長庚大學 <u>生物醫學工程學系 大學部</u> 必選修科目表 <u>(113學年度入學學生適用)</u> Curriculum of the Bachelor Program at the Department of Biomedical Engineering, Chang Gung University (Applicable to students admitted in 2024)

					Applicable to stud								No. b. co			
		科目名稱 Course Title	1	2	科目名稱 Course Title	1	<u>-</u>	暑	科目名稱 Course Title	1	三 2	暑	科目名稱 Course Title	1	四 2	
	必净 Compulsory courses	微積分(1) Calculus (1)	2		工程數學(微分方程) Engineering Mathematics	3		-	專題研究(1) Seminar(1)	1		-				
<b>\$</b>		普通物理學 General Physics	2		工程力學 Engineering Mechanics	3			基礎細胞分子生物學 Basic Molecular Cell	3						
		普通物理學實驗 General Physics	1		生物統計學 Biostatistics	2			Biology 生理學實驗 Physiology Experiment	1						
		材料科學導論 Introduction of Materials Science	3		解剖學 Anatomy	2			專題研究(2) Seminar(2)		1					
		計算機概論 Introduction to Computer Science	3		電路學實驗 Circuit Theory Laboratory	1			臨床工程概論 Introduction to Biomedical and Clinical		1					
		醫工概論-創意實作 (1)(2) Introduction to Biomedical Engineering – Innovation and Practice	2	2	工程數學(線性代數) Engineering Mathematics (Linear Algebra)		3		醫材專利與法規 An Introductory Guide for Medical Device Regulation and Patent		2					
		微積分(2) Calculus (2)		2	儀器分析 Instrumental Analysis		3		生醫科技創新設計 Biomedical Design Innovation		2					
		普通化學 General Chemistry		2	生理學 Physiology		3									
		普通化學實驗 General Chemistry Laboratory		1	研究方法 Research Methods		2									
		普通生物學 General Biology		2												
		普通生物學實驗 General Biology		1												
		電路學(1) Electric Circuits (I)		3												
	小計 ıbtotal		13	13		11	11			5	6					
必選 (三選一) Compulsory Courses													學士論文 Bachelor's Thesis		1	
													企業實習 Industrial Practical Training	6		
(Choose One of Three Options)									海外研習 Overseas Study		1		海外研習 Overseas Study	1		
選修 Elective courses	學院共構 College co-								英語口說與報告(1) English Speaking and Presentation(1)	2						
	constructed Courses								英語口說與報告(2) English Speaking and Presentation(2)		2					
					電路學(2) Electric Circuits (2)	3			電子學(1) Microelectronics (1)	3			校外實習 Practice School	4		
	醫療機電與力學 Medical Mechatronics and Mechanics				材料與力學實驗 Experiments for Materials and	1			電子學實驗(1) Electrical circuit laboratory (1)	1			輔具開發與植體設計 Technical Aids and Medical Design	3		
					生物力學導論 Introduction to Biomechanics		3		材料力學 Mechanics of Materials	3			工程聲學 Sound and Acoustics	3		
					訊號與系統 Siginal & System		3		電子學(2) Microelectronics (2)		3		骨科實驗力學 Experimental Mechanics	3		
									電子學實驗(2) Electrical Circuit Laboratory (2)		1		聽力維護與噪音控制 Hearing Conservation and Noise Control		3	
									快速成型實驗Rapid Prototyping Labs		1		醫療器材品質認證 The Evaluation and Quality System of Medical		3	
					有機化學(1) Organic Chemistry (1)	3			高分子材料導論 Introduction to polymer materials	2			校外實習 Practice School	4		
ourses	nsing				生醫材料概論 An Introduction to Biomaterials Sciences	3			表面分析技術 Surface Analysis Technology	3			奈米生物技術之醫學應 用 Applications of Nanobiotechnonlgy in Medicine	2		

-、畢業學分:128學分

- 1.必修59學分。
- 2. 選修40學分。
  - (1)含必選三選一(「海外研習」包含雙聯學位計畫,其中選擇「學士論文」者,於預計完成學士論文之學期再選修)。
  - (2)系選修至少30學分。本系三大核心專業領域「醫療機電與力學」、「生醫材料與感測」、「生醫資訊與影像」,其中必須 包含二個領域選修課程至少23學分,若一課程歸屬於多領域時,此課程僅可擇一領域計算學分。
  - (3)至多承認外系10學分(通識課程、體育選修及全民國防教育軍事訓練選修課程不予列入)。
  - (4)學院共構選修課程列入外系選修。
- 3. 通識學分:請詳見通識中心修課規定。英文領域、核心、多元課程29學分。。
- 二、體育大一、大二必修0學分。
- 三、【深耕學園】必修0學分,請詳見學務處深耕學園專區說明。
- 四、本校訂有英文畢業門檻,須達校訂標準方可畢業,請詳見語文中心規定。
- 五、學生需先完成海外交換學習歸國後,始可選修本「海外研習」課程。

## 1. Graduation credits: 128

Remarks

- (a) Credits for compulsory courses: 59
- (b) Credits for elective courses: 40
  - (1) Including the compulsory courses (choose one of three options). Joining dual degree program is also considered as "Overseas Study". Students should enroll in the "Bachelor's Thesis" when they expect to complete their thesis in the corresponding semester.
  - (2) At least 30 credits of BME elective courses. The BME elective courses are divided into three professional areas: Medical Mechatronics and Mechanics, Biomaterials and Bio-sensing, and Biomedical Informatics and Imaging. Students should take 23 credits from the professional areas in two different fields. If a course belongs to multiple areas, it can only be counted toward one area for credit calculation.
  - (3) A maximum of 10 credits of elective courses from other departments (excluding general education courses, physical education electives, and military training electives)
  - (4) The college co-constructed courses are counted as electives of other departments.
- (c) Credits for General Education courses (including English, core ability, and diverse courses, please refer to the course regulations of Center for General Education): 29
- 2. Physical Education is a mandatory, non-credit course for freshmen and sophomores.
- 3. "Shengeng Academy" is a mandatory course, non-credit course. For more details, please refer to the website of the Office of Student Affairs.
- Students must meet the criteria of English Proficiency Assessment or details.
- 5. Students need to complete the overseas exchange study and retu

ent before graduati	ion. Please refer to the regulations	of the Language Center fo
urn to CGU before	taking the "Overseas Study" cours	se.
《主任簽章:		日期: