

長庚大學生物科技產業碩士學位學程必選修科目表（一〇七學年度入學適用）

Chang Gung University, Master Program in Biotechnology Industry

Curriculum for MS Program (2018~2019)

必選修 Required / Elective	科目名稱 Course Title	學分 Credit	開課年級 Year	上學期 Fall	下學期 Spring	備註 Note
先修 Prerequisites Courses	普通生物學 General Biology	3				不列入畢業學分 Excluded from core credit
	普通生物學實驗 General Biology Laboratory	1				不列入畢業學分 Excluded from core credit
	生物化學 Biochemistry	3				不列入畢業學分 Excluded from core credit
	生物化學實驗/ 生命科學實驗/分子生物學實驗 Biochemistry Laboratory / Life Science Laboratory / Molecular Biology Laboratory	1				不列入畢業學分 Excluded from core credit
必修 Required Courses	書報討論 Seminar	2	1	1	1	必修四學分，修滿二學分且提前通過學位考試者得免修，仍需補足畢業學分。 Required courses for a total of 4 Credits. A minimum 2 Credits are required for students who are awarded a MS degree in less than 2 years. All students need to fulfill total graduation credit units.
	書報討論 Seminar	2	2	1	1	
	產業研發實務 Industrial R&D	2	1	1	1	必修四學分，碩博合開。 Required courses for a total of 4 Credits.
	產業研發實務 Industrial R&D	2	2	1	1	Offered jointly by PhD and Master program.
	生技產業新知論壇 BioBusiness Awakening Forum	2	1	1	1	碩博合開 Offered jointly by PhD and Master program.
	生技製藥研發 Biopharmaceutical Development	2	1	2		碩博合開 Offered jointly by PhD and Master program.
	生技產業實習 Biotechnology Practicum	4	2	4		暑期開課 Summer Course
	碩士論文 Master's Thesis	6				
生醫領域 選修 Elective courses in Biomedical Field	生技智慧財產權 Intellectual Properties in Biomedical Industry	2	1	2		
	生技法規及 cGMP 優良製造規範 Biotechnology Regulations and cGMP Guidelines	1	1	1		
	生物資訊學 Bioinformatics	2	1	2		

高等生物技術學 Advanced Biotechnology	2	1	2		
高級生物統計學 Advanced Biostatistics	2	1	2		
生物分子分離純化技術 Techniques of isolation and purification for biomolecules	2	1	2		
醫學檢驗新知特論 Advances in Laboratory Medicine	2	1	2		
奈米生物技術之醫學應用 Applications of Nanobiotechnonlgy in Medicine	2	1	2		英文授課 English as Medium of Instruction
應用免疫技術實驗 Immunological Techniques Laboratory	2	1	2		
應用於人類疾病研究之最新生物技術 Recent advances in Biotechnology Applied in human Diseases	1	1	1		
分子檢驗技術新知 The Frontiers in Molecular Diagnostics Technology	1	1	1		
尖端生物技術實驗-分子細胞學 Advanced Biotechnology Laboratory-Molecular Cell Biology	2	1	2		暑期開課 Summer Course
現代生物技術及分子診斷實驗 The Frontier of Biotechnology in Molecular Diagnosis Laboratory	2	1	2		暑期開課 Summer Course
人類遺傳疾病之分子診斷實驗(隔) Laboratory of Molecular Diagnosis of Human Genetic Disorders	1	1	1		暑期開課，偶數學年度開課 Summer Course, Offered Bi-annually
流式細胞儀分析技術實驗(隔) Lab of Flow Cytometric Technology	1	1	1		暑期開課，偶數學年度開課 Summer Course, Offered Bi-annually
基礎胚胎幹細胞培養實驗(隔) Embryonic Stem Cell Culture Techniques Laboratory	1	1	1		暑期開課，偶數學年度開課 Summer Course, Offered Bi-annually
感染症疾病檢測技術(隔) Infection Diseases Detection Technologies	1	1	1		奇數學年度開課 Offered Bi-annually
生技產業實習 (1) Biotechnology Practicum (1)	3	1	3		
生技產業導論 Introduction to Biomedical Industry	2	1		2	
三創(創、創意、創業)課程 Innovation, creativity and entrepreneurship courses	2	1		2	

	疫苗發展的生物學基礎(隔) Biologic basis of vaccine development	2	1		2	奇數學年度開課 Offered Bi-annually
	科學研究方法 Scientific Methods	2	1		2	
	幹細胞生物學 Stem Cell Biology	2	1		2	
	高等級生物安全實驗室設計及操作 Specific topics of Biosecurity Practice for High Security Level Labs	2	1		2	
	創新產品設計與開發 Innovative Product Design and Development	3	2	3		
	生技健康產業經營策略 Business strategy for the biotech and health industries	2	2	2		
	生技健康產業財務管理 Financial Management of Biotech and Health Industry	2	2		2	
管理領域 選修 Elective Courses in Management Field	企業經營(1) Contemporary Business (I)	3	1	3		英文授課 English as Medium of Instruction
	企業倫理 Business Ethics	3	1	3		英文授課 English as Medium of Instruction
	顧客關係管理與商業智慧 Customer Relationship Management and Business Intelligence	3	1	3		英文授課 English as Medium of Instruction
	成本會計 Cost Accounting	3	1	3		英文授課 English as Medium of Instruction
	應用統計 Applied Statistics	3	1	3		英文授課 English as Medium of Instruction
	企業經營(2) Contemporary Business (II)	3	1		3	英文授課 English as Medium of Instruction
	策略管理 Strategic Management	3	1		3	英文授課 English as Medium of Instruction
	管理個案研討 Business Case Study	2	1		2	英文授課 English as Medium of Instruction
	科技管理 Technology Management	3	1		3	英文授課 English as Medium of Instruction

管理經濟 Managerial Economics	3	1		3	英文授課 English as Medium of Instruction
數位行銷 Digital Marketing	3	1		3	英文授課 English as Medium of Instruction
企業分析與公司評價 Business Analysis and Valuation	3	1		3	英文授課 English as Medium of Instruction
供應鏈管理 Supply Chain Management	3	1		3	英文授課 English as Medium of Instruction
策略性人力資源管理 Strategic Human Resource Management	3	1		3	英文授課 English as Medium of Instruction
數位時代之品牌經營 Branding Management in the Digital Age	3	2	3		英文授課 English as Medium of Instruction
大數據應用與電子商務 Big Data Application and Electronic Commerce	3	2	3		英文授課 English as Medium of Instruction
企業營運分析 Business Operations Analysis	3	2	3		英文授課 English as Medium of Instruction

註：

- 1、本碩士學程畢業學分數需達 36 學分，含必修 16 學分，選修 14 學分，及碩士論文 6 學分。

Students pursuing a Master degree must fulfill a minimum 36 Credits, including 16 Credits of required courses, 14 Credits of elective courses, and 6 Credits of Master's Thesis.

- 2、學程先修基礎課程(普通生物學 3 學分，普通生物學實驗 1 學分，生物化學 3 學分，生物化學實驗、生命科學實驗或分子生物學實驗 1 學分)，此基礎課程不列入畢業學分，若曾修讀過大學部或研究所之相關課程且成績及格者，得申請免修。

Prerequisites are required for students pursuing this master program (General Biology 3 Credits, General Biology Laboratory 1 Credits, Biochemistry 3 Credits, Biochemistry Laboratory / Life Science Laboratory / Molecular Biology Laboratory 1 Credits), while these prerequisites are excluded from core credits. Prerequisites are exempted for students who have completed and passed the related courses during undergraduate or postgraduate degree.

- 3、本學程選修科目可依研究或實務需要，經指導教授同意，選擇本校研究所課程（未列於必選修課目表者）作為本學程選修學分，但以學程要求選修學分之二分之一（含）為限。

With the consent of the advisor, students may also take courses offered by other graduate institutes in CGU to meet the credit requirement for graduation; only the total credits earned from other institutes cannot exceed 50% of the total elective credits for graduation.

- 4、學生所選欲修習之科目，需經過指導教授之簽名同意。

Course selection and registration should be approved and signed by the thesis mentor.