亞洲大學 生物資訊與醫學工程學系學士班課程規劃表

（113 學年度入學適用）

Undergraduate Curriculum Plan for Department of Bioinformatics and Medical Engineering, Asia University

(Applicable for Fall 2024 Enrollees)

畢業總學分：128 學分　　　　　　　　　　校課程委員會通過次別：1124

Credits of Graduation：128　　Approved in the 1124 University Curriculum Committee meeting

類別 Category			科目名稱 Course Title	英文名稱 English Title	修課年級 Year of the Program	修課學期 Semester	學分數 Credits	講授 Lecture	實作(驗) Practice (laboratory)	實習 Intern	備註
(30) University Required Credit 校定必修30學分	(22) Program Required Credits 基礎通識22學分	中文領域 Chinese Category (4學分)(4 Credits)	中文鑑賞與思辨	Chinese Appreciation and Critical Thinking	一 1st	上 1st	2	2	0	0	
			中文表達與應用	Chinese Expression and Application	一 1st	下 2nd	2	2	0	0	
		英文領域 English Category (8學分)(8 Credits)	共通英語文(一)	English for General Purposes (1)	一 1st	上 1st	3	3	0	0	
			共通英語文(二)	English for General Purposes (2)	一 1st	下 2nd	3	3	0	0	
			共通專業英語文:醫護英文	English for General Specific Purposes: English for Medical and Nursing Purposes	二 2nd	上、下 1st, 2nd	2	2	0	0	醫學暨健康學院 College of Medical and Health Sciences
											護理學院 College of Nursing
			共通專業英語文:科技英文	English for General Specific Purposes: English for Science and Technology							資訊電機學院 College of Information and Electrical Engineering
			共通專業英語文:商管英文	English for General Specific Purposes: Business English							管理學院 College of Management
			共通專業英語文:設計英文	English for General Specific Purposes: English for Creative Design							創意設計學院 College of Creative Design
			共通專業英語文:社科簡報英文	English for General Specific Purposes: English for Presentation for Social Sciences							人文社會學院 College of Humanities and Social Sciences
		程式領域 Information Category (4學分)(4 Credits)	資訊科技概論	Introduction to Information Technology	一 1st	上 1st	2	2	0	0	1. 資訊科技概論，為資訊學院必修科目。 Introduction to Information Technology is a required course for students in College of Information and Electrical Engineering. 2. 非資訊學院可二選一。 Students not in the College of Information and Electrical Engineering may choose 1 out of 2.
			資訊與科技	Information and-Technology						0	
			程式設計與智慧應用	Computer Programming and Artificial Intelligence Application	一 1st	下 2nd	2	2	0	0	
		歷史領域 History Category (2學分)(2	歷史與文化	History and Culture	一 1st	下 2nd	2	2	0	0	

類別 Category		科目名稱 Course Title	英文名稱 English Title	修課年級 Year of the Program	修課學期 Semester	學分數 Credits	每週上課時數			備　註
							講授 Lecture	實作(驗) Practice (laboratory)	實習 Intern	
	Credits)									
	藝術領域 Esthetics Category (2學分) (2 Credits)	設計思考與創新	Design Thinking and Innovation						0	(二選一) Choose 1 out of 2
		美學素養	Esthetics accomplishment	一 1st	上 1st	2	2	0	0	
	永續領域 Sustainable Category (2學分) (2 Credits)	永續發展與實踐(一)	Sustainable Development and Practice (1)	一 1st	上 1st	1	1	0	0	
		永續發展與實踐(二)	Sustainable Development and Practice (2)	一 1st	下 2nd	1	1	0	0	
體育 Physical Program		體育(一)～(四)	Physical Education (1)~(4)	一～二 1st～2nd	上、下 1st, 2nd	0	2	0	0	
博雅通識8學分 (8) Program Elective Credits		博雅課程 (人文類、社會類、自然類、生活類)	General Required (Core) Courses	一～四 1st～4th	上、下 1st, 2nd	8	8	0	0	1. 博雅課程分為四類： (1)人文類-1　(2)社會類-2 (3)自然類-3　(4)生活類-4 General Required (Core) Courses are divided into 4 categories: (1) Humanities, (2) Society, (3) Nature, and (4) Life. 2. 每一類至少須選修2學分(共8學分)；亦可以修習通識微學分課程，或通識認可之自主學習課程認抵之。 Students are required to take at least 2-credit course from each category (8 credits in total); Students could take General Micro-credit Course or Self-Study Course approved by the Center for General Education for credit waiver/transfer. 3. 須於畢業前修畢8學分，每學分皆須上滿18週。 Students are required to complete 8 credits of General Required (Core) Courses before graduation.

類別 Category			科目名稱 Course Title	英文名稱 English Title	修課年級 Year of the Program	修課學期 Semester	學分數 Credits	每週上課時數			備　　註
								講授 Lecture	實作(驗) Practice (laboratory)	實習 Intern	
涵養教育 Cultivation Education	涵養教育	通識講座 General Lectures (Required)	通識涵養教育 (健康、關懷、創新、卓越)	General Literacy Series	一～四 1st～4th	上、下 1st, 2nd	0	0	0	0	1. 在學期間，學生可自由參與校內任何通識認證活動，不限場次。至少參與 8 次。 Students are required to participate in at least 8 campus activities approved by the Center for General Education. 2. 每一素養至少達到 2 次：健康 2 次、關懷 2 次、創新 2 次、卓越 2 次。 Students are required to attend at least 2 lectures from the 4 domains of Literacy: Healthy, Care, Innovation, Excellence. 3. 畢業前須完成上述 2 項。 Student must complete the above for graduation.
(9)CollegeCoreCourses 院核心課程 9 學分			基礎程式設計	Fundamental Computer Programming	一 1st	上 1st	3	3	0	0	
			人工智慧與雲端應用	Artificial Intelligence and Cloud Applications	三 3rd	上 1st	3	3	0	0	
			*畢業專題（一）	Graduation-Projects (I)	三 3rd	下 2nd	1	1	0	0	同意專案役男於二下修課 AMSS can study in the 2nd semester of the 2nd year
			*畢業專題（二）	Graduation Projects (II)	四 4th	上 1st	1	1	0	0	同意專案役男於三上修課並於發表 AMSS can study in the 1st semester of the 3rd year
			*資訊研討	Information Technology Seminar	四 4th	上 1st	1	1	0	0	同意專案役男於三上修課 AMSS can study in the 1st semester of the 3rd year
(39) Departmental Core Courses 系核心課程 39 學分			普通化學	General Chemistry	一 1st	上 1st	3	3	0	0	
			生醫資訊與醫工概論	Introduction to Biomedical Informatics and Medical Engineering	一 1st	上 1st	3	3	0	0	
			微積分（一）	Calculus I	一 1st	上 1st	3	3	0	0	
			程式設計專案	Advanced Computer Programming	一 1st	下 2nd	3	3	0	0	
			普通物理	General Physics	一 1st	下 2nd	3	3	0	0	
			微積分（二）	Calculus II	一 1st	下 2nd	3	3	0	0	
			生物醫學工程倫理	Biomedical Engineering Ethics	一 1st	下 2nd	2	2	0	0	
			基礎生物化學	Basic Biochemistry	二 2nd	上 1st	2	2	0	0	
			視窗程式設計	Windows Programming	二 2nd	上 1st	3	3	0	0	
			生醫訊號處理	Biomedical Signal Processing	二 2nd	下 2nd	3	3	0	0	
			生物技術導論	Introduction to Biotechnology	二 2nd	下 2nd	3	3	0	0	
			生物統計學	Biostatistics	二 2nd	下 2nd	3	3	0	0	
			解剖學	Anatomy	三 3rd	上 1st	2	2	0	0	
			生理學	Physiology	三 3rd	上 1st	3	3	0	0	

