

110 學年度入學新生課程規劃表(化學與生物化學組)

Academic Year 110(2021) Curriculum Plan for Incoming Students,

Department of Chemistry- Chemistry and Biochemistry Division

校訂必修 Compulsory University Core Curriculum (通識核心課程 General Education Core)

共計 26 學分 Total : 26 credits

| 類別 Category                              |                                                                          | 課程/學門 Course / Discipline                                       |                             | 學分 Credits | 開課年級 Year Offered                                                                                |
|------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------|-----------------------------|------------|--------------------------------------------------------------------------------------------------|
| 基本知能<br>Basic Competence<br>(12)         | 語文表達<br>Language Expression                                              | 外國語文 (Q)<br>Foreign Language                                    | 英文 (一) English( I )         | 4          | 一                                                                                                |
|                                          |                                                                          |                                                                 | 大二外文自由選<br>Foreign Language | 4          | 二                                                                                                |
|                                          |                                                                          | 中國語文能力表達<br>Ability of Expression in Spoken and Written Chinese |                             | 2          | 一下                                                                                               |
|                                          | 學習與發展<br>Learning and Development (N)                                    | 大學學習 Learning in University                                     |                             | 1          | 一上                                                                                               |
|                                          | 社團學習與實作 (K)                                                              | 課外活動與團隊發展 The Operation of Students' Clubs and Team Development |                             | 1          | 一下                                                                                               |
| 通識核心課程 General Education Curriculum (14) | 人文領域 (4 選 1 學門)<br>Humanities Field (choose 1 out of 4 disciplines)      | 文學經典學門(L)<br>Appreciation of Chinese Literature                 |                             | 2          | 自行上網選修 Courses to be selected online<br><br>每學門至多修習 2 科 (Up to two courses from each discipline) |
|                                          |                                                                          | 歷史與文化學門(P)<br>History Studies                                   |                             |            |                                                                                                  |
|                                          |                                                                          | 哲學與宗教學門(V)<br>Philosophy and Religion                           |                             |            |                                                                                                  |
|                                          |                                                                          | 藝術欣賞與創作學門(M)<br>Arts Appreciation and Invention                 |                             |            |                                                                                                  |
|                                          | 社會領域 (4 選 1 學門)<br>Social Sciences Field (choose 1 out of 4 disciplines) | 全球視野學門(T)<br>Global Outlook                                     |                             | 2          |                                                                                                  |
|                                          |                                                                          | 未來學學門(R)<br>Futures Studies                                     |                             |            |                                                                                                  |
|                                          |                                                                          | 社會分析學門(W)<br>Social Analysis                                    |                             |            |                                                                                                  |
|                                          |                                                                          | 公民社會及參與學門(S)<br>Civil Society and Participation                 |                             |            |                                                                                                  |
|                                          | 科學領域 (3 選 1 學門)<br>Science                                               | 資訊教育學門(O)<br>Information Education                              |                             | 2          |                                                                                                  |
| 全球科技革命學門(Z)                              |                                                                          |                                                                 |                             |            |                                                                                                  |

|                              |                                                                                                                                                                               |                                                               |     |      |
|------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------|-----|------|
|                              | Field<br>(choose 1<br>out of 3<br>disciplines)                                                                                                                                | Global Technology Revolution<br>自然科學學門(U)<br>Natural Sciences |     |      |
| 服務與活動<br>課程 Other<br>Courses | 全民國防教育軍事訓練(一)-國防科技/ 護理 (一) (不列入畢業學分)<br>All-Out Defense Education Military Training(I)-<br>National Defense Technology/ Nursing(I)<br>(excluded from graduation credit count) |                                                               | 0   | 一上   |
|                              | 體育(不列入畢業學分)Male and Female Physical<br>Education (excluded from graduation credit count)                                                                                      |                                                               | 0   | 4 學期 |
|                              | 校園與社區服務學習 Campus and Community Service<br>Learning(excluded from graduation credit count)                                                                                     |                                                               | 0/0 | 一    |

#### 系訂必修 Department Required Courses

共計 60 學分 Total : 56credits

| 科目 Course                           | 學分 Credits | 開課年級 Year Offered |
|-------------------------------------|------------|-------------------|
| 普通化學 GENERAL CHEMISTRY              | 3/3        | 一                 |
| 普通化學實驗 GENERAL CHEMISTRY EXPERIMENT | 1/1        | 一                 |
| 普通物理 GENERAL PHYSICS                | 3          | 一上                |
| 普通物理實驗 GENERAL PHYSICS LAB.         | 1          | 一上                |
| 微積分 CALCULUS                        | 3/3        | 一                 |
| 有機化學 ORGANIC CHEMISTRY              | 4/4        | 二                 |
| 有機化學實驗 ORGANIC CHEMISTRY LABORATORY | 1/1        | 二                 |
| 物理化學 PHYSICAL CHEMISTRY             | 4/4        | 二                 |
| 物理化學實驗 PHYSICAL CHEMISTRY LAB.      | 1/1        | 二                 |
| 生物化學 BIOCHEMISTRY                   | 3/3        | 三下                |
| 生物化學實驗 BIOCHEMISTRY LAB.            | 0/1        | 三下                |
| 無機化學 INORGANIC CHEMISTRY            | 3/3        | 三                 |
| 儀器分析 INSTRUMENTAL ANALYSIS          | 3/3        | 三                 |
| 儀器分析實驗 INSTRUMENTAL ANALYSIS LAB.   | 1/1        | 三                 |
| 書報討論 SEMINAR                        | 1          | 四上                |

#### 系選修 Department Electives

共計 20 學分 Total : 20 credits

| 科目 Course                         | 學分 Credits | 開課年級 Year Offered |
|-----------------------------------|------------|-------------------|
| 分析化學 ANALYTICAL CHEMISTRY         | 3          | 一                 |
| 化學的應用 APPLICATIONS OF CHEMISTRY   | 2          | 一                 |
| 生物學導論 INTRODUCTION TO BIOLOGY     | 3          | 一                 |
| 化學資訊與雲端 CHEMINFORMATICS AND CLOUD | 3          | 一                 |
| 進階生物學 ADVANCED BIOLOGY            | 3          | 二                 |

|                                                           |   |   |
|-----------------------------------------------------------|---|---|
| 生物化學概論 INTRODUCTION TO BIOCHEMISTRY                       | 3 | 三 |
| 有機光譜 ORGANIC SPECTROMETRY                                 | 3 | 三 |
| 奈米材料 NANO-MATERIALS AND APPLICATIONS                      | 3 | 三 |
| 食品化學 FOOD CHEMISTRY                                       | 3 | 三 |
| 藥物化學 PHARMACY CHEMISTRY                                   | 3 | 三 |
| 分子生物學 MOLECULAR BIOLOGY                                   | 3 | 三 |
| 科技管理法規概論 INTRODUCTION TO THE LAW OF TECHNOLOGY MANAGEMENT | 2 | 三 |
| 有機反應機構 ORGANIC REACTION MECHANISM                         | 3 | 四 |
| 量子化學 QUANTUM CHEMISTRY                                    | 3 | 四 |
| 科技德文與德國科技 TECHNOLOGY GERMAN AND GERMAN TECHNOLOGY         | 2 | 四 |
| 無機化學特論 S.T. IN INORGANIC CHEM.                            | 3 | 四 |
| 綜合應用化學 SELECTED TOPICS IN APPLIED CHEM.                   | 2 | 四 |
| 有機化學特論 SPECIFIC TOPICS IN ORGANIC CHEMISTRY               | 3 | 四 |
| 結構化學 STRUCTURAL CHEMISTRY                                 | 3 | 四 |

◎系訂選修課程依當學期開課課程為主，以上列表僅供參考。

The elective courses are subject to change. The above list is for reference only.

(1) 校訂必修：26 學分 TKU-specific Compulsory Courses: 26 credits

(2) 系訂必修：科目總學分數：60 學分 Department-specific Compulsory Courses: 60 credits

(3) 系選修：20 學分 Department-specific Elective Courses: 20 credits

(4) 自由選修：22 學分 General Elective Courses: 22 credits

畢業總學分數：128 學分 Total Graduation Credits: 128 credit