

土木工程學系
114 學年度入學新生課程規劃表

校訂必修(通識核心課程)

共計24學分

系選修

09學分

| 類別 | | 課程/學門 | 學分 | 開課年級 |
|--------------------|---------------|--------------|-----|-------------|
| 基本知能 (12) | 外國語文學門(Q) | 英文(一) | 4 | 一 |
| | | 大二外文自由選 | 4 | 二 |
| | 語文表達 | 中國語文能力表達 | 2 | 一下 |
| | 學習與發展(N) | 大學學習 | 1 | 一上 |
| | 社團學習與實作(K) | 課外活動與團隊發展 | 1 | 一下 |
| 通識核心課程 (12) | 探索永續 / 人工智慧導論 | | 1/1 | 一上 |
| | 人文領域 | 文學經典學門(L) | 2 | 每學門至多修習 2 科 |
| | | 歷史與文化學門(P) | | |
| | | 哲學與宗教學門(V) | | |
| | | 藝術欣賞與創作學門(M) | | |
| | 社會領域 | 全球視野學門(T) | 2 | |
| | | 未來學學門(R) | | |
| | | 社會分析學門(W) | | |
| | | 公民社會及參與學門(S) | | |
| | 科學領域 | 資訊教育學門(O) | 2 | |
| | | 全球科技革命學門(Z) | | |
| | | 自然科學學門(U) | | |
| 全民國防教育軍事訓練（一）-國防科技 | | | 1 | 不計入畢業學分 |
| 體育 | | | 4 | 不計入畢業學分 |
| 校園與社區服務學習 | | | 2 | 不計入畢業學分 |

系訂必修

共計65學分

| 科目名稱 | 學分數 | 開課年級 |
|------------|-----|------|
| 土木工程概論 | 1 | 一上 |
| 微積分 | 3 | 一上 |
| 普通物理 | 2 | 一上 |
| 工程圖學及電腦繪圖 | 2 | 一上 |
| 測量學(一) | 2 | 一上 |
| 測量實習(一) | 1 | 一上 |
| 應用力學 | 3 | 一下 |
| 基礎工程數學 | 3 | 一下 |
| 普通物理 | 2 | 一下 |
| 測量學(二) | 2 | 一下 |
| 土木工程概念設計 | 1 | 一下 |
| 工程材料 | 2 | 二上 |
| 工程材料實驗 | 1 | 二上 |
| 材料力學 | 3 | 二上 |
| 工程數學(一) | 3 | 二上 |
| 程式語言 | 2 | 二上 |
| 土壤力學 | 3 | 二下 |
| 土壤力學實驗 | 1 | 二下 |
| 結構學 | 3 | 二下 |
| 流體力學 | 3 | 二下 |
| 營建管理 | 2 | 二下 |
| 運輸工程 | 3 | 三上 |
| 鋼筋混凝土 | 3 | 三上 |
| 數值方法 | 2 | 三上 |
| 工程地質 | 3 | 三上 |
| 工程統計學 | 2 | 三下 |
| 土木建築施工法 | 2 | 三下 |
| 基礎工程 | 3 | 三下 |
| 木工程整合性專業實作 | 2 | 四上 |

