

長庚大學生物醫學研究所碩士班必選修科目表 (114 學年度入學學生適用) 2025.04 修訂

Master Curriculum for Graduate Institute Of Biomedical Sciences,
Chang Gung University (For students admitted in Fall, 2025)

一、畢業學分數需達 24 學分(不含論文 6 學分) Minimum Graduation Credits for Master Program: 24 credits (excluding 6 credits for dissertation)

組別	生化暨細胞分子生物學組	微生物暨免疫學組	生理暨藥理學組	多體資智運組	國際學生組
必修	11+4	8+4	10+4	8+4	4+4
選修	9	12	10	12	16

本所認可生物醫學研究所博士班、臨床醫學研究所臨床醫學組碩、博士班及中醫學系天然藥物碩士班、醫學生物技術暨檢驗學系碩士班、新興病毒暨分子醫學國際碩士學位學程等課程，皆可列為選修學分。

Division	Biochemistry & Cellular Molecular Biology	Microbiology & Immunology	Physiology & Pharmacology	Multi-Omics Informatics & Intelligence Computing	International Division of Medical Research
Required	11+4	8+4	10+4	8+4	4+4
Elective	9	12	10	12	16

Courses offered by the PhD Program of the Institute of Biomedical Sciences, the Master's and PhD Programs of the Clinical Medicine Division in the Institute of Clinical Medicine, the Master's Program in the Natural Products of the Department of Chinese Medicine, the Master's Program of Medical Biotechnology and Laboratory Science, and the International Master's Program of Emerging Viruses and Molecular Medicine are all approved as eligible elective credits."

二、“碩士論文”(6 學分) 於通過學位考試並繳交通過審核論文後給予。

The "Master Thesis" (6 credits) will be granted after passing the degree examination and submitting the approved dissertation.

三、畢業要求資訊請見當年度學生手冊。

For detailed graduation requirements, refer to the student handbook of the corresponding academic year.

領域／組別		必修(R) / 選修(E)	科目代號	科目名稱	學分	開課年級	上學期	下學期	備註
共同必修 General Required Courses		R	BMM013	書報討論 Seminar	4	1~2	√		一～二年級必修四學分(1 學分/學期)，修滿二學分且提前通過學位考試者、學碩學生修滿兩學分者得免修，仍需補足畢業學分。 Students are required to complete 4 compulsory credits (1 credit per semester). Students who have completed 2 credits and passed the degree examination early, and those enrolled in the integrated Bachelor's-Master's program who have completed 2 credits, may be exempted from the remaining credits. However, they must fulfill the total number of credits required for graduation.
		R		研究架構設計 Research proposal	2	1	√	√	完成口試後選課；每學期開設，但僅需選課一次。 Course enrollment should be completed after the oral examination. The course is offered every semester; students are only required to enroll once.
		R		研究進程報告 Research progress report	2	1	√	√	完成口試後選課；每學期開設，但僅需選課一次。 Course enrollment should be completed after the oral examination. The course is offered every semester; students are only required to enroll once.
必修	生化暨細胞 分生學組	R	BMM401	高等生化學 Advanced Biochemistry	3	1	√		二選一 Select one of two.
		R	BMM425	細胞生物學 Cell Biology	3	1	√		

選修	Biochemistry & Cellular Molecular Biology	R	BMM601	分子生物學 Molecular Biology	4	1	√	
	微生物暨免疫學組 Microbiology & Immunology	R	BMD601	微生物學-細菌學 Microbiology-Bacteriology	2	1	√*	1 由左列四門科目中任選兩門計四學分作為必修學分。 2.細菌學於上學期開設中文、英文各一班。病毒學上學期開設英文班，下學期開設中文班。 1. Students must select any two of the four courses listed on the left, totaling 4 credits, to fulfill the compulsory credit requirement. 2. <i>Bacteriology</i> is offered in the first semester with one class conducted in Chinese and one in English. <i>Virology</i> is offered in English during the first semester and in Chinese during the second semester."
		R	BMD603	微生物學-寄生蟲學 Microbiology-Parasitology	2	1	√*	
		R	BMD602	微生物學-病毒學 Microbiology-Virology	2	1	√*	
		R	BMD605	免疫學 Immunology	2	1	√	
	生理暨藥理學組 Physiology & Pharmacology	R		細胞生理暨分子藥理學(一) Cellular Physiology and Molecular Pharmacology(I)	3	1	√	擬於碩士在學期間修習本校博士班「藥理學(4學分)」與「生理學(4學分)」者可免修本課程；醫學系學碩課程生得免修，且需補足畢業學分數。 Students who plan to take the doctoral courses "Pharmacology (4 credits)" and "Physiology (4 credits)" at this university during their master's studies may be exempt from this course. Medical students in the master's program are also exempt but must fulfill the required graduation credits.
		R		細胞生理暨分子藥理學(二) Cellular Physiology and Molecular Pharmacology(II)	3	1	√	
	多體學資訊暨智慧運算學組 Multi-Omics Informatics & Intelligence Computing	R	BMD501	多體學生物醫學研究特論(*) Special Topics in Multi-Omic Perspective of Biomedical Study(*)	2	1	√	√*
		R	BMD502	計算生物學 Computational Biology	2	1	√	
		R	BMD246	高級生物統計學(*) Advanced Biostatistics(*)	2	1	√	
		R	BMD503	精準醫療與分子檢測產業 Precision Medicine and Molecular Diagnostic Industry	2	1		√
	生化暨細胞分生學組 Biochemistry & Cellular Molecular Biology	E	BMM451	腫瘤生物學及癌症治療 Cancer Biology and Cancer Therapy	2	1	√	
		E	BMM462	表觀遺傳學 Epigenetics: Chromatin and Gene Regulation	2	1	√	
		E	BMM455	分子細胞生物學特論 Special Topics in Molecular and Cellular Biology	2	1		√
		E	BMM480	果蠅模型應用於人類疾病研究特論 Drosophila Model and Human Diseases	2	1		√
	微生物暨免疫學組 Microbiology & Immunology	E	BMM476	應用免疫技術 Immunological Techniques	1	1	√	與生技所合開 Offered jointly with the Graduate Institute of Medical Biotechnology and Laboratory Science
		E	BMM477	應用免疫技術實驗 Immunological Techniques Laboratory	1	1	√	與生技所合開 Offered jointly with the Graduate Institute of Medical Biotechnology and Laboratory Science
		E	BMM487	分離科學 Separation Science	2	1	√	

