

113~114學年度系所課程地圖

Department Curriculum Map for Academic Year(s) 113~114

系所概要 Department	
系所名稱 Department Name	生醫工程研究所 Graduate Institute of Biomedical Engineering
班別 Division	碩士班 Master Program

教育目標 Education Goals	
編號 Number	項目內容 Content
A	養成學生應用工程、科學與生醫相關的知識。 Expand students' knowledge in applied engineering, science and biomedicine.
B	培育具有國際視野之先進醫工領域之研發人才。 Cultivate talents with global perspectives in advanced biomedical engineering.

學生核心能力 Student Core Competencies		
編號 Number	項目內容 Content	對應教育目標編號 Corresponding Education Goal Number
A	具備醫工領域之專業知識。 Possess professional knowledge in biomedical engineering.	A
B	規劃並執行研究專題、具獨立解決問題之能力。 Plan and implement research projects, and have the ability to solve problems	AB
C	撰寫專業論文及表達研究成果之能力。 Ability to write scientific papers and communicate research results effectively.	AB
D	跨領域整合與創新研發之能力。 Integration in interdisciplinary research and innovative research skills.	B
E	具良好的產業觀與國際觀。 Possess insightful perspective on industry and globalization.	B
F	領導、管理、規劃、溝通及終身自我學習成長之能力。 Capability of leadership, management, planning, communication and lifelong	AB

※附註 Note:

- 1.各系所所屬之班別，含學士班、碩士班、博士班等，請分別填寫。
1. Complete the map separately for each division, including Bachelor's, Master's, and Doctoral program.
例如：資管學士班需填寫表二及表三；資管碩士班也須填寫表二及表三。For example, Forms 2 and 3 must be completed for Bachelor's program in Management Information Systems, and also for Master's program in for Bachelor's program in Management Information Systems.
- 2.教育目標及核心能力之代號皆以英文字母大寫為主。2. Codes for Education Goals and Core Competencies must be in uppercase English alphabet letters.
- 3.可依不同班（組）別填寫教育目標及核心能力。3. Education Goals and Core Competencies can be specific to the division in question.

承辦人簽章 Signature of Processor: 規劃單位主管簽章 Head of Planning Unit:

年 月 日 Date:

生醫工程研究所

Department ☐學士班 Bachelor's Program ☒碩士班 Master's Program ☐博士班 Doctoral Program
☐碩專班 Master's Degree Program ☐國際專班 International Program ☐進修學士班 Continuing Bachelor Program

課程規畫表 Curriculum Plan

中文課程名稱 Course Title in Chinese	英文課程名稱 Course Title in English	規劃要點 (附註) Plans (Notes)				對應核心能力編號 Corresponding Education Goal Number	建議修課年級 Recommended Year of Study	開課單位 Course Offering Unit	備註 Remarks
		1	2	3	4				
院核心課程(若無免填，請加註必修、選修) College Core Courses (not required if none, otherwise please indicate Required Courses and Elective Courses)									
必修課程 Required Courses									
生醫工程導論	Introduction to Biomedical Engineering	M	A	Y	6	ABC	1	醫工所 BME	
專題討論(一)	Seminar I	M	C	Y	0	ABC	1, 2	醫工所 BME	
專題討論(二)	Seminar II	M	C	Y	0	ABC	1, 2	醫工所 BME	
碩士論文	Dissertation	M	C	Y	6	ABDE	2	醫工所 BME	

※附註：規劃要點填表說明：（ 1 到 4 各欄位請填正確代表字母 ）
Note: Instructions for completing this form are provided below (please provide the correct English alphabet letters in fields 1 to 4)
1：U-學士課程、M-碩士課程、D-博士課程。1: U-Bachelor's program, M-Master's program, D-Doctoral program.
2：A-正課、B-實習課、C-台下指導之科目如學生講述或邀請演講之專題討論、專題研究……等。
2: A-Lecture, B-Internship, C-Subjects with private guidance such as student presentations or invited speeches, topic discussions, topic research, etc.
3：S-學期課、Y-學年課。3: S-Semester course, Y-Year-long course.
4：科目（全期或全年）總學分數（請填阿拉伯數字）。4: Total course (full-semester or full-year) credits (in Arabic numerals).

