

長庚大學 生物醫學工程學系博士班 必修修科目表 (113學年度入學學生適用)
Curriculum of the Doctoral Program at the Department of Biomedical Engineering, Chang Gung University
(Applicable to students admitted in 2024)

領域/組別	必/選修 Compul. / Elective Courses	科目名稱 Course Title	學分 Credits	開課 年級 Year	上學期 Fall Semester	下學期 Spring Semester	組別 Professional Area	必/選修 Compul. / Elective Courses	科目名稱 Course Title	學分 Credits	開課 年級 Year	上學期 Fall Semester	下學期 Spring Semester
共同必修 Compulsory courses	必修 Compulsory	生物醫學工程 Basic Biomedical Engineering	1	1	1		專業領域-生醫材料與感測 Biomaterials and Bio-sensing	選修 Elective	生物醫學材料 Biomaterials	3	1	3	
	必修 Compulsory	學報討論 Seminar	4	1	2	2		選修 Elective	生物感測器技術 Biosensor Technology	3	1	3	
	必修 Compulsory	學報討論 Seminar	4	2	2	2		選修 Elective	生醫材料分析方法(含實驗) Analytic Methods for Biomaterials	1	1	1	
								選修 Elective	微機電實驗 MEMS Micro Fabrication Lab.	1	1	1	
								選修 Elective	組織工程與再生醫學 Tissue Engineering and Regenerative Medicine	3	1	3	
學院共構 College co-constructed courses	必修 Compulsory	科技英文寫作(1)(2) English Technical Writing(1)(2)	2	1	1	1		選修 Elective	微流體生物晶片技術 Microfluidic Biochip Technology	3	1		3
								選修 Elective	細胞分子生物學 Molecular Biology of the Cell	3	1		3
								專業領域-醫療機電與力學 Medical Mechatronics and Mechanics	選修 Elective	生醫高分子特論 Specific Topics on Biopolymers	3	1	
							選修 Elective		醫療微機電 Medical MEMS	3	1	3	
							選修 Elective		醫療電子與控制 Medical Electronics and Control	3	1		3
							選修 Elective		生物力學 Biomechanics	3	1		3
							選修 Elective		立體造型與智慧製造 3D Modeling and Smart Manufacturing	2	1		2
							專業領域-生醫資訊與影像 Biomedical Informatics and Imaging	選修 Elective	生醫電子學 Biomedical Electronics	3	1	3	
								選修 Elective	醫學影像系統 Biomedical Imaging System	3	1	3	
								選修 Elective	醫學影像處理 Medical Imaging	3	1	3	
								選修 Elective	生醫訊號分析 Biomedical Signal Analysis	3	1	3	
								選修 Elective	生物資訊學 Bioinformatics	3	1	3	
								選修 Elective	程式設計 Programming language	3	1		3
	備註 Remarks	一、畢業學分：27學分。 (1)必修11學分。 (2)選修10學分(單一專業領域選修至少兩門)。 (3)論文6學分(通過學位考試並繳交通過審核論文後給予)。 二、須達英文畢業門檻方可畢業：依據「長庚大學工學院研究生英文能力檢測實施方案」實施。 三、博士班必修擋修規定：需先修畢(70分)「科技英文寫作(1)」，才可修習「科技英文寫作(2)」。 四、「學報討論」在學期間必修4學期共8學分，每學期2學分於當學期通過考核後給予。 五、曾修讀本所碩博士班課程者，除學報討論及科技英語寫作外，必修課程可向本所申請免修，但仍須補足畢業學分。 六、「生醫工程實驗」研究所已修畢相關課程者得申請免選修，學生須依本系「課程免修申請辦法」提出申請，經核可得免修，但仍須修足畢業學分。 七、外籍生修習工學院內外系所英語授課專業領域課程，可予以承認為畢業學分數，但以畢業學分(不含論文6學分及【學報討論】)之50%為上限。所修習之課程需經指導教授同意，並經課委會審查通過方得承認為畢業學分。本方案僅適用於經由外籍生管道入學之博士班外籍生。 八、可列入畢業學分之科目以本校醫學院及工學院開設之研究所課程(不含碩士班及學碩合開課程)為原則。											
1. Graduation credits: 27 (a) Credits for compulsory courses: 11 (b) Credits for elective courses: 10 (at least 2 elective courses must be selected from a single professional area) (c) Credits for thesis completion: 6 (given after passing Graduate Degree Examination and submitting approved dissertations)													
2. According to the “English Proficiency Requirements for Graduate Students of the College of Engineering, Chang Gung University”, all graduate students must reach the English proficiency requirements for graduation.													
3. Doctoral Program Prerequisite Requirement: Students must first complete "English Technical Writing (1)" with a minimum score of 70 before they can enroll in "English Technical Writing (2)".													
4. Students are required to complete 4 semesters of the "Seminar" course during their studies, earning a total of 8 credits (2 credit per semester, awarded upon passing the assessment for the seminar).													
5. For those who have previously taken master's or doctoral courses in this department, compulsory courses (except Seminar and English Technical Writing) can be waived upon application, but the total number of credits required for graduation must still be completed.													
6.Students who have completed the "Basic Biomedical Engineering Experiments" course at the graduate level may apply for exemption. Students must submit the application in accordance with the department's "Course Exemption Application Regulations". Upon approval, the exemption will be granted, but the total required graduation credits must still be completed.													
7. International students may take English-taught professional courses in the University. The credits will count toward graduation credits but no more than 50% of graduation credits (excluding the credits of master's thesis and "Seminars" courses). The taken courses will count toward graduation credits with approvals of advisor(s) and Departmental Curriculum Committee. This policy is valid only for international students in master's program.													
8. Courses that can be counted toward graduation credits must, in principle, be courses offered by the doctoral programs of the College of Medicine or the College of Engineering at this university.													

系所主任簽章：