科號	10410LS312100	學分	3	修課限制	
上課時間	M3M4W2	教室	生科二 105		
科目中文名稱	植物生理學				
科目英文名稱	Plant Physiology				
任課教師	劉姿吟				

Objective	1. To help students understand the basics of anatomical structures, cellular activities, and life processes of plants based on the complete life cycle of flowering plants from germination to senescence. 2. This course emphasizes how-we-know-what-we-know of plant physiology and is aimed to cultivate the ability to appreciate and explore the mechanism underlying plant growth and development. 3. To provide a broad framework for the students who are interested in pursuing advanced study in Plant Science.
Textbook	Hopkins W. G. and Hüner N. P. A. (2009) Introduction to Plant Physiology. 4th ed. John Wiley and Sons, Inc. 代理:歐亞書局 EURASIA BOOK CO.
References	1. Taiz L., Zeiger E., Møller I. M., Angus M., (2015) Plant Physiology and Development. 6th ed. Sinauer Associates, Inc. 2. Jane B Reece, Lisa A Urry, Michael L Cain, Steven A Wasserman, Peter V Minorsky, Robert B Jackson. (2013) Campbell Biology. 10 ed. Benjamin Cummings, Inc.
Evaluation	In-class quiz-based discussion and presentation: 40%; Midterm exam: 30%; Final exam: 30%
Syllabus	**Unit I: Plant Cell, Movement of Water and Nutrients** 1. Plant Cell Wall: Structure, Biogenesis, and Expansion 2. Plant Water Relations at the Cell and the Whole-Plant Level 3. Roots, Soils, and Nutrient Uptake 4. Solutes Transport and Mineral Nutrition ***Quiz-based Presentation/Discussion*** **Unit II: Photosynthesis** 5. Photosynthesis: Harvesting Sunlight 6. Photosynthesis: CO_2 Assimilation 7. Allocation, Translocation and Partitioning of Photoassimilates 8. Cellular Respiration: Unlocking the Energy Stored in Photoassimilates 9. Nitrogen Assimilation and Secondary Metabolites ***Quiz-based Presentation/Discussion***
	Midterm Exam
	Unit III: Plant Development 10. Seed Germination and Seedling Establishment 11. Responding to Light: Photoreceptors and Phototropism 12. Measuring the Time: Photoperiodism and Circadian Clock 13. Flowering and Fruit Development

	14. Plant Senescence and Cell Death ***Quiz-based Presentation/Discussion*** **Unit IV: Plant Responses to Plant Hormones and Environments** 15. Plant Hormones (I): Auxin, Gibberellins and Cytokinins 16. Plant Hormones (II): Abscisic Acid, Ethylene and Bassinosteroids 17. Plant Hormones (III): Jasmonic Acid, Salicylic Acid, and Strigolactones 18. Abiotic Stress Physiology 19. Biotic Stress Physiology ***Quiz-based Presentation/Discussion***
	Final Exam

Attendance policy:

You are expected to attend, and participate in, all classes. If you sleep in class or fail to participate, you will be counted as absent. **If you miss more than five classes, you will fail the course.** If you are late for classes twice, this will count as one absence. Please present a written excuse or proof for your absence.

Evaluation and grading policy:

- Four times of quiz-based in-class discussions/presentation (40%, 10% for each)
- Midterm in-class exam (open book and notes; 30%)
- Final in-class exam (open book and notes; 30%)
- **Absence will lower your final course grade by three percentage points per absence.**