

土木工程學系課程地圖(基礎核心)

Criteria A - General courses 校定共同必修 (9)

Chinese/國文

Foreign language (I) /外文一

Foreign language (II) /外文二

Online English Program I /進階英語一

Online English Program II /進階英語二

Health Related Physical Fitness /健康體適能

Physical Education /體育*3

Service Learning/服務學習*2

Criteria B - Liberal Education 校定通識 (15)

A1 文學與藝術領域
A2 歷史思維領域
A3 世界文明領域
A4 哲學與道德思考領域
A5 公民意識與社會分析領域
A8 生命科學領域

Criteria C、D、E- Departmental required courses 系定必修 (76)

Calculus (general mathematics) (1) / 微積分1

Calculus (general mathematics) (2) / 微積分2

Calculus (general mathematics) (3) / 微積分3

Calculus (general mathematics) (4) / 微積分4

Conceptual Design Studio /土木工程概念設計

Engineering Graphics / 工程圖學

Surveying (I) / 測量學一

Surveying Practice / 測量實習

Applied Mechanics 1 / 應用力學1

Applied Mechanics 2 / 應用力學2

Engineering Mathematics 1 / 工程數學1

Engineering Mathematics 2 / 工程數學2

Computer Programming / 計算機程式

一年級

Engineering Mathematics 3 / 工程數學3

Mechanics of Materials / 材料力學

Fluid Mechanics / 流體力學

Engineering Statistics / 工程統計學

Engineering Material / 工程材料學

Soil Mechanics / 土壤力學

Transportation Engineering / 運輸工程

Structural Theory (I) / 結構學一

Engineering Material and Soil Mechanics Lab / 工程材料學與土壤力學實驗

General Physics (b) /普通物理學乙

General physics lab/普通物理學實驗

二年級

Reinforced Concrete / 鋼筋混凝土學

Hydrology / 水文學

Engineering Economics / 工程經濟

Foundation Engineering / 基礎工程

Hydraulic Engineering / 水利工程

Construction Management / 營建管理

Structural Theory and Fluid Mechanics Lab / 結構學與流體力學實驗

Civil Engineering Capstone Challenge / 土木工程設計實務

三年級

Criteria G- Field specialized elective courses 系定選修 (i.e. curriculum number is 501 or 521) (12)

Criteria H - Free-elective courses 自由選修 (8)

NTU Civil Engineering Department Course Framework

Criteria A	9
Criteria B	15
Criteria C、D、E	76
Criteria F	12
Criteria G	12
Criteria H	8

The least credits for graduation 132

Criteria F- Divided into six groups. Undergraduate students should choose one group and fulfill the group 's credit requirement. 群組課程 (12)

Criteria F-1
(土木學群 Civil Engineering Group)

Course Title	Credits	Remarks
Transportation Systems / 運輸系統	3	
Water Resources Engineering / 水資源工程	3	
Engineering and Law / 工程與法律	3	Count as only 1 course taken
Construction Engineering / 施工學	3	
Engineering Geology and Its Applications / 工程地質與應用	3	
Design of Steel Structure / 鋼結構設計	3	
Introduction of Seismic Design of Structures / 結構耐震設計導論	3	Count as only 2 courses taken
Prestressed Concrete / 預力混凝土	3	
Introduction to Surveying and Geomatics / 測量及空間資訊概論	3	
Object-Oriented Programming / 物件導向程式語言	3	
Introduction to Machine Learning and Deep Learning / 機器學習與深度學習導論	3	Count as only 1 course taken
Computational Statistics for Data Analytics / 數據分析之計算統計學	3	

Criteria F-2
(軌道運輸學群 Railway Engineering Group)

Course Title	Credits	Remarks
Railroad Transportation Engineering / 軌道運輸學	3	Required for F-2
Transportation Systems / 運輸系統	3	
Urban Transportation Planning / 都市運輸規劃	3	Required for F-2; take 1 out of 3 courses
Fundamental Electrical Engineering / 電工學與實習	3	
Track Engineering / 軌道工程	3	
Railway Operations and Management / 軌道營運與管理	3	
Mass Rapid Transit System Engineering / 捷運系統工程	3	Take 2 out of 6 courses
High Speed Rail Engineering / 高速鐵路工程	3	
Light Rail Transit System Engineering / 輕軌運輸系統工程	3	
Track Geotechnology / 軌道大地工程	3	

Criteria F-3
(建築學群 Architectural Engineering Group)

