

課程流水號 Serial Number	24018
課號 Course Number	LS5015
班次 Class	*
科目名稱(中文) Course Title(in Chinese)	植物訊息傳遞特論
科目名稱(外文) Course Title(In English or other languages)	Advanced in Plant Signal Transduction
授課老師(中文) Instructor(in Chinese)	陸重安
授課老師(外文) Instructor(In English or other languages)	Chung-An Lu
辦公時間(中文) Office Hour(in Chinese)	星期四; 9 and A
辦公時間(外文) Office Hour(In English or other languages)	星期四; 9 and A
課程目標(中文) Course Objective(in Chinese)	The concepts and methods in signal transduction
課程目標(外文) Course Objective(In English or other languages)	The concepts and methods in signal transduction
授課內容(中文) Course Description(in Chinese)	<p>The concepts and methods in signal transduction</p> <ol style="list-style-type: none"> 1. Characteristics of a signal transduction pathway 2. Three general pathways of information flow to the nucleus 3. Study and dissection of signaling mechanisms <ol style="list-style-type: none"> a. Pharmacological approaches b. Approaches based on physical interactions between signaling components. c. Genetic approaches d. Microarray data create enormous datasets. Simple two-dimensional models for linear pathways work well, but networks are more complex. 4. Specific topic of plant signal transduction <ol style="list-style-type: none"> A. Salt stress B. Drought stress
授課內容(外文) Course Description(In English or other languages)	<p>The concepts and methods in signal transduction</p> <ol style="list-style-type: none"> 1. Characteristics of a signal transduction pathway 2. Three general pathways of information flow to the nucleus 3. Study and dissection of signaling mechanisms <ol style="list-style-type: none"> a. Pharmacological approaches b. Approaches based on physical interactions

	<p>between signaling components.</p> <p>c. Genetic approaches</p> <p>d. Microarray data create enormous datasets. Simple two-dimensional models for linear pathways work well, but networks are more complex.</p> <p>4. Specific topic of plant signal transduction</p> <p>A. Salt stress</p> <p>B. Drought stress</p>
教科書/參考書(中文) Textbook/References(in Chinese)	植物生物期刊
教科書/參考書(外文) Textbook/References(In English or other languages)	Plant Biology Journal
自編教材比例 Self-compiled Textbook/References Proportion	
授課方式 Requirements	講授Lecture 研討Seminar 個別指導Individual Discussion
評量配分比重(中文) Grading(in Chinese)	口頭報告50%與課堂表現50%
評量配分比重(外文) Grading(In English or other languages)	口頭報告50%與課堂表現50%
課程所屬學制 Educational System	博士班(Doctoral Programme)
課程領域 Course Domain	進階學科 生物科技
跨系課程領域 Cross Department Course Domain	

系所核心能力 Core Competencies of Department	強度指數 Overall Rating	0	1	2	3	4	5	評量方式 Corresponding Assessments
	不具備 Zero	非常低 Very Low	低 Low	普通 Medium	高 High	非常高 Very High		

系所核心能力 Core Competencies of Department	強度指數 Overall Rating						評量方式 Corresponding Assessments
	0 不具 備 Zero	1 非常 低 Very Low	2 低 Low	3 普通 Medium	4 高 High	5 非常 高 Very High	
高等生物專業知識 Advanced Biological Sciences	●	●	●	●	●	●	<input type="checkbox"/> 紙筆測驗/會考 (Test/Exam) <input type="checkbox"/> 作業練習(Assignments) <input checked="" type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam) <input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper)) <input type="checkbox"/> 實作/實驗 (Practices/Experiments) <input checked="" type="checkbox"/> 出席/課堂表現 (Attendance/Performance) <input type="checkbox"/> 學習檔案評量(Portfolios Assessment) <input type="checkbox"/> 自我評量/同儕互評(Self Assessment/ Peer Assessment) <input type="checkbox"/> 作品/創作展演 (Products/Creative Performance) <input type="checkbox"/> 其他(Others) <input type="checkbox"/> 無(No assessment)
創新及整合研究 Innovative and integrative research	●	●	●	●	●	●	<input type="checkbox"/> 紙筆測驗/會考 (Test/Exam) <input type="checkbox"/> 作業練習(Assignments) <input checked="" type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam) <input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper)) <input type="checkbox"/> 實作/實驗 (Practices/Experiments) <input checked="" type="checkbox"/> 出席/課堂表現 (Attendance/Performance) <input type="checkbox"/> 學習檔案評量(Portfolios Assessment) <input type="checkbox"/> 自我評量/同儕互評(Self Assessment/ Peer Assessment) <input type="checkbox"/> 作品/創作展演 (Products/Creative Performance) <input type="checkbox"/> 其他(Others) <input type="checkbox"/> 無(No assessment)

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	0 不具 備 Zero	1 非常 低 Very Low	2 低 Low	3 普通 Medium	4 高 High	5 非常 高 Very High	
專業寫作與表達 Professional writing and presentation	●	●	●	●	●	●	<input type="checkbox"/> 紙筆測驗/會考 (Test/Exam) <input type="checkbox"/> 作業練習(Assignments) <input checked="" type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam) <input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper)) <input type="checkbox"/> 實作/實驗 (Practices/Experiments) <input checked="" type="checkbox"/> 出席/課堂表現 (Attendance/Performance) <input type="checkbox"/> 學習檔案評量(Portfolios Assessment) <input type="checkbox"/> 自我評量/同儕互評(Self Assessment/ Peer Assessment) <input type="checkbox"/> 作品/創作展演 (Products/Creative Performance) <input type="checkbox"/> 其他(Others) <input type="checkbox"/> 無(No assessment)
國際觀 International vision	●	●	●	●	●	●	<input type="checkbox"/> 紙筆測驗/會考 (Test/Exam) <input type="checkbox"/> 作業練習(Assignments) <input checked="" type="checkbox"/> 口頭報告/口試 (Presentation/Oral Exam) <input type="checkbox"/> 專題研究報告(書面) (Research Report(printed on paper)) <input type="checkbox"/> 實作/實驗 (Practices/Experiments) <input checked="" type="checkbox"/> 出席/課堂表現 (Attendance/Performance) <input type="checkbox"/> 學習檔案評量(Portfolios Assessment) <input type="checkbox"/> 自我評量/同儕互評(Self Assessment/ Peer Assessment) <input type="checkbox"/> 作品/創作展演 (Products/Creative Performance) <input type="checkbox"/> 其他(Others) <input type="checkbox"/> 無(No assessment)

