亞洲大學

**106學年度大學部入學新生全英語4學年課程規劃**

**Asia University Course Curriculum for Bioinformatics and Medical Engineering Undergraduate Program**

系別：生物資訊與醫學工程學系 畢業總學分：128學分

Bioinformatics and Medical Engineering

Approved by the University Curriculum Committee on 06/05/2018

| 類 別Category | 科目名稱Course Title | 英文名稱English Course Title | 修課年級Year of the Program | 修課學期Semester | 學分數Credits | 每週1st 課時數Hours per week | 備 註Remarks |
| --- | --- | --- | --- | --- | --- | --- | --- |
| Lecture (h) | Lab/ Internship |
| 校定必修30學分 | 語文通識16學分 | 中文類(4學分) | 文學賞析 | Literature Appreciation | 1st | 1st | 2 | 2 | 0 |  |
| 文學與生活 | Literature and Life | 1st |  2nd  | 2 | 2 | 0 |  |
| 英文類(8學分) | 共通英語文(1st ) | English for General Purposes (1) | 1st | 1st  | 3 | 3 | 0 |  |
| 共通英語文(2nd ) | English for General Purposes (2) | 1st |  2nd  | 3 | 3 | 0 |  |
| 共通專業英語文:醫護英文 | English for General Specific Purposes: English for Medical and Nursing Purposes | 2nd | 1st 2nd  | 2 | 2 | 0 | 醫學暨健康學院 |
| 共通專業英語文:資訊英文 | English for General Specific Purposes: English for Science and Technology | 資訊電機學院 |
| 共通專業英語文:商管英文 | English for General Specific Purposes: English for Business Communication | 管理學院 |
| 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 |
| 共通專業英語文:社科簡報英文 | English for General Specific Purposes: English Presentation for Social Sciences | 人文社會學院 |
| 程式類(4學分) | 資訊與科技 | Information and Technology | 1st  | 1st  | 2 | 2 | 0 |  |
| 程式設計與智慧應用 | Computer Programming and Artificial Intelligence Application | 1st  |  2nd  | 2 | 2 | 0 |
| 核心通識8學分 | 健康類(2學分) | 健康與生活 | Health and Life | 1st  |  2nd  | 2 | 2 | 0 |  |
| 歷史類(2學分) | 歷史與文化 | History and Culture | 1st  |  2nd  | 2 | 2 | 0 |  |
| 法律類(2學分) | 娛樂、智慧財產權與法律 | Entertainment and Intellectual Property Law | 1st  | 1st  | 2 | 2 | 0 | (3rd選1st ) |
| 法律與生活 | Law & Life |
| 愛情、性別與法律 | Love, Gender and Law |
| 藝術類(2學分) | 設計思考與創新 | Design Thinking and Innovation | 1st  | 1st  | 2 | 2 | 0 | (2nd 選1st ) |
| 美學素養 | Esthetics accomplishment |
| 體育(1st )～(4th) | Physical Education (1)~(4) | 1st 、2nd  | 1st 、 2nd  | 0 | 2 | 0 |  |
| 全民國防教育軍事訓練-國際情勢全民國防教育軍事訓練-國防政策全民國防教育軍事訓練-全民國防全民國防教育軍事訓練-防衛動員全民國防教育軍事訓練-國防科技(需修畢2門科目) | All-out Defense Education Military Training--International SituationsAll-out Defense Education Military Training--National Defense PoliciesAll-out Defense Education Military Training--Civil DefenseAll-out Defense Education Military Training--Defense MobilizationAll-out Defense Education Military Training--Defense Technology | 1st  | 1st 、 2nd  | 0 | 2 | 0 | 1. 本類軍訓課程大1st 1st 、 2nd 由通識中心排定2門科目授課。
2. 如需重修本類課程時，可自行選擇，不需選擇原排定科目。
 |
| 服務與學習(1st )(2nd )-實作課 | Service and Learning(1)(2)-Practice | 1st  | 1st 、 2nd  | 0 | 1.5 | 0 | 實作課實施時間暫定晨間7:30~8:00或12:10~12:40或傍晚17:10~17:40。 |
| 服務與學習(1st )(2nd )-講授課 | Service and Learning(1)(2)-Lecture | 1st  | 1st 、 2nd  | 0 |  | 0 | 講授課實施時間：(1st )新生訓練，(2nd )由服學組排定並公告。 |
| 博雅通識6學分 | 博雅課程(人文類、社會類、自然類、生活類) | General Required (Core) Courses |  |  | 6 | 每科目各2 | 0 | 1.免修規定(1)人文類-1：人社學院免修(2)社會類-2：管理學院免修(3)自然類-3：醫健學院、資訊學院免修(4)生活類-4：創意學院免修2.本課程每學分皆須1st 滿18週，須於畢業前修習完畢。 |
| 通識涵養教育**（不納入畢業學分）** | General Literacy Series (non-credit) | 1st ~4th | 1st 、 2nd  | 1 |  |  | 「通識涵養教育」為通識教育必修，大學日間部須於在學期間至少參與8次，符合素養：健康2次、關懷2次、創新2次、卓越2次，成績以P/F(通過/不通過)計分，通過者以1學分計；惟不納入通識選修及最低畢業學分。 |
|  以院為教學核心課程15學分 | 基礎程式設計(一 ) | Basic Computer Programming(1) | 1st  | 1st  | 1 | 1 |  |  |
| 基礎程式設計(二) | Basic Computer Programming(2) | 1st  | 1st  | 1 | 1 |  |  |
| 基礎程式設計(三) | Basic Computer Programming(3) | 1st  | 1st  | 1 | 1 |  |  |