Course Title	Credits	Remarks
Introduction to Architecture / 建築導論	3	
Human Environment Relations / 人與環境關係導論	3	
Fundamentals of Architectural Design / 空間設計入門	3	Required for F-3
Architectural Design (I) / 建築設計(一)	3	
Architectural Design (II) / 建築設計(二)	3	
Architectural Design (III) / 建築設計(三)	4	
Architectural Design (IV) / 建築設計(四)	4	
Architectural Design (1) / 建築設計(一)	3	
Architectural Design (2) / 建築設計(二)	3	
Architectural Programming and Design Guidelines / 建築計畫與設計準則	3	
Building Physics and Sustainable Design / 建築物理與永續設計	3	
Behavior and System of Architectural Structure / 建築結構行為與系統	3	

Criteria F-4
(環境工程學群 Environmental Engineering Group)

Course Title	Credits	Remarks
Introduction to Environmental Engineering / 環境工程概論	3	Required for F-4
Water Supply and Sewerage / 自來水及下水道工程	3	Required for F-4; take 1 out of 2 courses
Engineered Systems for Water and Sewage Treatment / 自來水及汙水處理工程	3	
Environmental Chemistry / 環境化學	3	
Environmental Policy and Management / 環境政策與管理	3	
Water Pollution Control / 水污染防治	3	
Environmental Planning and Management / 環境規劃與管理	3	
Introduction to Ecological Methods/生態工法概論	3	
Introduction to Air Pollution/ 空氣污染概論	3	

Criteria F-5
(防災與永續學群 Natural Disaster Prevention Group)

Course Title	Credits	Remarks
Disaster Management and Civil Engineering / 災難管理與土木工程	3	Required for F-5
Engineering Geology and Its Applications / 工程地質與應用	3	
Rock Slope Engineering / 岩石邊坡工程	3	
Water Related Disasters, Lessons and Prevention / 水利災害案例與防治	3	
Introduction of Seismic Design of Structures / 結構耐震設計導論	3	Take 3 out of 7 courses
Disaster Reduction Planning / 城鄉安全與防災	3	
Introduction to Surveying and Geomatics / 測量及空間資訊概論	3	
Geographic information system for disaster reduction / 地理資訊系統與防災	3	

Criteria F-6
(木構造學群 Wood Construction Group)

Course Title	Credits	Remarks
Wooden Structure Design / 木構造設計	3	Required for F-6
Introduction to Traditional Wood Structures in Taiwan / 台灣傳統木建築概論	3	
Design and Construction of Wood Structures (I) / 木質構造建築設計與施工一	3	
Design and Construction of Wood Structures (II) / 木質構造建築設計與施工二	3	Take 3 out of 6 courses
Stage Craft (I) / 舞台技術一	2	
Structural Systems for Civil Engineering / 土木結構系統	3	
Design of Steel Structure / 鋼結構設計	3	

土木工程學系研究所課程(碩士班)

1. 修業年限 Years of Study

碩士班修業期限以一至四年為限, 但以在職進修身分錄取或應修畢業學分數達六十學分以上之研究生未在規定修業期限修滿應修課程或未完成學位論文者, 得酌予延長其修業期限, 最高以二年為限。

The duration of the master's degree program is limited to one to four years. However, part-time students or students who require 60 or more credits for graduation but cannot complete the required courses or the thesis within the prescribed period of study may extend the period of their study for a maximum of two years.

2. 臺大土木系碩士班研究生必修及學分規定

General Course and Credit Regulations

碩士班 Master's Degree Program			
組 別 Division	必修科目名稱 Required Courses	應修最低 畢業學分數 Required Credits for Graduation	備 註 Remarks
大地工程組 Geotechnical Engineering	000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M0180 大地工程專題討論(四學期、詳備註 1) 521 M0180 Seminar on Geotechnical Engineering (4 semesters, see remarks for related regulations)	24	1. 大地工程、測量及空間資訊、結構力學、水利工程、運輸工程、電腦輔助工程、營建工程與管理組專題討論—「以修習四學期且均及格為原則, 惟提前完成學位考試(僅修業二、三學期者)且於同一學期繳交論文者, 則於修業期間內每學期均需修習且及格。」
測量及空間資訊組 Surveying and Geospatial Engineering	000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M6430 測量專題討論(四學期、詳備註 1) 521 M6430 Seminar on Surveying (4 semesters, see remarks for related regulations)	24	1. Students should pass Seminar in each of the first four semesters. If a student completes the degree examination in less than four semesters and submits the master's

結構工程組 Structural Engineering	000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M6200 結構力學專題討論(四學期、詳備註 1) 521 M6200 Seminar in Structural Engineering (4 semesters, see remarks for related regulations)	24	thesis for graduation in the same semester, the student should pass Seminar in every semester during the student's study in the program. If a student does not pass any of the required Seminar courses, the student must retake and pass it.
水利工程組 Hydraulics Engineering	000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M0040 水利工程專題討論(四學期、詳備註 1) 521 M0040 Seminar in Water Resources Engineering (4 semesters, see remarks for related regulations) 521 U0570 明渠水力學 521 U0570 Open-channel Hydraulics 521 M2410 高等水文分析 521 M2410 Advanced Hydrologic Analysis	24	2.大學部(U 字頭以外)課程之學分數不計入應修最低畢業學分數。 2. Credits earned from undergraduate level courses, are not counted in the required credits (except for the courses with "U" code in the Curriculum Identity Number). 3.各組應修最低畢業學分數不包含論文及專題討論。 3. Credits earned from Thesis (M.S.) and Seminar are not counted in the required credits.
交通工程組 Transportation Engineering	000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M0320 運輸工程專題討論(四學期、詳備註 1) 521 M0320 Seminar on Transportation Engineering (4 semesters, see remarks for related regulations)	24	4.本組碩士班研究生若依本校交換計畫或雙學位計畫申請並核准者，可提出相關書面申請，並經指導教授及所長同意，則得於出國交換或進修期間以修課及格之課程抵免當學期之專題研究討論。(104.12.07 課程委員會討論通過)
電腦輔助工程組 Computer-Aided Engineering	111 學年度第二學期以前 Prior to 2023 Spring Semester(111-2) 000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M6230 電腦輔助工程專題討論(四學期、詳備註 1)	24	4. Students enrolled in an international exchange or double degree program may submit a written application and, upon approval from the thesis advisor as well as the Department

	<p>521 M6230 Computer-aided Engineering Seminar (4 semesters, see remarks for related regulations)</p> <p>521 M6620 英文寫作基礎</p> <p>521 M6620 Fundamentals of English Writing</p> <p>(若曾修習學術英文寫作或於下列以母語為英文的國家之大學取得學位可免修習本課：澳洲、加拿大、蓋亞那共和國、愛爾蘭、紐西蘭、南非共和國、英國、美國和西印度群島)</p> <p>(Exemption may be granted if one of the following English language requirements is fulfilled:</p> <ol style="list-style-type: none"> 1. You have taken and passed the course Academic English Writing; 2. You have successfully completed a degree at a University in one of the following native English speaking countries: Australia, Canada, Guyana, Ireland, New Zealand, South Africa, United Kingdom, United States of America and West Indies.) <p><u>112 學年第一學期起適用 From 2023 Fall Semester (112-1)</u></p> <p>000 90010 學術倫理</p> <p>000 90010 Academic Ethics</p> <p>521 M0010 碩士論文</p> <p>521 M0010 Thesis (M.S.)</p> <p>521 M6230 電腦輔助工程專題討論(四學期、詳備註 1)</p> <p>521 M6230 Computer-aided Engineering Seminar (4 semesters, see remarks for related regulations)</p> <p>521 M6630 學術英文寫作</p> <p>521 M6630 Academic English Writing</p> <p>(可提出免修或可替代之課程申請，經指導教授同意及組務會議通過後免修。)</p> <p>(You can apply for a course exemption or substitution. However, the application should be first approved by your advisor, and the final decision will be made by the committee formed by the CAE faculty members.)</p>		<p>Chair, they will be exempt from the required Seminar courses covering the period of international exchange or study for the second degree.</p>
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營建工程與管理組 Construction Engineering and Management (Full-time program)	000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M5950 營建管理專題討論(四學期、例外詳備註 1) 521 M5950 Seminar on Construction Management (4 semesters, see remarks for exceptions) 521 M5790 工程專案管理 521 M5790 Project Management for Construction	27	113 學年度第一學期起適用 應修最低畢業學分為 24 學分。 From 2024 Fall semester (113-1) Credit requirements for the master's degree program: 24 credits
碩士在職專班 Executive Master's Degree Program			
組 別 Division	必修科目名稱 Required Courses	應修最低畢業學分數 Required Credits for Graduation	備 註 Remarks
營建工程與管理組 Construction Engineering and Management	000 90010 學術倫理 000 90010 Academic Ethics 521 M0010 碩士論文 521 M0010 Thesis (M.S.) 521 M6590 跨領域聯合專題討論 521 M6590 Multi-discipline Seminar	26(含專題討論 2~4 學分) 26 (including 2-4 credits of Seminar)	1.大學部(U 字頭以外)課程之學分數不計入應修最低畢業學分數。 1. Credits earned from undergraduate level courses, except for the courses with "U" code in the Curriculum Identity Number, are not counted in the required credits. 2.至少需修習 2 學期聯合專題討論課程(1 學分)，且該學分數計入應修最低畢業學分數以 4 學分為上限。 2. At least 2 semesters of the Joint Seminar are required, but 4 credits at most can be counted for required credits. 3.應修最低畢業學分數不包含論文。 3. Credits earned from Thesis (M.S.) are not counted in the required credits.

