

中華大學土木工程學系112級學士班四年課程規劃表  
Bachelor's Curriculum in Department of Civil Engineering For 2023

111.12.01 111學年度第1學期第2次系課規會議討論通過 Enacted at the 2nd Department Curriculum Committee of academic year 111, on December 01, 2022.  
112.06.07 111學年度第2次院課規會議審議通過 Approved at the 2nd College Curriculum Committee of academic year 111, on June 07, 2023.  
112.06.14 112學年度第4次校課規會議審議通過 Approved at the 4th University Curriculum Committee academic year 111, on June 14, 2023.

| 第一學年 Freshman                                                                                                                                             |            |                                                   |            | 第二學年 Sophomore                                                 |            |                                                                |            | 第三學年 Junior                                                     |            |                                                                  |            | 第四學年 Senior                                                     |            |                                                                                           |            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|------------|---------------------------------------------------|------------|----------------------------------------------------------------|------------|----------------------------------------------------------------|------------|-----------------------------------------------------------------|------------|------------------------------------------------------------------|------------|-----------------------------------------------------------------|------------|-------------------------------------------------------------------------------------------|------------|
| 上學期 1st Semester                                                                                                                                          |            | 下學期 2nd Semester                                  |            | 上學期 1st Semester                                               |            | 下學期 2nd Semester                                               |            | 上學期 1st Semester                                                |            | 下學期 2nd Semester                                                 |            | 上學期 1st Semester                                                |            | 下學期 2nd Semester                                                                          |            |
| 課程名稱 Course                                                                                                                                               | 學分數 Credit | 課程名稱 Course                                       | 學分數 Credit | 課程名稱 Course                                                    | 學分數 Credit | 課程名稱 Course                                                    | 學分數 Credit | 課程名稱 Course                                                     | 學分數 Credit | 課程名稱 Course                                                      | 學分數 Credit | 課程名稱 Course                                                     | 學分數 Credit | 課程名稱 Course                                                                               | 學分數 Credit |
| <b>必修共同課程(28學分)，包括英文課程(6學分)和通識課程(22學分)。Obligatory Common Courses (28 Credits) including English Courses (6 Credits) and General Courses (22 Credits).</b> |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 英文一<br>Freshman English (I)                                                                                                                               | 2          | 英文二<br>Freshman English (II)                      | 2          | 英文三<br>Sophomore English I                                     | 1          | 英文四<br>Sophomore English II                                    | 1          | 通識<br>General Courses                                           | 4          | 通識<br>General Courses                                            | 2          |                                                                 |            |                                                                                           |            |
| 體育(一)<br>Physical Education (I)                                                                                                                           | 0          | 體育(二)<br>Physical Education (II)                  | 0          | 通識<br>General Courses                                          | 4          | 通識<br>General Courses                                          | 4          |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 通識<br>General Courses                                                                                                                                     | 4          | 通識<br>General Courses                             | 4          |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| <b>院核心必修課程(10學分) College Obligatory Courses (10 Credits)</b>                                                                                              |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 設計(一)<br>Basic Design (I)                                                                                                                                 | 4          | APP開發與應用<br>APP Design and Application            | 2          |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 電腦繪圖(一)<br>Computer Graphics (I)                                                                                                                          | 2          | 電腦繪圖(二)<br>Computer Graphics (II)                 | 2          |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| <b>數學與基礎必修課程(23學分) Math. and Fundamental Obligatory Courses (23 Credits)</b>                                                                              |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 微積分(一)<br>Calculus (I)                                                                                                                                    | 2          | 微積分(二)<br>Calculus (II)                           | 2          | 工程數學(一)<br>Engineering Mathematics (I)                         | 2          | 工程數學(二)<br>Engineering Mathematics (II)                        | 2          |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 工程材料<br>Construction materials                                                                                                                            | 2          | 工程力學<br>Engineering Mechanics                     | 3          | 材料力學<br>Strength of Materials                                  | 3          | 結構學<br>Theory of Structures                                    | 3          |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 科技物理<br>Technological Physics                                                                                                                             | 2          | 測量學<br>Surveying                                  | 2          |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| <b>工程專業必修課程(20學分) Civil Engineering Obligatory Courses (20 Credits)</b>                                                                                   |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 工程材料試驗<br>Engineering Materials Test                                                                                                                      | 1          | 測量實習<br>Surveying Practice                        | 1          | 工程地質<br>Engineering Geology                                    | 2          | 土壤力學<br>Soil Mechanics                                         | 3          | 鋼筋混凝土<br>Reinforced Concrete                                    | 3          | 施工法<br>Construction Methods                                      | 2          | 畢業專題(一)<br>Special Topics (I)                                   | 1          | 畢業專題(二)<br>Special Topics (II)                                                            | 1          |
|                                                                                                                                                           |            |                                                   |            |                                                                |            | 土壤力學實驗<br>Soil Mechanics Laboratory                            | 1          | 基礎工程<br>Foundation Engineering                                  | 3          | 營建管理<br>Construction management                                  | 2          |                                                                 |            |                                                                                           |            |
| <b>工程專業選修課程(至少38學分) Civil Engineering Elective Courses (At least 38 Credits)</b>                                                                          |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 土木結構工程師課程模組 The Civil Engineering and Structural Engineer Course Modules                                                                                  |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