| 人機互動概論 | Introduction to Human-Computer Interaction | 3rd | 1st  | 3 | 3 |  |  |
| 進階程式設計 | Advanced Computer Programming | 1st  |  2nd  | 3 | 3 |  |  |
| 網頁系統開發 | Web Base System Programming | 2nd  |  2nd  | 3 | 3 |  |  |
| 畢業專題(一 ) | Special Projects I | 3rd |  2nd  | 1 | 0 |  | 1、限於資訊學院修課，畢業專題(1st )、畢業專題(2nd )採通過制 |
| 畢業專題(二 ) | Special Projects II | 4th | 1st  | 1 | 0 |  |  |
| 資訊研討 | Information Technology Seminar | 4th | 1st  | 1 | 1 |  |  |
| 系核心 課程33學分 | 普通化學 | General Chemistry | 1st  | 1st  | 3 | 3 |  |  |
| 生醫資訊與醫工概論 | Introduction to Biomedical Information and Engineering | 1st  | 1st  | 3 | 3 |  |  |
| 微積分 (一 ) | Calculus I | 1st  | 1st  | 3 | 3 |  |  |
| 微積分 (二 ) | Calculus II | 1st  |  2nd  | 3 | 3 |  |  |
| 基礎生物化學  | Basic Biochemistry | 2nd  | 1st  | 2 | 2 |  |  |
| 解剖學 | Anatomy | 3rd | 1st  | 2 | 2 |  |  |
| 視窗程式設計 | Windows Programming | 2nd  | 1st  | 3 | 3 |  |  |
| 生醫訊號處理 | Biomedical Signal Processing | 2nd  |  2nd  | 3 | 3 |  |  |
| 生物技術導論 | Introduction to Biotechnology | 2nd  |  2nd  | 3 | 3 |  |  |
| 生物統計學 | Biostatistics | 2nd  |  2nd  | 3 | 3 |  |  |
| 生物醫學工程倫理 | Biomedical Engineering Ethics | 1st  |  2nd  | 2 | 2 |  |  |
| 生理學 | Physiology | 3rd | 1st  | 3 | 3 |  |  |
| 本系專業學程 | 醫學工程學程27學分  | 普通物理 | General Physics | 1st  |  2nd  | 3 | 3 |  | 實務型 |
| 工程數學 | Engineering Mathematics | 2nd  | 1st  | 3 | 3 |  | 實務型 |
| 電路學 | Electric Circuit | 2nd  |  2nd  | 2 | 2 |  | 學術型 |
| 電路學實驗 | Electric Circuit Laboratory | 2nd  |  2nd  | 1 | 1 |  | 實務型 |
| 生醫材料導論 | Introduction to Biomedical Materials | 2nd  |  2nd  | 3 | 3 |  | 學術型 |
| 電子學 | Electronics | 3rd | 1st  | 3 | 3 |  | 學術型 |
| 生物輸送 | transport phenomena in biomedical engineering | 3rd |  2nd  | 3 | 3 |  | 學術型 |
| 醫學測量與儀表 | Medical Measurement and Instrumentation | 3rd |  2nd  | 2 | 2 |  | 實務型 |
| 高分子材料學 | Polymeric materials | 3rd | 1st  | 2 | 2 |  | 學術型 |
| 生醫創新與商業化 | Biomedical Innovation and Commercialization | 4th | 1st  | 2 | 2 |  | 實務型 |
| 組織工程 | Tissue Engineering | 4th |  2nd  | 3 | 3 |  | 實務型 |
| 生醫資訊學程27學分 | 離散數學 | Discrete Mathematics | 2nd  | 1st  | 3 | 3 |  | 學術型 |
| 資料結構與演算法 | Data Structures & Algorithms | 2nd  | 1st  | 3 | 3 |  | 學術型 |
| 資料庫應用 | Database Application | 2nd  |  2nd  | 3 | 3 |  | 實務型 |
| 基礎分子生物學 | Basic Molecular Biology | 3rd | 1st  | 3 | 3 |  | 學術型 |
| 生物資訊軟體應用 | Linux System Administration | 3rd | 1st  | 3 | 3 |  | 實務型 |
| 生醫資料擷取與探勘 | Biomedical Data Acquisition and Mining | 3rd |  2nd  | 3 | 3 |  | 學術型 |
| 體學導論(基因體、蛋白質體) | Introduction To Omics | 3rd |  2nd  | 3 | 3 |  | 學術型 |
| 系統生物學 | Systems Biology | 4th | 1st  | 3 | 3 |  | 學術型 |
| 大數據與程式語言(R + Python) | Big Data programing (R + Python) | 4th |  2nd  | 3 | 3 |  | 實務型 |
| 系自由選修課程8學分 | 醫學資訊管理 | Medical information management | 3rd~4th | 1st 、 2nd  | 2 | 2 |  | 實務型 |
| 醫療設備原理與維護 | Principle and Maintenance of Medical Equipments | 3rd~4th | 1st 、 2nd  | 2 | 2 |  | 實務型 |
| 3D列印建模 | 3D modeling for 3D printing | 3rd~4th | 1st 、 2nd  | 2 | 2 |  | 實務型 |
| 醫療器材專利與法規 | Medical Instruments Patent and Regulations | 3rd~4th | 1st 、 2nd  | 2 | 2 |  | 實務型 |
| 生物資訊專長學程15學分 | 生醫資訊與醫工概論 | Introduction to Biomedical Information and Engineering | 1st  | 1st  | 3 | 3 |  | 他系學生修得其中9至10學分者，核給該學程之「次專長」。  |
| 生物資訊軟體應用 | Linux System Administration | 3rd | 1st  | 3 | 3 |  |
| 體學導論(基因體、蛋白質體) | Introduction to Omics | 3rd |  2nd  | 3 | 3 |  |
| 大數據與程式語言(R + Python) | Big Data programing (R + Python) | 4th |  2nd  | 3 | 3 |  |
| 系統生物學 | Systems Biology | 4th | 1st  | 3 | 3 |  |