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							講授 Lecture	實作(驗) Practice (laboratory)	實習 Intern	
(27)Department Professional Program 系專業選修學程 27 學分	智慧醫材學程 Smart medical devices Program	生物力學	Biomechanics	二 2nd	上 1st	3	3	0	0	實務型 Practical Course
		工程數學	Engineering Mathematics	二 2nd	上 1st	3	3	0	0	實務型 Practical Course
		醫學工程實驗	Medical Engineering Laboratory	二 2nd	上 1st	1	1	2	0	實務型 Practical Course
		材料機械性質	Mechanical Properties of Materials	二 2nd	上 1st	2	2	0	0	實務型 Practical Course
		電路學	Electric Circuits	二 2nd	下 2nd	2	2	0	0	研究型 Research-based Course
		電路學實驗	Electric Circuits Laboratory	二 2nd	下 2nd	1	1	2	0	實務型 Practical Course
		生醫材料導論	Introduction to Biomedical Materials	二 2nd	下 2nd	3	3	0	0	研究型 Research-based Course
		電子學	Electronics	三 3rd	上 1st	3	3	0	0	研究型 Research-based Course
		高分子材料科學	Polymer Materials Science	三 3rd	上 1st	2	2	0	0	研究型 Research-based Course
		醫學測量與儀表	Medical Measurement and Instrumentation	三 3rd	下 2nd	2	2	0	0	實務型 Practical Course
		組織工程	Tissue Engineering	三 3rd	下 2nd	3	3	0	0	實務型 Practical Course
		*生醫創新與商業化	Biomedical Innovations and Commercialization	四 4th	上 1st	2	2	0	0	實務型 Practical Courses 同意專案役男於三上修課 AMSS can study in the 1st semester of the 3rd year
	精準醫療學程 Precision medicine Program	離散數學	Discrete Mathematics	二 2nd	上 1st	3	3	0	0	研究型 Research-based Course
		資料結構與演算法	Data Structures and Algorithms	二 2nd	上 1st	3	3	0	0	研究型 Research-based Course
		網頁系統開發	Web-based System Development	二 2nd	下 2nd	3	3	0	0	實務型 Practical Course
		資料庫應用	Database Application	二 2nd	下 2nd	3	3	0	0	實務型 Practical Course
		基礎分子遺傳學	Basic Molecular Genetics	三 3rd	上 1st	3	3	0	0	研究型 Research-based Course
		生物資訊軟體應用	Application of Bioinformatics Software	三 3rd	上 1st	3	3	0	0	實務型 Practical Course
		生醫資料擷取與探勘	Biomedical Data Acquisition and Mining	三 3rd	下 2nd	3	3	0	0	研究型 Research-based Course
		體學導論(基因體、蛋白質體)	Introduction to Omics	三 3rd	下 2nd	3	3	0	0	研究型 Research-based Course
		*系統生物學	Systems Biology	四 4th	上 1st	3	3	0	0	研究型 Research-based Course 同意專案役男於三上修課 AMSS can study in the 1st semester of the 3rd year
(8) Department Elective Courses 系自由選修課程 8 學分		精準醫療	Precision Medicine	三 3rd	上 1st	2	2	0	0	綜合型 Research-based and Practical Course
		醫用微電子學	Medical Micro-electronics	三 3rd	下 2nd	2	2	0	0	實務型 Practical Course
		3D 建模	3D Modeling	三 3rd	下 2nd	2	2	0	0	實務型 Practical Course

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						講授 Lecture	實作(驗) Practice (laboratory)	實習 Intern	
	醫療器材專利與法規	Medical Device Patents and Regulations	三 3rd	下 2nd	2	2	0	0	實務型 Practical Course
(15) Students who complete 15 credits will be awarded the specialization program. 生物資訊專長學程 15 學分	生醫資訊與醫工概論	Introduction to Biomedical Informatics and Medical Engineering	一 1st	上 1st	3	3	0	0	
	生物技術導論	Introduction to Biotechnology	二 2nd	下 2nd	3	3	0	0	
	網頁系統開發	Web-based System Development	二 2nd	下 2nd	3	3	0	0	
	生醫訊號處理	Biomedical Signal Processing	二 2nd	下 2nd	3	3	0	0	
	人工智慧概論	Introduction to Artificial Intelligence	三 3rd	上 1st	3	3		0	

本系辦理實施「7+1」分流實習課程之對應科目名稱一覽表:
List of course titles for the department's implementation of the "7+1" internship program:

類別 Category	科目名稱	英文名稱	修課年級	修課學期	學分數	講授	實作(驗)	實習	備註
分流實習課程 Internship Program	*業界實習(一)(7+1 分流)	Practical Training (I)	四 4th	下 2nd	3	N/A	N/A	詳見備註 See remarks for details	1.僅供參加專業課程分流校外實習課程學生選課。 2.刪除專案役男此課程規劃 3.每1實習學分以不低於60小時、不超過80小時為原則。 Each internship credit shall be based on a minimum of 60 hours and a maximum of 80 hours.
	*業界實習(二)(7+1 分流)	Practical Training (II)	四 4th	下 2nd	3	N/A	N/A	詳見備註 See remarks for details	4.每學期以不超過9學分「不超過720小時」為限。 The total number of credits per semester shall not exceed 9, with a maximum of 720 hours. 5.實習學分列入畢業學分以不超過18學分「不超過1440小時」為原則。
	*業界實習(三)(7+1 分流)	Practical Training (III)	四 4th	下 2nd	3	N/A	N/A	詳見備註 See remarks for details	Internship credits counted toward graduation requirements shall be limited to a maximum of 18 credits, not exceeding 1,440 hours in total

註：

(一) 學生含通識課程應修畢 128 學分，需修習「校定必修」30 學分，「以院為教學核心課程」9 學分，本系「系核心課程」39 學分、本系一個「專業學程」及另一個「他系專長學程」或「跨領域學程」或取得「次專長」，始能畢業，不足畢業學分數，得自由選修(規定詳見第四點)學分補足之。

Students are required to complete 128 credits, including 30 credits of "University Required Courses," 9 credits of "College Core Courses," 39 credits of "Department Core Courses", one "Specialized Program" from the department, and along with either one "Specialized Program" from another department, or an "Interdisciplinary Program," or earning a "Minor" for graduation. Any remaining credits needed to meet graduation requirements may be fulfilled by elective courses (refer to point 4 for details).

(二) 本系需於畢業前完成實務實習 80 小時，學生可進行校外實習或於專題指導老師實驗室完成，相關規定依校外實習及專題實習辦法實施。

Students must complete 80 hours of practical training before graduation. This can be achieved through external internships or by completing a research project in a advisor's lab. Regulations follow the implementation guidelines for off-campus internships and project-based internships.

(三) *符號表示：同意學生就學期間申請專案服役者(簡稱專案役男)該課程彈性修讀，修讀方式已加註於備註欄。

The * symbol indicates courses that students who apply for alternative military service (referred to as "alternative military service students" or AMSS) are permitted to flexibly arranged during their studies. The method for course completion is noted in the remark column.

(四) 本系學生修讀自由選修需有 6 學分(含)以上為本系開設之課程。其餘可為 7+1 及 3+1 分流實習課程或除校定必修(含校定必修、體育(五)及體育(六)以外之其他課程，或通過學分抵免認定為自由選修之校外課程。

For elective courses, at least 6 credits must be offered by the department. The remaining credits can be fulfilled by the "7+1" or "3+1" internship programs, or from other courses except for "University Required Courses" (including University Required Courses, Physical Education V, and Physical Education VI), or by external courses recognized as electives through credit transfer.

(五) 本校規範自 106 學年度起大學日間部學生(除部份推動國考學系外)應至少修畢一個本系專業學程及一個跨域學習學程(選項計有「雙主修」、「輔系」、「跨領域學程」、「他系專長學程」或「次專長(即提供他系專長學程學系中修畢三門專業課程)」)，並達成相關畢業條件後，始符合畢業資格。

According to university regulations starting from the 106th academic year, daytime undergraduate students (excluding certain programs preparing students for national exams) must complete at least one specialized program from their department and one interdisciplinary learning program (options include "Double Major," "Minor," "Interdisciplinary Program," "Specialized Program from another department," or "Minor," which refers to completing three specialized courses from another department's specialized program). Only after fulfilling these graduation requirements will students be eligible for graduation.

系所主管簽章: 學院院長簽章: