

科目ナンバリング		U-LAS14 20052 LE68									
授業科目名 <英訳>		Introductory Plant Ecology-E2 Introductory Plant Ecology-E2				担当者所属 職名・氏名		農学研究科 准教授 HSIANG Tzu-Fan			
群	自然科学科目群			分野(分類)	生物学(各論)			使用言語	英語		
旧群	B群	単位数	2単位	週コマ数	1コマ	授業形態	講義（対面授業科目）				
開講年度・ 開講期	2025・前期		曜時限	水3		配当学年	主として1・2年生	対象学生	理系向		
【授業の概要・目的】											
<p>Plant ecology is fundamental to agriculture, conservation, and climate change research. This course explores key ecological principles, focusing on how light, water, nutrients, and disturbances shape plant distribution and adaptation.</p> <p>Emphasizing real-world applications, students will examine crop responses to climate change, plant-microbe interactions in soil, and the impact of invasive species on agriculture. Modern tools, including genomics and ecological modeling, will be introduced to understand plant-environment interactions and support sustainable land management.</p> <p>By the end of the course, students will be able to apply ecological concepts to challenges in sustainable agriculture, biodiversity conservation, and ecosystem resilience.</p>											
【到達目標】											
<p>Upon successful completion of this course, students will be able to:</p> <ol style="list-style-type: none"> <li>1. Explain the key ecological processes that shape plant distribution, abundance, and adaptation, with a focus on agricultural and natural ecosystems.</li> <li>2. Discuss plant-environment interactions, including crop responses to climate change, plant-microbe relationships, and the ecological role of invasive species.</li> <li>3. Apply ecological principles to discuss issues of sustainable agriculture, biodiversity conservation, and ecosystem resilience.</li> </ol>											
【授業計画と内容】											
<p>Course Schedule</p> <ol style="list-style-type: none"> <li>1. Introduction to Plant Ecology</li> <li>2. Light and Plant Growth</li> <li>3. Water Relations and Drought Adaptation</li> <li>4. Soils, Nutrients, and Microbial Interactions</li> <li>5. Evolutionary Processes and Ecological Adaptation</li> <li>6. Population Structure and Dynamics</li> <li>7. Growth, Reproduction, and Flowering Regulation</li> <li>8. Community Structure and Ecosystem Function</li> <li>9. Competition, Resource Allocation, and Invasive Species</li> <li>10. Plant-Pathogen and Herbivore Interactions</li> <li>11. Disturbance, Fire, and Agricultural Resilience</li> <li>12. Succession and Land Use Change</li> <li>13. Landscape Ecology and Agricultural Land Management</li> <li>14. Global Change and Plant Responses</li> </ol> <p>Final Exam</p> <ol style="list-style-type: none"> <li>15. Feedback</li> </ol>											
----- Introductory Plant Ecology-E2(2)へ続く -----											

## Introductory Plant Ecology-E2(2)

### 【履修要件】

特になし

### 【成績評価の方法・観点】

Grading: Pre-class submission of questions related to listening exercise (20%), writing exercises based on assigned pre-class reading materials (30%), in-class group presentation (20%) on a topic in the field of plant ecology, and an end of term exam (30%).

### 【教科書】

使用しない

### 【参考書等】

（参考書）

Handouts will be given out in class, as well as emailed to the students.

### 【授業外学修（予習・復習）等】

Students should read or listen to the required pre-class materials and submit any required assignment before the class, and come to class ready to participate in class activities. Typically, this will entail listening to a short video or podcast (10 min. or less), as well as reading a 2 or 3 page handout and be prepared to write answers to 1 or 2 questions about the reading material in the following class (15 to 20 minutes provided in class).

### 【その他（オフィスアワー等）】

Open door policy during office hours, and anytime by email.