

NTU Civil Engineering Department Required Courses Sheet (for Undergraduate Semester 2018)

NTU Civil Engineering Department Courses Framework (for Undergraduate Semester 2018)	
Criteria A - General courses	12
Criteria B - Liberal Education	12
Criteria C - Departmental required general courses	12
Criteria D - Departmental required professional courses	49
Criteria E - Field specialized required courses	14
Criteria F - divided into five groups, undergraduate students should take one group and fit the group's credit requirement.	12
Criteria G - Field specialized elective courses (i.e. curriculum number is 501 or 521)	12
Criteria H - free-elective courses	8
The least credits for graduation	131

Criteria A (12 units) - General courses

Course Title	Suitable Year to Study	Credits
Chinese (I) (II) /國文領域	1	6
Foreign language (I) (II) /外文領域	1	6
Calculus (general mathematics) (1) (2)(3) (4) /微積分1	1	8
Conceptual Design Studio /土木工程概念設計	1	2
Engineering graphics /工程圖學	1	2
Physical Model Design Laboratory /土木工程基本實作	1	2
Surveying (I) /測量學一	1	2
Applied mechanics /應用力學	1	3
Surveying practice /測量實習	1	1
Computer programming /計算機程式	1	3

Course Title	Suitable Year to Study	Credits
General Physics (b) /普通物理學乙上	2	3
General physics lab /普通物理學實驗	2	1
Engineering mathematics (I) /工程數學一	2	3
Engineering mathematics (II) /工程數學二	2	3
Mechanics of materials /材料力學	2	4
Fluid mechanics /流體力學	2	3
Engineering statistics /工程統計學	2	3
Engineering material and soil mechanics lab /工程材料學與土壤力學實驗	2	1
Engineering material /工程材料學	2	2
Soil mechanics /土壤力學	2	3

Course Title	Suitable Year to Study	Credits
Structural theory and fluid mechanics lab /結構學與流體力學實驗	3	1
Reinforced concrete /鋼筋混凝土學	3	3
Hydrology /水文學	3	3
Engineering economics /工程經濟	3	2
Civil Engineering Capstone Challenge /土木工程設計實務	3 or 4	3
Transportation Engineering /運輸工程	3	3
Structural Theory (I) /結構學一	3	3
Foundation Engineering /基礎工程	3	3
Hydraulic Engineering /水利工程	3	2
Construction Management /營建管理	3	3

Course Title	Suitable Year to Study	Credits
Criteria B - Liberal Education	1-4	12

Course Title	Suitable Year to Study	Credits
Criteria F - divided into six groups. Undergraduate students should choose one group and fulfill the group's credit requirement.	2-3	12

Criteria F-1 (12 units, Civil Engineering Group) - 4 out of 9 courses

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	
Engineering Geology and Its Applications /工程地質與應用	3	
Design of Steel Structure /鋼結構設計	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	
Visualization in Architecture Engineering Construction /視覺化技術在工程上之應用	3	Just counting one if you take both courses
Introduction of Seismic Design of Structures /結構耐震設計導論	3	

Criteria F-2 (Railway Engineering Group) - 4 out of 9 courses

Course Title	Credits	Remarks
Railroad Transportation Engineering /軌道運輸學	3	Required Course
Transportation Systems /運輸系統	3	Required Course, take 1 out of 3 courses
Automation and Robotics /自動化和機器人技術	3	
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	2 out of 5 courses
Mass Rapid Transit System Engineering /捷運系統工程	3	
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	

Criteria F-3 (Architectural Engineering Group) - 4 out of 8 courses

Course Title	Credits	Remarks
Introduction to Architecture /建築導論	3	Required Course
Human Environment Relations /人與環境關係導論	3	Required Course
Fundamentals of Architectural Design /空間設計入門	3	Required Course
Architectural Design (1) /建築設計 (一)	6	unless you take the NTUST courses: Architectural Design (1)(2)
Architectural Design (2) /建築設計 (二)	6	
Architectural Design (1) /建築設計 (一)	3	unless you take the NTUCE courses: Architectural Design
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 (Environmental Engineering Group) - 4 out of 8 courses

Course Title	Credits	Remarks
Introduction to Environmental Engineering and Science /環境工程與科學	3	Required Course
Water Supply and Sewerage /自來水及下水道工程	3	Required Course, 1 out of 2 courses
Water and Wastewater Treatment /自來水及污水處理工程	3	
Environmental Protection /環境保護	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	

Criteria F-5 (Natural Disaster Prevention Group) - 4 out of 8 courses

Course Title	Credits	Remarks
Disaster Management and Civil Engineering /災難管理與土木工程	3	Required Course
Engineering Geology and Its Applications /工程地質與應用	3	3 out of 7 courses
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	
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	
Introduction to Geographic Information Systems /地理資訊系統概論	3	

Criteria F-6 (Wood Construction Minor)

Course Title	Credits	Remarks
Wooden structure design /木構造設計	3	Required Course
Introduction to Traditional Wood Structures in Taiwan /台灣傳統木建築概論	3	3 out of 6 courses
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	
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	