

國立暨南國際大學應用化學系學士班必選修科目一覽表 Undergraduate Program Course Catalog of Department of Applied Chemistry, National Chi Nan University

本表(105)學年度入學新生適用 Effective for students admitted in Fall,2016

最低畢業學分：134學分，全校共同課程12學分，通識領域課程19學分，系必修60學分，選修43學分(其中學系專業課程選修至少20學分)。 Undergraduate requirements: a minimum of 134 required credits, including 12 credits in the school-wide curriculum, 19 credits of General Education courses, 60 credits of Departmental required courses and 43 credits of elective courses.

壹、全校共同課程 1.School-Wide Curriculum

| 一、共同課程(必修12學分) A. School-Wide Required Courses (12 credits) | | | |
|---|--|----------------|---|
| 課程代號 Course Code | 課程名稱(中文及英文) Course Name (Chinese and English) | 學分數 Credits | 備註Notes |
| | 英文一(上) English I(1) | 2 | 依入學時參加「新生英文能力測驗」結果分班上課，成績後5%修習英文精進班，其餘依所屬各學系分班上課。(Students are divided into 2 groups depending on English Proficiency Test results. |
| | 英文一(下) English I(2) | 2 | |
| | 英文二 English II | 2 | The bottom 5% will take English for Beginners, while the majority will take English I.) |
| | 國文(上) Chinese(1) | 2 | 僑外生得以修習「僑外生華語文」抵免國文。(Overseas students take Chinese for Overseas Students) |
| | 國文(下) Chinese(2) | 2 | |
| | 服務學習(上) Service Learning(1) | 0.5 | 依所屬學系分班上課，無特殊原因不得跨班選課。(Students are divided into groups by their own department, without any proper reasons they cannot change the decision.) |
| | 服務學習(下) Service Learning(2) | 0.5 | |
| | 大一體育(上)Physical Education (1) | 0 | 上學期依所屬學系分班上課，無特殊原因不得跨班選課。下學期依運動項目分班，自由選課。(Students are divided to take physical Education I by their own department, without any proper seasons they cannot change the decision. Courses are divided based on sports items. Students are free to choose courses they like.) |
| | 大一體育(下)Physical Education (2) | 0 | |
| | 特色運動 (Featured Sports) | 1 | 大二開始，每學期限修一項，畢業前須完成至少2項特色運動 (Students are limited take one course each semester since Sophomore,At least 2 featured sports courses are required before graduation.) |
| | 通識講座 General Education lecture program | 0 | 畢業前至少應出席6場。(Students are required to attend at least 6 lectures before graduation.) |
| 二、共同選修課程 (各系依共同選修加列課程) B. School-Wide Elective Courses | | | |
| | 第二外語 (Second Foreign Language) | | 含日文、韓文、法文、德文及西班牙文等。(Including Japanese, Korean, French, German and Spanish, etc.) |
| | 東南亞語言(Southeast Asia Languages) | | 含泰語、越南語、緬甸語、印尼語及馬來語，可抵特色通識「東南亞」次領域。(Including Thai, Vietnamese, Burmese, Indonesian and Malay. These courses can be credited course credits in Southeast Asia of Topical General Education) |

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| | 進階語文(Advanced English) | | |
| | 其他選修(Other Elective Course) | | |

貳、通識領域課程(至少19學分) 2.General Education Courses

| 主領域 Main Field | 次領域 Sub-Field | 學分數 Credits | 備註 Notes |
|-------------------------------------|--|----------------|---|
| 人文領域 Humanities | 文學與藝術(Literature and Art) | 5 | 每次領域各1門，共至少修習5學分。(Students in the two sub-fields should attend at least one course, and attend a total of at least 5 credits) |
| | 歷史哲學與文化(History, Philosophy and Culture) | | |
| 社會領域 Society | 法政與教育(Law, Politics and Education) | 5 | 每次領域各1門，共至少修習5學分。(Students in the two sub-fields should attend at least one course, and attend a total of at least 5 credits) |
| | 社經與管理(Society, Economy and Management) | | |
| 自然領域 Nature | 工程與科技(Engineering and Technology) | 5 | 每次領域各1門，共至少修習5學分。(Students in the two sub-fields should attend at least one course, and attend a total of at least 5 credits) |
| | 生命與科學(Life and Science) | | |
| 特色通識領域 Topical General Education | 東南亞(Southeast Asia) | 4 | 自由選擇其中兩個次領域各修習一門，共至少修習4學分。(Students should select two sub-fields courses in the main field, and attend a total of at least 4 credits) |
| | 綠概念(Green Concept) | | |
| | 在地實踐(Social Practice) | | |

