

長庚大學生物科技產業碩士學位學程必選修科目表（一一三學年度入學適用）

Chang Gung University, Master Program in Biotechnology Industry

Curriculum for MS Program (2024~2025 )

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
必修 Required Courses	書報討論 Seminar	2	1	1	1	必修四學分 Required courses for a total of 4 Credits.
	書報討論 Seminar	2	2	1	1	
	生技製藥研發 Biopharmaceutical Development	2	1	2		碩博合開 Offered jointly by PhD and Master program.
	產業研發實務 Industrial R&D	1	1		1	必修二學分，碩博合開 Required courses for a total of 2 Credits. Offered jointly by PhD and Master program.
	產業研發實務 Industrial R&D	1	2		1	
	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				
生技原理領 域選修 Elective courses in Principle Applications in Biotechnolog y	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		醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science
	生物資訊學 Bioinformatics	2	1	2		生醫所合開 Offered jointly by Graduate Institute of Biomedical Sciences
	高級生物統計學 Advanced Biostatistics	2	1	2		生醫所合開 Offered jointly by Graduate Institute of Biomedical Sciences
	醫學檢驗新知特論 Advances in Laboratory Medicine	2	1	2		醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science
	智慧型控制系統 Intelligent Control Systems	3	1	3		英文授課 English as Medium of Instruction 機械碩合開 Offered jointly by Department of Mechanical Engineering
	神經網路與深度學習 Neural Networks and Deep Learning	3	1	3		英文授課 English as Medium of Instruction 機械博開 Offered jointly by Department of Mechanical Engineering

	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.
	科學研究方法 Scientific Methods	2	1		2	生醫所合開 Offered jointly by Graduate Institute of Biomedical Sciences
	幹細胞生物學 Stem Cell Biology	2	1		2	醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science
生技實務領域選修 Elective courses in Practical Applications in Biotechnology	生技產業創新市場 BioBusiness Creative Market	1	1	1		碩博合開 Offered jointly by PhD and Master program.
	高等生物技術學 Advanced Biotechnology	2	1	2		醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science
	奈米生物技術之醫學應用 Applications of Nanobiotechnonlgy in Medicine	2	1	2		生醫所合開 Offered jointly by Graduate Institute of Biomedical Sciences
	應用免疫技術實驗 Immunological Techniques Laboratory	1	1	1		醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science
	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		英文授課 English as Medium of Instruction 醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science
	分子檢驗技術新知 The Frontiers in Molecular Diagnostics Technology	1	1	1		醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science
	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 生醫所合開 Offered jointly by Graduate Institute of Biomedical Sciences
	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 生醫所合開 Offered jointly by Graduate Institute of Biomedical Sciences

人類遺傳疾病之分子診斷實驗 Laboratory of Molecular Diagnosis of Human Genetic Disorders	1	1	1	暑期開課 Summer Course 醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science 偶數學年度開課 Offered Bi-annually
流式細胞儀分析技術實驗 Lab of Flow Cytometric Technology	1	1	1	暑期開課 Summer Course 醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science 偶數學年度開課 Offered Bi-annually
基礎胚胎幹細胞培養實驗 Embryonic Stem Cell Culture Techniques Laboratory	1	1	1	暑期開課 Summer Course 醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science 奇數學年度開課 Offered Bi-annually
感染症疾病檢測技術實驗 Laboratory Technologies for Infectious Disease Detection	1	1	1	醫技碩合開 Offered jointly by Department of Medical Biotechnology and Laboratory Science 奇數學年度開課 Offered Bi-annually
三創（創新、創意、創業）課程 Innovation, creativity and entrepreneurship courses	2	1	2	
生物製藥檢測實作 Laboratory Technologies for Infectious Disease Detection	2	1	2	暑期開課 Summer Course
創新創業範例研究和實務 Innovation and entrepreneurship: case studies and practice	2	1	2	
生物光學感測 Optical Biosensing	2	1	2	
人類、動物和環境的共同健康概論 One Health: human, animal, and environmental health	2	1	2	英文授課 English as Medium of Instruction 碩博合開 Offered jointly by PhD and Master program.
生物製藥檢測 Biopharmaceutical Testing	2	1		2

專案計畫與專利撰寫 Project plan and patent writing	2	1		2	碩博合開 Offered jointly by PhD and Master program. 奇數學年度開課 Offered Bi-annually
生技產業分析與公司評價 Biotechnology industrial analysis and corporate valuation	2	1		2	碩博合開 Offered jointly by PhD and Master program. 偶數學年度開課 Offered Bi-annually
生醫創新創業-成為創業家的知識和步驟 Knowledge and steps to become an entrepreneur in the bio-industrial	2	1		2	英文授課 English as Medium of Instruction 碩博合開 Offered jointly by PhD and Master program.
生技健康產業經營策略 Business strategy for the biotech and health industries	2	2	2		健康產碩合開 Offered jointly by Master Degree Program in Health and Long-term Care Industry.
生技健康產業財務管理 Financial Management of Biotech and Health Industry	2	2		2	偶數學年度開課 Offered Bi-annually

Note :

1. 畢業學分：34 學分。

Core total: 34 Credits.

(1) 必修 12 學分。

Required courses: 12 Credits

(2) 選修 16 學分。

Elective courses: 16 Credits

(3) 論文 6 學分(學位考試通過後給予)。

Master Thesis: 6 Credits (given after passing the final defense)

2. 須達英文畢業門檻方可畢業：

Students have to take one of the following English proficiency test and meet its respective requirement before graduation:

(1) 全民英檢中高級初試及格。

Pass the High-Intermediate Test of GEPT.

(2) 托福 500 分(含)以上。

TOEFL score of 500 and above.

(3) 網路托福 61 分(含)以上。

iBT TOEFL score of 61 and above.

(4) 外語能力測驗 (FLPT-English) 平均成績 65 分(含)以上。

FLPT-English with an average score of 65 and above.

(5) IELTS 5 級(含)以上。

IELTS 5 and above.

(6) 多益測驗 (TOEIC) 600 分(含)以上。

TOEIC score of 600 and above.

(7) 劍橋領思英語檢測(Linguaskill)145 分(含)以上。

Linguaskill score of 145 and above.

(8) 其他同等級之國際通用英檢能力測驗(須自備考試相關文件)。

Other equivalent international English proficiency tests (relevant examination documents must be provided).

- (9) Englishscore (British council) 的 Coreskill 測驗達 B2 level(TEOIC : 785 , EnglishScore : 400) 。

English score B2 level.

- (10) 參加本校自辦之校內英檢考試，通過校內英檢標準。

Participate in the internal English proficiency test organized by the school and meet the internal test standards.

- (11) 修習一學期之英文補救教學「英文工作坊」課程，取得及格成績。

Complete one semester of the remedial English course "English Workshop" and achieve a passing grade.

- (12) 英語畢業資格需於第二階段學位考試申請前，持通過證明繳交至學程辦公室審核。

Students should submit the score report to program office for the review of English requirement for graduation before applying the second stage of degree examination.

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.