3. 修課規定 Additional Course and Credit Regulations

組別 Division	修課各組規定 Regulations
<p style="text-align: center;">大地組 Geotechnical Engineering</p>	<p>108 學年度第二學期前 Prior to the second semester of Academic Year 2019</p> <p>授權指導教授全權規定及負責其指導學生應選科目內容。 A student's thesis advisor has authority over and is responsible for the student's course selection.</p> <p>109 學年度第一學期起適用 Began from the first semester of Academic Year 2020</p> <ol style="list-style-type: none"> 1. 大地組現行碩士班畢業學分為 24 學分，其中 18 學分必須滿足三大領域的最低修習學分要求，分別為共同領域(大地材料組成律模式、大地工程之數值分析、大地工程可靠度分析與設計、大地工程實務)最低修習學分為 6 學分；土壤領域(中等土壤力學、土壤動力學、大地地震工程、土壤行為學、地工合成材料之應用、基礎設計與施工一、深開挖設計與分析)最低修習學分為 9 學分；岩石領域(岩石力學、高等工程地質、隧道工程)最低修習學分為 3 學分。 1. The required credits for graduation are 24 credits. Students must meet the minimum requirement of credits in three major areas. Six credits are required from the common areas, including Constitutive Law of Geomaterials, Numerical Methods in Geotechnical Engineering, Geotechnical Reliability Analysis and Reliability-based Design, and Geotechnical Engineering Practice. Nine credits are required in the area of soil mechanics, including Intermediate Soil Mechanics, Soil Dynamics and Foundation Vibration, Geotechnical Earthquake Engineering, Soil Behavior, Application of Geosynthetics, Foundation Design and Construction (I) and Deep Excavation Analysis and Design. Three credits are required in the area of rock mechanics, including Rock Mechanics, Advanced Engineering Geology, and Tunnel Engineering. 2. 若該學年本組未開授上開課程者，可以三校聯盟相近課程替代，但需事先撰寫學生報告書並經授課教師和指導教授同意。(110.1.14 組務會議修正通過) 2. If any of the above courses is not offered during an academic year, a student may take a similar course offered by the National Taiwan University System. Prior to taking the course, the special request form must be filled out by the student and approved by both the course instructor and the student's thesis advisor. 3. 授權指導教授全權規定及負責其指導學生其他應選科目內容。(110.1.14 組務會議修正通過) 3. A student's thesis advisor has authority over and is responsible for the student's other course selection.

<p>結構組 Structural Engineering</p>	<ol style="list-style-type: none"> 1. 核心課程：以下科目 6 科選 4 科，必須修習且達 (C-) 方能畢業—本組開授之"高等結構學、結構動力學、有限元素法、塑性力學、高等混凝土學"，及"彈性力學"共 6 科。 1. A student must take 4 out of the following 6 core courses with a grade of C- or above: Advanced Structural Theory, Structural Dynamics, Finite Element Method, Theory of Plasticity, Advanced Concrete Theory, and Theory of Elasticity. 2. 選修「非本組教師開授之 6 選 4 核心課程」需經過指導教授及本組授課教師同意。 2. A student requires the approval from the thesis advisor and the instructor who teaches the same courses in the structural division before taking any courses in the 4-out-of-6 core courses from other divisions or departments. 3. 授權指導教授全權規定及負責其指導學生應選科目內容。 3. A student's thesis advisor has authority over and is responsible for the student's course selection.
<p>水利組 Hydraulic Engineering</p>	<p>授權指導教授全權規定及負責其指導學生應選科目內容。</p> <p>A student's thesis advisor has authority over and is responsible for the student's course selection.</p>
<p>交通組 Transportation Engineering</p>	<ol style="list-style-type: none"> 1. 本組碩士班研究生於畢業前應修過本組至少四位專任老師所開授之研究所課程，若借調或休假之專任老師於該年度未開授課程，該專任老師可選定一門交通組研究所課程視同可承認之課程 (101.4.10 組務會議修正通過)。若本組碩士班研究生於大學時已選修本組專任老師所開授研究所課程 (M 或 U 字頭) 課程且及格者，亦可予以承認為前述畢業要求中本組專任老師所開授之課程。 1. A student must pass courses from at least four different full-time professors in the transportation division. A professor who is on sabbatical leave or secondment from the university can specify other courses in the division as the alternative to the professor's courses. If a student has passed the graduate-level courses (Curriculum Identity Number with M or U) offered by the full-time professors in the transportation division during the undergraduate study, passing these courses can be recognized as fulfilling the requirement above. 2. 授權指導教授全權規定及負責其指導學生應選科目內容。 2. A student's thesis advisor the authority over and is responsible for the student's course selection.
<p>電輔組 Computer-Aided Engineering</p>	<ol style="list-style-type: none"> 1. 應於第一學期加退選前決定指導教授，並由指導教授核可其它選修科目內容。 A student must have a thesis advisor by the deadline of the course add/drop period of the first semester after enrollment. The thesis advisor is responsible for the student's course selection. 2. 論文口試初試：於申請正式論文口試前須先經過組內初試，由本組教師二分之一以上認可，方得申請正式論文口試。

	<p>Preliminary oral defense: A student must pass the preliminary oral defense of their master's thesis and obtain approval from at least half of the professors in the division before they apply for the official oral defense.</p>
<p>營管組(一般生) Construction Engineering and Management (Full-time program)</p>	<p>1. 應修最低畢業學分規定如下: 27 學分 (不含專題討論及碩士論文及 2 學分之在職專班課程), 其中至少有 18 學分以上為本組所開授之課程。</p> <p>1. .Credit requirements for the master's degree program: 27 credits (excluding seminars and the Master's Thesis and 2-credit courses that are specifically for the Executive Master's Degree Program), at least 18 out of 27 credits must be with from the courses offered by this division.</p> <p>113 學年度第一學期起適用 From 2024 Fall semester (113-1) 應修最低畢業學分規定如下: 24 學分 (不含專題討論、專案研究、及碩士論文及 2 學分之在職專班課程), 其中至少有 12 學分以上為本組所開授之課程。 Credit requirements for the master's degree program: 24 credits (excluding seminars, independent study, and the Master's Thesis and 2-credit courses that are specifically for the Executive Master's Degree Program), at least 12 out of 24 credits must be with from the courses offered by this division.</p> <p>2. 須經指導教授核可後, 方得提出論文口試。</p> <p>2. The application for the oral defense of their thesis must be approved by their advisor.</p> <p>3. 論文口試初審: 學生於申請論文口試前, 須先於專題研討(Seminar)所排定之初審日期進行口試初審, 由本組專任教師二分之一以上認可, 方得申請論文口試, 未達水準者, 須於申請論文口試截止日期前進行書面複審並經本組專任教師三位以上認可, 方得提出論文口試。</p> <p>3. Preliminary oral defense: Before applying for official oral defense, students must take the preliminary oral defense scheduled in the Seminar and pass the preliminary oral defense with the approvals from at least one half of the faculty members in the division. Students who had failed the preliminary oral defense must pass the written defense review with the approvals from at least 3 faculty members before the application deadline of the official oral defense.</p> <p>4. 碩士班畢業前至少須有一篇論文投稿至期刊或研討會。若申請畢業該學期無適當之研討會可供投稿, 學生可繳交其期刊或研討會論文草稿給本組組務教授並由組務教授簽名核可。</p> <p>4. Students must have at least one paper that has been submitted to a journal or conference. If there is no conference suitable for the students to attend during the semester of applying for graduation, students may submit their paper draft to the coordinating professor of the Construction Engineering and Management Division for approval and signature.</p>

	<p>5. 碩士班在學期間應主動參與本組組務工作之推展，並於口試初審時提出對本組或營建工程與管理界之具體貢獻及服務說明，以列入初審之審核參考。</p> <p>5. Students are required to participate in the service of divisional affairs during their study and to demonstrate in their preliminary oral defense their contributions or efforts made to the division or the field of construction engineering and management for the consideration of preliminary oral defense.</p>
<p>營管組碩士(在職專班) Construction Engineering and Management (Executive Master's Degree Program)</p>	<p>1. 應修最低畢業學分規定如下：26 學分，不含論文學分數，但應含至少修習 2 學期之聯合專題討論，惟該課程計入畢業學分以 4 學分為上限。</p> <p>1. The graduation requirements are a minimum of 26 credits of courses (including at least 2 semesters of the 1-credit Joint Seminar, up to a maximum of 4 credits) excluding Thesis (M.S.).</p> <p>2. 須經指導教授核可後，方得提出論文口試。</p> <p>2. A student may apply for the oral defense of the thesis upon approval by the thesis advisor.</p> <p>3. 學生在學期間應主動參與本組組務工作之推展，其服務內容可做為指導教授是否核可其論文口試申請之參考。</p> <p>3. Students are required to participate in the service of divisional affairs during their study and their contributions or efforts made to the division may be considered toward their advisor's approval of their application of official oral defense.</p>
<p>測量及空間資訊組 Surveying and Geospatial Engineering</p>	<p>授權指導教授全權規定及負責其指導學生應選科目內容。</p> <p>A student's thesis advisor has authority over and is responsible for the student's course selection.</p>

1. 修業年限 Years of Study

1. 博士班修業期限以二至七年為限。但以在職進修身分錄取或應修畢業學分數達六十學分以上之研究生未在規定修業期限修滿應修課程或未完成學位論文者，得酌予延長其修業期限，最高以二年為限。

The duration of the study is limited to two to seven years. However, part-time students or students who require 60 or more credits for graduation but cannot complete the required courses or the dissertation within the prescribed period of study may extend the period of their study for a maximum of two years.

2. 逕行修讀博士學位者，自轉入博士班起，其修業期限依照前項規定辦理。

The duration of study for a direct Ph.D. student after enrolment into the direct doctoral program is subjected to the same regulations in the preceding paragraph. (A direct Ph.D. student is a student transferred from the master's degree program to the doctoral program.)

2. 學分規定 Credit Requirement Regulations

1. 入博士班後應至少修滿 18 學分，可在本系所或相關系所開授之課程中選讀，但不包括專題討論、論文、外國語文、**在職專班課程**或入博士班以前修讀之學分，若各學術分組有更嚴格之要求從其規定【博士班研究生必修科目表如下頁】。

Students in the doctoral program must complete a minimum of 18 credits after enrolment, which may include credits earned through courses offered in the department or by other relevant departments but must exclude credits of division seminars, dissertations, **Executive Master's Degree Program courses**, and foreign language courses, and credits earned prior to enrolment. Additional or stricter division regulations must be followed.

2. 修習科目應包括入學前由甄試工作小組指定之必選科目，此項必選科目之學分，不能充抵前項規定內之學分數。

Additional course requirements made by the Admission Committee, if any, must be completed and of which credits cannot be counted towards achieving credit requirements.

3. 博士班研究生每學期課程之選定，必須經指導教授或導師同意，否則不予承認。

Courses selection of a student must be approved by the student's dissertation supervisor or academic advisor.

4. 直攻博士學位者，自轉入博士班起，其學分規定依上述規定辦理

A direct Ph.D. student must follow the foregoing credit requirements after enrolment into the doctoral program.

3. 臺大土木系博士班研究生各組必修科目及學分規定

Division Regulations on Required Courses and Credits

主修學門 Division	必修科目名稱 Required Subjects	應修最低畢業學分數 Minimum Credit Requirement towards Graduation	備註 Remarks
大地工程 Geotechnical Engineering	000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M0180 大地工程專題討論(四學期)Seminar on Geotechnical Engineering (4 semesters, the credits could not be counted for credits required toward graduation)	一般入學生：18 逕修博士生：30 (含碩士班期間所修學分) Standard requirement: 18 credits. Requirement for direct Ph.D. students: 30 (including credits earned during the Master's degree program)	1. 大學部(U字頭以外)課程之學分數不計入應修最低畢業學分數。 Credits earned through undergraduate-level courses cannot be counted towards the minimum credit requirement (except courses with U code in the Curriculum Identity Number). 2. 各組應修最低畢業學分數不包含論文及專題討論。 The minimum credit requirement cannot include credits earned for dissertation and seminars. 3. 博士生若依本校交換計畫到科技部、教育部之補助出國進修，可提出相關書面申請，並經指導教授及所長同意，則得於出國交換或進修期間以修課及格之課程抵免當學期之專題研究討論。 (104.12.07 課程委員會通過)
測量及空間資訊 Surveying and Geospatial Engineering	000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M6430 測量專題討論(六學期) Seminars on Surveying (6 semesters)	一般入學生：18 逕修博士生：30 (含碩士班期間所修學分) Standard requirement: 18 Requirement for direct Ph.D. students: 30 (including credits earned during the Master's degree program)	
結構工程 Structural Engineering	000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M6200 結構力學專題討論(四學期) Seminars in Structural Engineering (4 semesters)	一般入學生：24 逕修博士生：42 (含碩士班期間所修學分) Standard requirement: 24 Requirement for direct Ph.D. students: 42 (including credits earned during the Master's degree program)	