| 科目名稱 | 學分數 | 開課年級 |
|--------------|-----|------|
| 測量實習(二) | 1 | 一下 |
| 動力學 | 2 | 二上 |
| BIM工程應用及程式基 | 2 | 二上 |
| 材料力學(二) | 2 | 二下 |
| 工程數學(二) | 3 | 二下 |
| 土壤力學(二) | 3 | 三上 |
| 結構學(二) | 3 | 三上 |
| 工程計算軟體應用 | 2 | 三上 |
| 工程經濟學 | 2 | 三上 |
| 專案規劃與控制 | 2 | 三上 |
| 結構實驗 | 2 | 三上 |
| 鋼結構設計 | 3 | 三上 |
| 結構矩陣分析 | 3 | 三下 |
| 鋼筋混凝土(二) | 3 | 三下 |
| 公路工程 | 2 | 三下 |
| 電腦輔助工程技術與實 | 2 | 三下 |
| 3D資訊模型電腦輔助 | 3 | 三下 |
| 專題討論 | 1 | 三下 |
| 建築結構設計 | 2 | 四上 |
| 預力混凝土 | 2 | 四上 |
| 營建工程估價 | 2 | 四上 |
| 生態保育工法 | 2 | 四上 |
| 企業實習(教務處學分) | 3 | 四上 |
| 低碳綠建築 | 2 | 四上 |
| 橋樑設計 | 2 | 四上 |
| 風工程導論 | 2 | 四上 |
| 土壤改良 | 2 | 四上 |
| 初等結構動力學 | 2 | 四下 |
| 軌道工程 | 2 | 四下 |
| 隧道工程 | 2 | 四下 |
| 地理資訊系統之工程應 | 2 | 四下 |
| 工程法律與契約 | 2 | 四下 |
| 地工合成物在工程上之應用 | 2 | 四下 |

◎系選修課程依當學期開課課程為主，以上列表僅供參考。

校訂必修：24學分

系訂必修：65學分

系選修：09學分

自由選修：30學分

畢業總學分數：128學分

Department of Civil Engineering
114 Academic Year Freshman Course Planning Table

| School Compulsory Courses | | | | 24 Credits |
|---|--|---|--------|---|
| Field | | Course Name | credit | Grade |
| Fundamental courses (12) | Foreign Language (Q) | English (I) | 4 | 1 st year |
| | | optional foreign language for sophomore year | 4 | 2nd year |
| | Ability of Expressing in Spoken and Written Chinese | Ability of Expressing in Spoken and Written Chinese | 2 | 1 st year |
| | Learning and Development (N) | Learning in University | 1 | 1 st year |
| | Learning and Practice of Club (K) | Learning and Practice of Club | 1 | 1 st year |
| General Education & Core Courses (12) | Exploring Sustainability/INTRODUCTION TO ARTIFICIAL INTELLIGENCE | | 1/1 | 1 st year |
| | Humanity categories | Classics in World Literature (L) | 2 | Each part from categories only can take up to 2 subjects for 4 credits. |
| | | History and Culture(P) | | |
| | | Philosophy and Religion (V) | | |
| | | Arts Appreciation and Invention (M) | | |
| | Science categories | Global Outlook (T) | 2 | |
| | | Futures Studies (R) | | |
| | | Social Analysis (W) | | |
| | | Civil Society and Participation (S) | | |
| | Science categories | Information & Computer Education (O) | 2 | |
| | | Global Technology Revolution (Z) | | |
| | | Natural Sciences (U) | | |
| All-Out Defense Education Military Training and Nursing | | | 1 | Not counted toward graduation credits. |
| Physical Education | | | 4 | Not counted toward graduation credits. |
| Campus and Community Service-Learning | | | 2 | Not counted toward graduation credits. |

| Department Compulsory Courses | | 65 credits | |
|---|--|------------|----------------------|
| Course Name | | credit | Grade |
| INTRODUCTION TO CIVIL ENG. | | 1 | 1 st year |
| CALCULUS | | 3 | 1 st year |
| GENERAL PHYSICS | | 2 | 1 st year |
| ENGINEERING GRAPHICS AND COMPUTER DRAWING | | 2 | 1 st year |
| SURVEYING | | 2 | 1 st year |
| SURVEYING LAB. (I) | | 1 | 1 st year |
| APPLIED MECHANICS | | 3 | 1 st year |
| BASIC ENGINEERING MATHEMATICS | | 3 | 1 st year |
| GENERAL PHYSICS | | 2 | 1 st year |
| SURVEYING II | | 2 | 1 st year |
| CIVIL ENGINEERING CONCEPTUAL DESIGN | | 1 | 1 st year |
| ENGINEERING MATERIALS | | 2 | 2nd year |
| ENGINEERING MATERIALS LABORATORY | | 1 | 2nd year |
| STRENGTH OF MATERIALS | | 3 | 2nd year |
| ENGINEERING MATHEMATICS (I) | | 3 | 2nd year |
| COMPUTER PROGRAMMING | | 2 | 2nd year |
| SOIL MECHANICS | | 3 | 2nd year |
| SOIL MECHANICS LABORATORY | | 1 | 2nd year |
| STRUCTURAL THEORY | | 3 | 2nd year |
| FLUID MECHANICS | | 3 | 2nd year |
| CONSTRUCTION MANAGEMENT | | 2 | 2nd year |
| TRANSPORTATION ENGINEERING | | 3 | 3rd year |
| REINFORCED CONCRETE | | 3 | 3rd year |
| NUMERICAL METHOD | | 2 | 3rd year |
| ENGINEERING GEOLOGY | | 3 | 3rd year |

| | | |
|------------------------------------|---|----------|
| ENGINEERING STATISTICS | 2 | 3rd year |
| CONSTRUCTION METHODS | 2 | 3rd year |
| FOUNDATION ENGINEERING | 3 | 3rd year |
| CIVIL ENGINEERING CAPSTONE PROJECT | 2 | 4th year |

| Department Elective Courses | | 09 Credits | |
|--|--|------------|----------------------|
| Course Name | | credit | Grade |
| SURVEYING LAB. (II) | | 1 | 1 st year |
| DYNAMICS | | 2 | 2nd year |
| BIM APPLICATION AND PROGRAMMING FUNDAMENTALS FOR ENGINEERS | | 2 | 2nd year |
| STRENGTH OF MATERIALS(II) | | 2 | 2nd year |
| ENGINEERING MATHEMATICS (II) | | 3 | 2nd year |
| SOIL MECHANICS (II) | | 3 | 3rd year |
| STRUCTURAL THEORY (II) | | 3 | 3rd year |
| SOFTWARE APPLICATION IN ENGINEERING COMPUTING | | 2 | 3rd year |
| ENGINEERING ECONOMICS | | 2 | 3rd year |
| PROJECT PLANNING AND CONTROL | | 2 | 3rd year |
| STRUCTURAL LAB. | | 2 | 3rd year |
| STEEL STRUCTURE DESIGN | | 3 | 3rd year |
| STRUCTURE MATRIX ANALYSIS | | 3 | 3rd year |
| REINFORCED CONCRETE (II) | | 3 | 3rd year |
| HIGHWAY ENGINEERING | | 2 | 3rd year |
| COMPUTER-AIDED ENGINEERING TECHNOLOGY AND EXCERISE | | 2 | 3rd year |
| 3D MODELING AND COMPUTER AIDED DESIGN | | 3 | 3rd year |
| SEMINAR | | 1 | 3rd year |
| STRUCTURE DESIGN | | 2 | 4th year |
| PRESTRESSED CONCRETE DESIGN | | 2 | 4th year |
| CONSTRUCTION ESTIMATING | | 2 | 4th year |
| ECOLOGICAL ENGINEERING METHODS | | 2 | 4th year |
| PRACTICUM IN EDUCATIONAL TECHNOLOGY | | 3 | 4th year |
| LOW CARBON GREEN BUILDING | | 2 | 4th year |
| BRIDGES DESIGN | | 2 | 4th year |
| INTRODUCTION TO WIND ENGINEERING | | 2 | 4th year |
| SOIL IMPROVEMENT | | 2 | 4th year |
| JUNIOR STRUCTURAL DYNAMICS | | 2 | 4th year |
| TRACKWORK ENGINEERING | | 2 | 4th year |
| TUNNEL ENGINEERING | | 2 | 4th year |
| INTRODUCTION TO GEOGRAPHIC INFORMATION SYSTEM | | 2 | 4th year |
| CONSTRUCTION LAW AND CONTRACT | | 2 | 4th year |
| APPLICATION OF GEOSYNTHETICS | | 2 | 4th year |

◎ The department elective courses are mainly based on the courses offered in the current semester. The above list is for reference only. °

- (1) Total credits of compulsory subjects: 89 credits (including 24 credits of general education courses)
- (2) Minimum total number of credits required for elective courses in this department: 9 credits.
- (3) Total credits of other elective courses: 30 credits
- (4) Total credits for graduation: 128 credits