7	Growth (mitosis) & reproduction (meiosis)
8	Life history strategies
9	Midterm Exam
10	Evolution
11	Adaptation
12	Population growth
13	Extinction
14	Conservation
15	Predation, Mutualism, & Parasites
16	Proximate and ultimate causes of Climate Change
17	Project Presentations
18	Final Exam

Frequently check class website for notes, links, and deadlines.

Daily Quiz: A quiz is given at the beginning of each class. Quiz also records attendance. Tardy or absent students may not take the quiz.

Exams: Two cumulative exams: midterm and final.

Exams & quizzes cover:
 lectures & blackboard
 Textbook & class website
 power point slides
 handouts & movies
 Projects & assignments
 previous tests & quizzes

Species description: Each student must select a species to research and write a description suitable for uploading to an online database

Observation Project: You and your group will identify a study site inside Tunghai. After getting my approval for this study site, you will visit your study site throughout the semester. You should make a minimum of two visits each week. One visit should always be on the same day at the same time. The second visit should be at random times on random days. For each visit, you will keep a log of observations. Logs will include photographs, species lists, population sizes and densities, and notes on phenology, weather conditions, animal activity, and human activity. Logs are due 3 times during the semester. At the end of the semester, you and your group present your findings to the class in a 5-minute talk.

Outdoor Labs: You will join a group lead by a student in 2877 Field Methods in Sustainability. In pairs, you will monitor traps. These traps must be checked daily, but you will be assigned certain dates. Other than insects, no animal should die. If you find a dead animal, the group responsible for the previous day will be penalized. If the group the day after you finds a dead animal, you will be penalized. All traps must be checked before 9 am.

Textbook: Bridgman, C.L. 2012. Introducing Taiwan's Ecology. China Medical University. Taichung. Taiwan.
 <<http://www.shokulan.org/Courses/Eco/Bridgman2012IntroducingTaiwanEcology.pdf>>

Grading: Grades are based on species description (25%); group projects (25%); midterm exam (10%); cumulative final exam (30%); and in-class activities, attendance, and quizzes (10%).

Course Policy:

- 1) In advance, tell me of problems meeting deadlines and assignments.
- 2) Assignments lose 20% for each week late.
- 3) Do your own work. Do not copy! Do not use computer translations!
- 4) You must cite your sources. You must give exact links for anything from the internet.
- 5) Copying is penalized by failure of the assignment (grade = 0%).
- 6) Academic fraud (including faking data) is penalized by failure of the group project.