水利工程 Hydraulic Engineering	000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M0040 水利工程專題討論(四學期)Seminars in Water Resources Engineering (4 semesters)	一般入學生：24 逕修博士生：42 (含碩士班期間所修學分) Standard requirement: 24 Requirement for direct Ph.D. students: 42 (including credits earned during the Master's degree program)	Students enrolled in the doctoral program that plan to apply for the international exchange program sponsored by the Ministry of Science and Technology or Ministry of Education, upon approval from the dissertation supervisor as well as the department chair may have the seminar exempted for the semester, covering the period of exchange or sabbatical overseas.
交通工程 Transportation Engineering	000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M0320 運輸工程專題討論(四學期) Seminar on Transportation Engineering (4 semesters)	一般入學生：18 逕修博士生：30 (含碩士班期間所修學分) Standard requirement: 18 Requirement for direct Ph.D. students: 30 (including credits earned during the Master's degree program)	
營建工程與管理 Construction Engineering and Management (CEM)	000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M5950 營建管理專題討論(六學期) Seminars on Construction Management (6 semesters) 521 M6300 營建管理專案研究 Independent Study on Construction Management	一般入學生：18 逕修博士生：30 (含碩士班期間所修學分) Standard requirement: 18 Requirement for direct Ph.D. students: 30 (including credits earned during the Master's program)	
人工智慧 AI for Engineering Application	000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M0330 人工智慧工程應用專題討論 (四學期) Seminar on Artificial Intelligence for Engineering Applications (4 semesters)	一般入學生：18 逕修博士生：30 (含碩士班期間所修學分) Standard requirement: 18 credits. Requirement for direct Ph.D. students: 30 (including credits earned during the Master's degree program)	

<p>電腦輔助工程 Computer Aided Engineering (CAE)</p>	<p><u>111 學年度第二學期以前</u> Prior 2023 Spring semester</p> <p>000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M6230 電腦輔助工程專題討論 (六學期) Computer-aided Engineering Seminar (6 semesters) 521 M6620 英文寫作基礎 Fundamentals of English Writing</p> <p>(若曾修習學術英文寫作或於下列以母語為英文的國家之大學取得學位可免修習本課：澳洲、加拿大、蓋亞那共和國、愛爾蘭、紐西蘭、南非共和國、英國、美國和西印度群島)</p> <p>(Exemption may be granted if one of the following English language requirements is fulfilled:</p> <p>1. You have taken and passed the course Academic English Writing;</p> <p>2. You have successfully completed a degree at a University in one of the following native English speaking countries: Australia, Canada, Guyana, Ireland, New Zealand, South Africa, United Kingdom, United States of America and West Indies.)</p> <p><u>112 學年第一學期起適用</u> From 2023 Fall Semester (112-1)</p> <p>000 90010 學術倫理 Academic Ethics 521 D0010 博士論文 Dissertation (Ph.D.) 521 M6230 電腦輔助工程專題討論 (六學期) Computer-aided Engineering Seminar (6 semesters) 521 M6630 學術英文寫作 Academic English Writing (可提出免修或可替代之課程申請，經指導教授同意及組務會議通過後免修。)</p> <p>(You can apply for a course exemption or substitution. However, the application should be first approved by your advisor, and the final decision will be made by the committee formed by the CAE faculty members.)</p>	<p>一般入學生：18 逕修博士生：30 (含碩士班期間所修學分)</p> <p>Standard requirement: 18 Requirement for direct Ph.D. students: 30 (including credits earned during the Master's program)</p>	
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4. 各組修課補充規定 Supplementary Division Regulations on Study Requirements

主修學門 Division	各組修課補充規定 Supplementary Regulations
大地組 Geotechnical Engineering	<p>107 學年度第二學期前：無特別規定 Prior to the second semester of Academic Year 2018: No supplementary regulations.</p> <p>108 學年度第一學期起適用 Began from the first semester of Academic Year 2019</p> <p>大地組現行博士班畢業學分為 18 學分，其中必須滿足三大領域的最低修習學分要求，分別為共同領域(大地材料組成律模式、大地工程之數值分析、大地工程可靠度分析與設計、大地工程實務)最低修習學分為 6 學分；土壤領域(中等土壤力學、土壤動力學、大地地震工程、土壤行為學、土工合成材料之應用、基礎設計與施工一、深開挖設計與分析)最低修習學分為 9 學分；岩石領域(岩石力學、高等工程地質、隧道工程)最低修習學分為 3 學分。上述修課規定若學生於碩士班期間已通過上述課程者則不在此限，亦即可抵課程但不抵學分。(108.8.19 學術委員會修訂、109.2.2 組務會議修正通過)</p> <p>The total number of graduation credits is 18 credits. Students must meet the credit requirements in three major categories. Six credits are required from the common category, including: Constitutive Law of Geomaterials, Numerical Methods in Geotechnical Engineering, Geotechnical Reliability Analysis and Reliability-based Design, and Geotechnical Engineering Practice. Nine credits are required in the category of soil mechanics, including: Intermediate Soil Mechanics, Soil Dynamics and Foundation Vibration, Geotechnical Earthquake Engineering, Soil Behavior, Application of Geosynthetics, and Foundation Design and Construction (I). Three credits are required in the category of rock mechanics, including: Rock Mechanics, Advanced Engineering Geology, and Tunnel Engineering. Students who have passed the courses during their Master's degree study may apply for exemption from the course requirements above, but the total required number of credits is unchanged.</p> <p>109 學年度第一學期起適用 Began from the first semester of Academic Year 2020</p> <p>大地工程組現行博士班畢業學分為 18 學分，其中必須滿足三大領域的最低修習學分要求，分別為共同領域(大地材料組成律模式、大地工程之數值分析、大地工程可靠度分析與設計、大地工程實務)最低修習學分為 6 學分；土壤領域(中等土壤力學、土壤動力學、大地地震工程、土壤行為學、土工合成材料之應用、基礎設計與施工一、深開挖設計與分析)最低修習學分為 9</p>

	<p>學分；岩石領域(岩石力學、高等工程地質、隧道工程)最低修習學分為 3 學分。上述修課規定若學生於碩士班期間已通過上述課程且等第成績達 A 者則不在此限，亦即可抵課程但不抵學分。(110.1.14 組務會議修正通過)</p> <p>The total number of graduation credits is 18 credits. Students must meet the credit requirements in three major categories. Six credits are required from the common category, including: Constitutive Law of Geomaterials, Numerical Methods in Geotechnical Engineering, Geotechnical Reliability Analysis and Reliability-based Design, and Geotechnical Engineering Practice. Nine credits are required in the category of soil mechanics, including: Intermediate Soil Mechanics, Soil Dynamics and Foundation Vibration, Geotechnical Earthquake Engineering, Soil Behavior, Application of Geosynthetics, and Foundation Design and Construction (I). Three credits are required in the category of rock mechanics, including: Rock Mechanics, Advanced Engineering Geology, and Tunnel Engineering. Students who have obtain the course grades of A or above during their Master's degree study may apply for exemption from the course requirements above, but the total required number of credits is unchanged.</p>
結構組 Structural Engineering	<p>1. 博士班學生畢業前最低修課標準為24學分，應以不重複修習碩士階段已修過課程為原則。 Students must complete a minimum of 24 credits towards completion of the degree, and are not permitted to retake the courses that have already been taken towards their Master's degree.</p> <p>2. 在應修畢之 24 學分中，至少 6 學分為第二專長領域。指導教授負責該研究生第二專長領域之修課指導。 At least 6 credits of the 24 credits should be earned in a minor discipline. Courses taken in the minor discipline should be determined by the student's dissertation supervisor.</p> <p>3. 第二專長領域之修課需為一系列之相關課程，且其中至少包括一門研究所課程（U 或 M 或 D 字頭課程）。Courses to take in the minor discipline should be a series of related courses, including at least one graduate course (i.e., a course with U, M, or D code in the Curriculum Identity Number). 111.6.15 修訂 Revised on 15 June 2022</p>
水利組 Hydraulic Engineering	<p>授權指導教授全權規定負責其指導學生應選科目內容。 A student's dissertation supervisor has authority over and is responsible for the student's course selection.</p>
交通組 Transportation Engineering	<p>無特別規定 No division-specific regulations</p>
電輔組 Computer Aided Engineering	<p>1. 除主修『電腦輔助工程』外，必須於本所其他領域或相關研究所中選擇一輔修領域。 In addition to Computer Aided Engineering, students must choose a minor discipline in other divisions or related graduate institutes.</p>

	<p>2. 必選科目：於輔修領域選修 9 學分之課程（由指導教授與博士生共同討論決定）。</p> <p>Required courses: Students must complete 9 credits for courses in the minor discipline and the courses are selected jointly by students and their dissertation supervisors.</p> <p>3. 選修科目：由博士生與指導教授共同討論決定。</p> <p>Elective courses will be selected jointly by students and their dissertation supervisors.</p>
營管組 Construction Engineering and Management	<p>須修習本組各專任教師至少一門課。專任老師含學生入學後三年內(含)新加入本組之老師。兩位以上專任教師合授之課程僅計入一位。修習在職專班之課程，得列入專任教師之計算，然學分不計入畢業學分。</p> <p>A student is required to take at least one course from each of the full-time professors of this division, including those joining the division within three years after the admission of the student. If a course is conducted by two or more full-time professors, it will only be counted as being taken under one of them. The regulations outlined above also apply to courses taken in the Executive Master's Degree Program, while these credits will not be counted towards graduation credits.</p>
測量及空間資訊組 Surveying and Geospatial Engineering	<p>選修課程應由博士班研究生與其指導教授共同商議。</p> <p>Course selection should be determined jointly by the student and the student's dissertation supervisor.</p>
人工智慧工程領域 AI for Engineering Applications	<p>授權指導教授全權規定負責其指導學生應選科目內容。</p> <p>A student's dissertation supervisor has authority over and is responsible for the student's course selection.</p>