|                                                                                                                                                           |            |                                                   |            |                                                                |            | 橋梁工程<br>Bridge Engineering                                     | 2          | 結構動力學<br>Structural Dynamics                                    | 2          | 鋼結構設計<br>Design of Steel Structures                              | 2          | 預力混凝土設計<br>Prestressed Concrete Design                          | 2          |                                                                                           |            |
|                                                                                                                                                           |            |                                                   |            |                                                                |            |                                                                |            | 結構矩陣分析<br>Matrix Method of Structural Analysis                  | 2          | 建築抗震設計<br>Building Seismic Design                                | 2          |                                                                 |            |                                                                                           |            |
| 大地水利工程師課程模組 Geotechnical and Hydraulic Engineer Course Module                                                                                             |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 水文學<br>Hydrology                                                                                                                                          | 2          | 水土保持工程<br>Soil and Water Conservation Engineering | 2          | 水土保持規劃設計<br>Planning and Design of Soil and Water Conservation | 2          | 流體力學<br>Fluid Mechanics                                        | 2          | 隧道工程<br>Tunnel Engineering                                      | 2          | 邊坡工程<br>Slope Engineering                                        | 2          | 岩石力學與工程<br>Rock Mechanics and Engineering                       | 2          |                                                                                           |            |
|                                                                                                                                                           |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 測量及職業安全衛生技術士課程模組 Technician of Surveying and Occupational Safety Course Module                                                                            |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
|                                                                                                                                                           |            |                                                   |            |                                                                |            | 工程測量<br>Engineering Surveying                                  | 2          | 職業安全衛生法規<br>Regulations of Occupational Safety and Health       | 2          | 營建安全<br>Construction Safety                                      | 2          |                                                                 |            |                                                                                           |            |
|                                                                                                                                                           |            |                                                   |            |                                                                |            | 工程測量實習<br>Engineering Surveying Practice                       | 1          |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| Autodesk專業證照課程模組 Autodesk Professional Certificate Course Module                                                                                          |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
|                                                                                                                                                           |            |                                                   |            |                                                                |            | 建築資訊模型(一)<br>Introduction to Building Information Modeling (I) | 2          | 建築資訊模型(二)<br>Introduction to Building Information Modeling (II) | 2          | 建築資訊模型(三)<br>Introduction to Building Information Modeling (III) | 2          | 建築資訊模型(四)<br>Introduction to Building Information Modeling (VI) | 2          | 建築資訊模型整合應用<br>Building Information Model Integration Application                          |            |
| 專業實務課程模組 Professional Practice Course Module                                                                                                              |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 永續工程概論<br>Introduction to Sustainable Engineering                                                                                                         | 2          | 工程英文<br>Engineering English                       | 2          | 多工程結構實驗<br>Multifunction Structure Laboratory                  | 1          | 施工圖<br>Working Drawing                                         | 2          | 綠色工程材料<br>Green Construction Materials                          | 2          | 專案管理概論<br>Introduction to Project Management                     | 2          | 工程估價<br>Construction Estimating                                 | 2          |                                                                                           |            |
| 工程倫理<br>Engineering Ethics                                                                                                                                | 2          | 防災科技<br>Technology for Disaster Mitigation        | 2          | 非破壞檢測科技<br>Non-destructive Inspection for Civil Technology     | 2          | 營建管理<br>Construction management                                | 2          | 土木工程品質管制<br>Quality Control of Civil Engineering                | 2          | 結構安全評估<br>Assessment of Structural Integrity                     | 2          | 工程契約與爭議調解<br>Construction Contract and Dispute Resolution       | 2          |                                                                                           |            |
|                                                                                                                                                           |            |                                                   |            |                                                                |            | 營建法規<br>Building Codes                                         | 2          | 監工與施工實務<br>Supervisor in Construction Practices                 | 2          | 結構監測測測實務<br>Structural Monitoring Technology                     | 2          | 數值分析<br>Numerical Analysis                                      | 2          | 基樁非破壞檢測科技應用與實務<br>Application and Practice of Nondestructive Testing Technology for Piles | 2          |
| <b>校定必選及跨域外系選修(9學分) Common Required selective Courses and Foreign Department Elecuive Courses (9 Credits)</b>                                             |            |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            |                                                                                           |            |
| 探索園區<br>Exploring the Science Park                                                                                                                        | 2          |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            | 企業實習<br>Employment Internship                                   | 9          | 就業實習<br>Enterprise Internship                                                             | 9          |
| AI體驗2.0<br>AI Experience 2.0                                                                                                                              | 1          |                                                   |            |                                                                |            |                                                                |            |                                                                 |            |                                                                  |            |                                                                 |            | 其他非土木系所開課程<br>Other Foreign Department Courses                                            |            |

備註(Notes):

(1) 畢業規定128學分：包含校共同通識28學分、院核心必修10學分、數學與基礎必修23學分、工程專業必修20學分、工程專業選修至少38學分、及跨域外系選修9學分。跨域外系選修9學分，含「探索園區」與「AI體驗2.0」(外籍生及轉學生免修)，但不含通識、體育、及軍訓課程。Graduation requirements are 128 credits: including 28 credits of common general studies, 10 credits of core compulsory courses, 23 credits of compulsory mathematics and basic courses, 20 credits of compulsory engineering majors, at least 38 credits of engineering electives, and 9 credits of cross-domain electives. 9 credits of elective courses from cross-domain external departments, including "Exploring the Science Park" and "AI Experience 2.0" (foreign students and transfer students are exempted), but not include general education, physical education, and military training courses.

- (2) 課程設計比例：院核心必修及數學與基礎必修課程(10+23)/128=25.78%、工程專業課程(20+38)/128=45.31%、跨域外系選修課程9/128=7.03%、通識課程28/128=21.88%。Curriculum design ratio: core compulsory courses in the college and compulsory mathematics and basic courses (10+23)/128=25.78%, engineering professional courses (20+38)/128=45.31%, cross-domain elective courses from external departments 9/128=7.03%, General courses 28/128=21.88%.
- (3) 依據本校「學生基本能力指標實施辦法」第四條規定，本系資訊應用課程為【APP開發與應用】，學生需符合「中華大學學生資訊應用能力檢定實施辦法」之規定通過檢核標準，始符合畢業資格。According to Article 4 of the "Implementation Measures for Student Basic Ability Indicators" of our school, the information application course of this department is [APP Design and Application]. Students must meet the provisions of the "Implementation Measures for Student Information Application Ability Test of Chung Hua University" and pass the verification standards. Eligible for graduation.
- (4) 依據本校「學生基本能力指標實施辦法」第四條規定，本系創新與創意基礎課程為【設計(一)】，【畢業專題(二)】為創新創意相關專題課程，學生需符合「中華大學創新與創意課程實施辦法」之規定通過檢核標準，始符合畢業資格。According to Article 4 of the "Implementation Measures for Basic Student Ability Indicators" of our school, the basic courses of innovation and creativity in this department are [Basic Design ( I )] and [Special Topics (II)] are special courses related to innovation and creativity. Students must meet the requirements of "China University Only students who pass the inspection standards in accordance with the "Innovative and Creative Curriculum Implementation Measures" are eligible for graduation.
- (5) 探索園區課程說明：為培養學生自主學習能力、了解SDGs議題，啟動大一自主探索學習，本校學生須於大一修畢「探索園區」課程，所得學分可認列於外系9學分內。Description of the Discovery Park course: In order to cultivate students' independent learning abilities, understand SDGs issues, and initiate independent exploration learning in their freshman year, our students must complete the "Exploration Park" course in their freshman year, and the credits earned can be included in the 9 credits of external departments.
- (6) 須依據「中華大學學生基本能力指標實施辦法」、「中華大學建築與設計學院學生基本能力指標實施辦法」、「中華大學土木工程學系學生基本能力指標實施辦法」完成修業規定，始符合畢業資格。Students must complete the study requirements in accordance with the "Implementation Measures for the Basic Ability Indicators of Students of the Chung Hua University", "Implementation Measures of the Basic Ability Indicators of Students of the School of Architecture and Design of the Chung Hua University", and "Implementation Measures of the Basic Ability Indicators of Students of the Department of Civil Engineering of the Chung Hua University" to be eligible for graduation.
- (7) 取得本校核定之土木、建築相關B級以上專業證照乙張，始符合畢業資格。Only those who have obtained a B-level or above professional certificate related to civil engineering and construction approved by our school are eligible for graduation.
- (8) 以上課程資料，以當學期實際開課為主。The above course information is based on the actual courses offered in the current semester.