參、學系專業課程 3.Departmental Courses

| 課程代號 Course Code | 課程名稱(中文及英文) Course Name (Chinese and English) | 學分數 Credits | 修別 Course type (required/elective) | 開課年級 Course availability (freshman) | 備註 Notes |
|---------------------|--|----------------|---------------------------------------|--|-------------|
| 240001 | 普通化學(上) General Chemistry (1) | 3 | 必 | 1 | 大一必、選修 |
| 240013 | 普通化學(下) General Chemistry (2) | 3 | 必 | 1 | |
| 240005 | 微積分(上) Calculus (1) | 3 | 必 | 1 | |
| 240016 | 微積分(下) Calculus (2) | 3 | 必 | 1 | |
| 240006 | 普通物理(上) General Physics (1) | 3 | 必 | 1 | |
| 240017 | 普通物理(下) General Physics (2) | 3 | 必 | 1 | |
| 240009 | 英語聽講(上) Listening Comprehensive and Spoken English (1) | 1 | 必 | 1 | |
| 240021 | 英語聽講(下) Listening Comprehensive and Spoken English (2) | 1 | 必 | 1 | |
| 240082 | 普通化學實驗 Experiments in General Chemistry | 1 | 必 | 1 | |
| 240083 | 分析化學實驗 Experiments in Analytical Chemistry | 1 | 必 | 1 | |
| 240079 | 普通物理實驗 Experiments in General Physics | 1 | 必 | 1 | |

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| 240004 | 專題研究一(上) Undergraduate Research (1) | 1 | 選 | 1 | |
| 240015 | 專題研究一(下) Undergraduate Research (2) | 1 | 選 | 1 | |
| 240028 | 化學數學 Chemical Mathematics | 3 | 必 | 2 | 大二必、選修 |
| 240038 | 物理化學(二) Physical Chemistry (2) | 3 | 必 | 2 | |
| 240026 | 分析化學(上) Analytical Chemistry (1) | 3 | 必 | 2 | |
| 240033 | 分析化學(下) Analytical Chemistry (2) | 3 | 必 | 2 | |
| 240024 | 有機化學(上) Organic Chemistry | 4 | 必 | 2 | |
| 240034 | 有機化學(下) Organic Chemistry | 4 | 必 | 2 | |
| 240084 | 分析化學暨有機化學實驗 Experiments in Analytical and | 2 | 必 | 2 | |
| 240085 | 有機化學實驗 Experiments in Organic Chemistry | 2 | 必 | 2 | |
| 240029 | 專題研究二(上) Undergraduate Research II (1) | 1 | 選 | 2 | |
| 240032 | 專題研究二(下) Undergraduate Research II (2) | 1 | 選 | 2 | |
| 280020 | 奈米科技導論 Introduction to Nano-technology | 3 | 選 | 2上 | 應用光電系開課 |
| 280033 | 奈米製作技術 Nano Fabrication Techniques | 3 | 選 | 2下 | 應用光電系開課 |
| 280034 | 材料微結構分析 Microstructural Analysis of Materials | 3 | 選 | 2下 | 應用光電系開課 |
| 240035 | 物理化學(一) Physical Chemistry | 3 | 必 | 3 | 大三必、選修 |
| 240040 | 無機化學(上) Inorganic Chemistry | 3 | 必 | 3 | |
| 240045 | 無機化學(下) Inorganic Chemistry (2) | 3 | 必 | 3 | |
| 240039 | 物理化學實驗 Experiments in Physical Chemistry | 2 | 必 | 3 | |
| 240062 | 生物化學實驗 Experiments in Biochemistry | 2 | 選 | 3 | |
| 240044 | 專題研究三(上) Undergraduate Research III (1) | 1 | 選 | 3 | |
| 240047 | 專題研究三(下) Undergraduate Research III (2) | 1 | 選 | 3 | |
| 280063 | 材料分析 Materials Analysis | 3 | 選 | 3上 | 應用光電系開課 |
| 280042 | 平面顯示器概論 Introduction to Flat Panel Display | 3 | 選 | 3上 | 應用光電系開課 |
| 280043 | 光纖元件原理與應用 Optical Fiber Devices - Principles and Applications | 3 | 選 | 3上 | 應用光電系開課 |

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| 280050 | 光電工程實驗 Optoelectronic Engineering Lab. | 1 | 選 | 3上 | 應用光電系開課 |
| 280071 | 材料實驗 Materials Lab. | 1 | 選 | 3上 | 應用光電系開課 |
| 280040 | 奈米製作實驗 Nano Manufacturing Lab. | 1 | 選 | 3下 | 應用光電系開課 |
| 240056 | 書報討論(上) Seminar (1) | 1 | 必 | | 4 大四必、選修 |
| 240057 | 書報討論(下) Seminar (2) | 1 | 必 | | 4 |
| 240058 | 專題研究四(上) Undergraduate Research IV (1) | 1 | 選 | | 4 |
| 240052 | 專題研究四(下) Undergraduate Research IV (2) | 1 | 選 | | 4 |
| 240059 | 生物醫學實驗 Experiments in Biomedicine | 2 | 選 | | 4 |
| | 專業實習 Specialized Internship | 3 | 選 | | 4 |
| | 企業實習 Enterprise Internship | 6 | 選 | | 4 |
| 280049 | 奈米光電材料與元件 Nano Optoelectronic Materials and Devices | 3 | 選 | 4上 | 應用光電系開課 |
| 240081 | 普通生物學 Biology | 3 | 選 | 1, 2 | 跨年級選修 |
| 240022 | 科技英文 Scientific English | 3 | 選 | 1, 2, 3, 4 | 跨年級選修 |
| 240043 | 生物化學(上) Biochemistry (1) | 3 | 選 | 2, 3, 4 | 跨年級選修 |
| 240049 | 生物化學(下) Biochemistry (2) | 3 | 選 | 2, 3, 4 | 跨年級選修 |
| 240041 | 儀器分析 Instrumental Analysis | 3 | 選 | 3, 4 | 跨年級選修 |
| 240065 | 有機光譜分析 Introduction to Spectroscopic Analysis of Organic Compounds | 3 | 選 | 3, 4 | |
| 240048 | 材料科學導論 (上) Introduction to Material Science (1) | 3 | 選 | 3, 4 | |
| 240060 | 材料科學導論 (下) Introduction to Material Science (2) | 3 | 選 | 3, 4 | |
| 240042 | 儀器分析實驗 Experiments in Instrumental Analysis | 2 | 選 | 3, 4 | |
| 240077 | 材料化學實驗 Experiments in Material Science | 2 | 選 | 3, 4 | |
| 245035 | 固態化學 Solid State Chemistry | 3 | 選 | 3, 4, g | 跨年級選修 |
| 245042 | 無機合成 Inorganic Synthesis | 3 | 選 | 3, 4, g | |
| 275062 | 現代醫學概論 Introduction to Modern Medicine Science | 3 | 選 | 3, 4, g | |
| 240050 | 電化學 Electroanalytical | 3 | 選 | 3, 4, g | |
| 240054 | 分離技術 Separation Science | 2 | 選 | 3, 4, g | |
| 240071 | 有機合成及反應機構(I) | 3 | 選 | 3, 4, g | |
| 240072 | 有機合成及反應機構(II) | 3 | 選 | 3, 4, g | |

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|--------|---|---|---|---------|-------|
| 275001 | 生物醫學導論 Introduction to Biomedicine | 3 | 選 | 3, 4, g | |
| 275040 | 生醫技術 Biomedical Skill | 3 | 選 | 3, 4, g | |
| 275003 | 生醫特論 Special Topics in Biomedicine | 3 | 選 | 3, 4, g | |
| 275037 | 生物科技與生物藥學 Biotechnology and Biomedicine | 3 | 選 | 3, 4, g | |
| 275016 | 生理學 Physiology | 3 | 選 | 3, 4, g | |
| 275002 | 腫瘤生物學 Oncology | 3 | 選 | 3, 4, g | |
| 245033 | 微生物與免疫學 Microbiology & Immunology | 3 | 選 | 3, 4, g | |
| 275010 | 細胞生物學 Cellular Biology | 3 | 選 | 3, 4, g | |
| 275068 | 分子生物學 Molecular Biology | 3 | 選 | 3, 4, g | |
| 245043 | 有機發光材料的製備 Preparation of OLED materials | 1 | 選 | 3, 4, g | |
| 249048 | 電子順磁共振光譜原理與運用 Electron Paramagnetic Resonance | 3 | 選 | 3, 4, g | |
| 245045 | 醫學工程與生物材料導論 Introduction of Biomedical Engineering and Biomedical | 3 | 選 | 3, 4, g | |
| 240067 | 生化分析 Bioanalytical Science | 3 | 選 | 3, 4, g | |
| 245002 | 材料化學(上) Material Science (1) | 3 | 選 | 4, g | 跨年級選修 |
| 245007 | 材料化學(下) Material Science (2) | 3 | 選 | 4, g | |
| 245044 | 果蠅模式動物 Drosophila animal model system | 2 | 選 | 4, g | |
| 245038 | 物理化學特論 Special Topics in Physical Chemistry | 3 | 選 | 4, g | |
| 245004 | 研究方法一(上) Graduate Research I (1) | 1 | 選 | 4, g | |
| 245009 | 研究方法一(下) Graduate Research I (2) | 1 | 選 | 4, g | |
| 245005 | 專題報告一(上) Seminar I (1) | 1 | 選 | 4, g | |
| 245010 | 專題報告一(下) Seminar I (2) | 1 | 選 | 4, g | |
| 275024 | 專題研究一 Graduate Research I | 1 | 選 | 4, g | |
| 275013 | 專題討論一 Seminar I | 1 | 選 | 4, g | |
| 275035 | 專題研究二 Graduate Research II | 1 | 選 | 4, g | |
| 275034 | 專題討論二 Seminar II | 1 | 選 | 4, g | |

備註：
1. 大四學生聽演講的次數，由書報討論(上)(下)之任課老師規定之。
2. 選修43學分中，科技學院各系至少30學分(其中應化系專業選修課程至少20學分)，全校其它學系至多13學分，不包含超修之通識課程。

填表人：

系(所)主管：

院長：

填表日期：

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