生理暨藥理學組 Physiology & Pharmacology	E	BMM517	螢光顯微影像之生物應用 Biomedical Applications of Fluorescence Imaging Microscopy	2	1	√	暑期上課，上限 60 人 Summer lecture course, limited to 60 participants.
	E	BMM520	螢光顯微影像之生物應用實驗 Biomedical Application of Fluorescence Imaging Microscopy	1	1	√	暑期上課，上限 20 人 Summer practical course, limited to 20 participants.
	E	BMM814	奈米生物技術之醫學應用 Applications of Nanobiotechnology in Medicine	2	1	√	與生技系碩士班、生物科技產業碩士學程、化材系碩士班及醫工所碩士班合開 Offered jointly with the Master's Programs of the Department of Biotechnology, the Master Program in Biotechnology Industry, the Department of Chemical and Materials Engineering, and the Graduate Institute of Biomedical Engineering.
	E	BMM481	老化研究特論 Special Topics in Aging Research	2	1	√	
	E	BMM486	模式動物:蜜蜂 An Animal Model: Honey Bees	2	1	√	修課上限：20 人 Limited to 20 participants.
	E	BMM516	粒線體與細胞凋亡之病生理特論 Special Topics in Pathophysiology of Mitochondria and Apoptosis	2	1	√	
	E	BMM621	腎臟生理暨病理學特論 Kidney Physiology and Pathology	2	1	√	修課上限 20 人 Limited to 20 participants.
	E	BMM216	人類分子遺傳學 Human Molecular Genetics	2	1	√	修課上限 20 人 Limited to 20 participants.
多體學資訊暨智慧運算學組 Multi-Omics Informatics & Intelligence Computing	E	BMM482	先進蛋白質生物標誌偵測定量技術 Advanced Technologies for Biomarker Detection and Quantification	1	1	√	暑期講授課程，上限 25 人 Summer lecture course, limited to 25 participants.
	E	BMM483	先進蛋白質生物標誌偵測定量技術實驗 Advanced Technologies for Biomarker Detection and Quantification	1	1	√	暑期實作課程，上限 25 人 Summer practical course, limited to 25 participants.
	E	BMM488	精準醫學時代的預防與治療策略 Prevention and Treatment Strategies in the Era of Precision Medicine	2	1	√	
	E	AIM104	臨床資訊工程(*) Clinical Informatics	3	1	√	與人工智慧所碩士班合開，上限 20 人 Summer lecture course, limited to 20 participants.
	E	BMM620	生物資料庫管理及應用 Biological Database Management and Applications	3	1	√	
其他 Others	E	MTM136	現代生物技術及分子診斷實驗 Frontier of Biotechnology in Molecular Diagnosis Laboratory	2	1	√	暑期實作課程，上限 35 人 Summer practical course, limited to 35 participants.
	E	MTM137	尖端生物技術實驗-分子細胞學 Advanced Biotechnology Laboratory-Molecular Cell Biology	2	1	√	暑期實作課程，上限 35 人 Summer practical course, limited to 35 participants.
	E	BMM215	蛋白質工程實驗(*) Protein Engineering Laboratory Course(*)	2	1	√	暑期實作課程，上限 30 人 Summer practical course, limited to 30 participants.

註：1、學生所選欲修習之科目，需經過指導老師之同意及簽名。 Courses chosen by students must be approved and signed by the thesis supervisor.

2、*，英語授課。 Courses marked with an asterisk (*) are taught in English.

所長：_____ 課程委員會召集人：_____