承辦人簽章 Signature of Processing Clerk: 規劃單位主管簽章 Head of Planning Unit: 年 月 日 Date:

生醫工程研究所

Department ☐ 學士班 Bachelor's Program ☒ 碩士班 Master's Program ☐ 博士班 Doctoral Program
☐ 碩專班 Master's Degree Program ☐ 國際專班 International Program ☐ 進修學士班 Continuing Bachelor Program

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		1	2	3	4				
選修課程 Elective Courses									
醫療器材品質驗證系統	Medical Devices Quality System	M	A	S	3	AD	1	醫工所 BME	
奈米生醫	Nanobiotechnology	M	A	S	3	ABC	1	醫工所、機械所 BME, Department of Mechanical Engineering	
生醫微機電	Bio Microelectromechanical Systems	M	A	S	3	ABCDE	1	醫工所、機械所 BME, Department of Mechanical Engineering	
奈米元件與檢測技術	Fabrication and Characterization of Nano Devices	M	A	S	3	ABCDE	Master & PHD students	醫工所 BME	
奈米仿生學	Nano-Biomimetics	M	A	S	3	ABCDE	Master & PHD students	醫工所、生技所 BME, Graduate Institute of Biotechnology	
光化學	Photochemistry	M	A	S	3	ABC	1	醫工所 BME	
醫療儀器的開發與規範導論	Introduction to Medical Device Development and Regulation	M	A	S	3	ABCD	1	醫工所 BME	
奈米生醫感測技術	Application of Nanotechnology in Biosensing	M	A	S	3	ABE	1	醫工所 BME	104-2校課程通過暑期開課 summer course
生理控制系統: 分析與模擬	Physiological Control System: Analysis and Simulation	M	A	S	3	ABC	1	醫工所 BME	
電生理與復健	Electrophysiology and Functional Electrical Stimulation	M	A	S	3	ABC	1	醫工所 BME	
治療診斷(一)	Theranostics I	M	A	S	3	ABCD	1	醫工所、化工所 BME, Department of Chemical	
生物有機化學	Bioorganic Chemistry	M	A	S	3	ABC	1	醫工所 BME	
醫學電子學	Medical Electronics	M	A	S	3	AB	1	醫工所 BME	
治療診斷(二)	Theranostics II	M	A	S	3	ABCD	2	醫工所 BME	
商業工程和外科技術課程—創新微創醫療器材設計	B.E.S.T (Business Engineering Surgical Technologies) Program	M	A	S	3	ABD	Undergraduate & Master students	醫工所、生物科技學士學位學程 BME, Bachelor Program in Biotechnology	112-2更名暑期開課 進階課程 advanced course summer course
醫療器材國際行銷與研發創新創業	International Marketing and Research and Development Innovation Entrepreneurship in Medical Equipment	M	A	S	2	ABCDE	Undergraduate & Master students	醫工所、生物科技學士學位學程 BME, Bachelor Program in Biotechnology	113-1變更英文名稱、進階課程、暑期開課 advanced course summer course
智慧數位科技產業技術	Smart Intelligent Digital Technology Industry	M	A	S	3	ADE	1	醫工所 BME	
現代光譜學－生物物理學與生物化學解析	Modern Optical Spectroscopy: With Exercises and Examples from Biophysics and	M	A	S	3	ABCD	Master & PHD students	醫工所 BME	
生物有機奈米粒	Bio-Organic Nanoparticles	M	A	S	3	ABC	1	醫工所 BME	
生物力學	Biomechanics	M	A	S	3	AB	1	醫工所 BME	

生醫光電導論	Introduction to Biophotonics	M	A	S	3	AB	1	醫工所 BME	
生醫光學影像系統工程	Biomedical Optical Imaging Systems Engineering	M	A	S	3	ADE	1	醫工所 BME	
生醫微奈米製程	Biomedical Micro/Nano Fabrication and Characterizeatio	M	A	S	3	ABE	1	醫工所 BME	104-2校課程 通過暑期開課 summer course
奈米科技導論	Introduction to Nanoscience and Nanotechnology	M	A	S	3	ABC	1	醫工所、奈米中心 BME, i CAST	
醫材開發	The Developments of Biomaterials for Biomedical Application	M	A	S	3	ACDE'	Master & PHD students	醫工所 BME	104-2校課程 通過暑期開課 summer course
生醫組織工程學	Biomedical Tissue Engineering	M	A	S	3	AD	Master & PHD students	醫工所 BME	
生物有機材料專題研究(一)	Special Topic in Organic Biomaterial Research(I)	M	C	S	0	AB	1	醫工所 BME	
生物有機材料專題研究(二)	Special Topic in Organic Biomaterial Research(II)	M	C	S	0	ABCE	1	醫工所 BME	
生醫光電專題研究(一)	Special Topic in Biophotonics Research(I)	M	C	S	0	ABCDE	1	醫工所 BME	
生醫光電專題研究(二)	Special Topic in Biophotonics Research(II)	M	C	S	0	ABCDE	1	醫工所 BME	
生醫檢測系統專題研究(一)	Special Topic in Biomedical Detection System Research(I)	M	C	S	0	ABE	1	醫工所 BME	
生物材料與血管新生	Biomaterials and Angiogenesis	M	A	S	3	ABCD	1	醫工所 BME	
慢性炎症性疾病的藥物傳遞策略	Drug Delivery Strategies for Chronic Inflammatory Diseases	M	A	S	3	ABCD	1	醫工所 BME	
生醫檢測系統專題研究(二)	Special Topic in Biomedical Detection System Research(II)	M	C	S	0	ABE	1	醫工所 BME	
磁性生醫檢測專題研究(一)	Special Topic in Magnetic Biosensing Research(I)	M	C	S	0	ABCE	1	醫工所 BME	
磁性生醫檢測專題研究(二)	Special Topic in Magnetic Biosensing Research(II)	M	C	S	0	ABCE	1	醫工所 BME	
生物電子介面專題研究(一)	Special Topic in Bioelectronic Interfaces Research(I)	M	C	S	0	ABCDE	Master & PHD students	醫工所 BME	
生物電子介面專題研究(二)	Special Topic in Bioelectronic Interfaces Research(II)	M	C	S	0	ABCDE	Master & PHD students	醫工所 BME	
奈微米生醫晶片實驗系統	Lab-on-a-Chip Microsystems	M	A	S	3	ABCDE	1	醫工所 BME	
生物科技之產業化	Commercialization of Biotechnology	M	A	S	1	ACD	Master & PHD students	醫工所 BME	
分子細胞生物學	Molecular cell biology	M	A	S	3	AB	1	醫工所 BME	
蛋白質工程學特論	Protein engineering	M	A	S	3	AB	1	醫工所 BME	
生醫儀表學	Biomedical Instrumentation	M	A	S	3	AD	1	醫工所 BME	
奈米科技與藥物釋放	Nanotechnology in Drug Delivery	M	A	S	3	ACD	1	醫工所 BME	
生技醫材設計與開發	Biomaterial Design and Development	M	A	S	3	ABE	1	醫工所 BME	107-1校課程 通過暑期開課 summer course
生醫奈米製程	Biomedical nanofabrication	M	A	S	2	ABE	1	醫工所 BME	
醫材開發	Biomaterials and Medical Device Development	M	A	S	2	ABE	1	醫工所 BME	
微創醫材	Micro-invasive Surgery Device	M	A	S	2	ABE	1	醫工所 BME	
生醫檢測	Biomedical sensing	M	A	S	2	ABE	1	醫工所 BME	
智慧醫材開發實作	The Developments and Experimental Exercises of Smart Medical Applications	M	A	S	1	ABE	Undergraduate & Master students	醫工所、生物科技學士學位學程 BME, Bachelor Program in Biotechnology	107-1校課程 通過暑期開課 112-2更名 進階課程

智慧醫材開發產業實習	Internship of Biomaterial and Medical Device Development	M	B	S	1	ABE	Undergraduate & Master students	醫工所、生物科技學士學位學程 BME, Bachelor Program in Biotechnology	advanced course summer course 113-2變更課程類別
AI器械學習於行為感知與醫療照護應用	AI Instrument Learning for Behavior Perception and Medical Care Applications	M	A	S	2	ABDEF	Undergraduate & Master students	醫工所、智慧創意工程學士學位學程 BME, Bachelor Program in Intellectual Creativity	112-2 新提暑期開課 進階課程 advanced course summer course 113-2更名
人工智慧於數位精準健康的應用	Applications of Artificial Intelligence in Digital Precision Health	M	A	S	3	ADE	Undergraduate & Master students	醫工所、智慧創意工程學士學位學程 BME, Bachelor Program in Intellectual Creativity	112-2 新提暑期開課 進階課程 advanced course summer course 113-2更名
先進智慧醫材	Advanced Smart Medical Devices	M	A	S	3	ADE	Undergraduate & Master students	醫工所、智慧創意工程學士學位學程 BME, Bachelor Program in Intellectual Creativity	進階課程 advanced course summer course
腐蝕與防蝕	Corrosion and Corrosion Control	M	A	S	3		1	材料所 Department of Materials Science and	
成體幹細胞學導論	Introduction to Adult Stem Cells	M	A	S	3		1	生科系 Department Of Life Sciences	
電化學系統工程	Electrochemical Engineering	M	A	S	3		1	生機所 Department of Bio-industrial Mechatronics Engineering	
電動力學概論與應用	Fundamental and Application of Electrokinetics	M	A	S	3		1	生機所 Department of Bio-industrial Mechatronics Engineering	
生醫感測器原理	Theory on Biosensor	M	A	S	3		1	生機所 Department of Bio-industrial Mechatronics Engineering	
生醫材料	Biomedical Materials	M	A	S	3		1	材料所 Department of Materials Science and	
電化學方法與應用	Electrochemical Methods and Applications	M	A	S	3		1	材料所 Department of Materials Science and	

※附註：規劃要點填表說明：（ 1 到 4 各欄位請填正確代表字母 ）

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承辦人簽章 Signature of Processing Clerk:

規劃單位主管簽章 Head of Planning Unit:

年 月 日