註: 一、 學生含通識課程應修畢 128 學分(含)以上始能畢業，其中含通識課程(必修語文課程、 核心通識及通識選修)30 學分，院基礎學程 15 學分、系核心學程 33 學分，餘不足 128 學分之學分數，需另修習「系專業選修學程」、「系自由選修課程」課程學分補足其不足 學分數，始得畢業。

Students must complete 128 credits including the standard curriculum in order to graduate. The standard curriculum (language requirements, core curriculum, and standard curriculum electives) includes 30 credits, the department standard curriculum includes 15 credits, the department core curriculum includes 15 credits and completion of the “school group professional curriculum” of 33 credits is required. Students lacking 128 credits are required to take “department professional electives” or “major electives curriculum” to make up for credits required for graduation.

二、 通識教育開授科目，請參考本校通識教育中心之課程計畫與規定。

For a list of standard curriculum courses, please refer to the school’s standard curriculum education center’s curriculum planning and regulations.

三、 有關國際生修習本校以全英語授課之博雅通識課程英語文能力規定，依語文教學研究發 展中心規劃辦法辦理。

International students enrolled in the university’s standard liberal arts curriculum will be processed via the rules set forth from The Center for the Development of Language Teaching and Research.

 四、 有關僑生、港澳生、陸生修習本校以全英語授課之博雅通識課程規定，比照國際生通識 課程辦理。

Students from Hong Kong, Macau, China, and overseas Chinese students enrolled in the university’s standard liberal arts curriculum will be processed as international student standard curriculums.

系所主管簽章: 學院院長簽章: