## Course Catalog for the Department of Construction Engineering

## master class

## for academic year of 2023

12年3月21日111學年度第3次系務會議通過

				112 年 3 月 21 日 111 學年度第 3 次系務會議通過 Freshman year						
	Discipline			Fall semester		Spring semester				
				Course name	Credit hour	Teaching Hour	Course name	Credit hour Teaching He		
	Required courses	8 credit hours	(Required)	Seminars(I)	1	2	Seminars(II)	1 2		
	comses	Structural Engineering Field		©Design,repair,rehabilitation and retrofit of bridge structures	3	3	▲ Earthquake Engineering	3 3		
				Advanced Reinforced Concrete	3	3	Experimental Mechanics	3 3		
				Finite Element Method	3	3	Advanced Structure Analysis	3 3		
				Theory of Elasticity	3	3	Nurnerical Analysis	3 3		
				Advanced Strenght of Materials	3	3	Advanced Engineering Materials (Taught in English)	3 3		
				▲ Structural Dynamics	3	3	Earthquake - Proof Science Technology	3 3		
				▲ High-Performance Concrete (Taught in English)	3	3	▲ Plasticity and composite Material	3 3		
				©Design of Wood Structures (Taught in English)	3	3	▲ Durability Design and Evaluation of Concrete Structures (Taught in English)	3 3		
				▲ Designof welded steel structures-principal and practice	3	3				
				©Building Structure Design	3	3	*Advance Steel Structure (Taught in English)	3 3		
				Advance Steel Structure (Taught in English)	3	3				
				Evaluation,Rehabilitation and Retrofit of Bridges (Taught in English)	3	3				
		Engineering Management Field		●Construction Project Planning & Management	3	3	Construction Management Information System	3 3		
	Elective courses		24 credit hours (Required)	•Systems Thinking and Learning Organization (Taught in English)	3	3	Engineering Data Analysis	3 3		
				Construction Operations Research	3	3	International Construction Management	3 3		
				Principles Engineering Eoonomics	3	3	System Dynamics II	3 3		
Professional courses							Total Quality Management	3 3		
E							Productivity Measurement and Control	3 3		
							System Dynamics I	3 3		
							* ● © Construction Operations Research	3		
		Geotechnical field		Physics and Engineering Properties of Soil	3	3	Soil Dynamics	3 3		
				Foundation Analysis and Evaluation	3	3	Slope Stability	3 3		
				Ground Water and Seepage	3	3	Numberical Analysis Geotechuical Engineering	3 3		
							Theory and Application of Monitoring Technique	3 3		
							▲ Deep Foundation Engineering	3 3		
		construction technology field		Sustainable Construction	3	3	▲ Service Life Prediction of Buildings	3 3		
				Integration application on informationi technology of smart-building physics	3	3	Selection and Application of Ecological Engineering Materials (Taught in English)	3		
				▲ Building Life Cycle Engineering (Taught in English)	3	3	Analysis and Planning of Engineering Technology Projects	3 3		
				▲ Special Topic of Building Technology	3	3	▲ Construction Systems for Open Building	3 3		
				©Selection and Application of Building Materials	3	3	▲ Intelligent Buildings (Taught in English)	3 3		
	-			D. D. LOUIS C. L. C.			©Building Health Diagnosis	3		
		common elective		Overseas Project-Based Study for Graduate Courses	2	2	◆Environmental Disasters and Resiliency	3 3		
				Overseas Project-Based Study for Graduate Courses B(I)	3	3	Overseas Project-Based Study for Graduate Courses A(II)			
				©BIM 3D Engineering Calculation	3	3	Overseas Project-Based Study for Graduate Courses B(II)	3		
				Disaster risk mamagement strategies	[3	3				

Discipline				Sophomore year						
				Fall semester			Spring semester			
				Course name	Credit hour	Teaching Hour	Course name	Credit hour	Teaching Hour	
	Required courses		(Required)	Thesis	6	0	Thesis	6	0	
Professional courses		Structural Engineering Field	24 credit hours (Required)	▲ Diagnosis and Repair of Concrete Structures	3	3	▲ Structural Control	3	3	
				▲ Seismic Structural Control	3	3	▲ Advanced Reinforced Concrete	3	3	
				▲Advanced	3	3	▲ Seismic design of steel structure	3	3	
							▲ Theory of Vibration	3	3	
							▲ Engineering Testing and Monitoring	3	3	
		Engineering Management Field		Electronic Commerce in Construction Industry	3	3	Applications of Nonlinear Models in Engineering Management	3	3	
				Engineering Forensics	3	3	Construction Claims	3	3	
				Real Estate Investment	3	3	®Bidding and selection for the most advantageous tender	3	3	
				Decision Analysis and Research Methods	3	3				
	Elective courses									
		Geotechnical field		Rock Mechanics	3	3	▲ Slope engineering and ecological technology (Taught in English)	3	3	
				Applied Soil Mechanics	3	3	▲ Tunnel Engineering	3	3	
				Geotechnical Earthquake Engineering	3	3	Design and Construction of Pavement	3	3	
				Practioe on Geotechnical engineering	3	3				
		construction technology field		Building Energy Conservation Systems	3	3	Environmental Management for the Sustainable Building	3	3	
				▲ Theory of Open Building(I)	3		Project-Based Study of Integrated Engineering Technology	3	3	
				▲ Special Topics in Architectural Production	3	3	▲ Theory of Open Building(II)	3	3	

## 備註:

- 一、畢業總學分數為 32 學分。
- 二、必修8學分,選修24學分。
- 三、學生修讀所屬學院之「學院共同課程」應認列為本系專業課程學分;修讀所屬學院之「學院跨領域課程」或其他學院開課之課程,則認列為外系課程學分。
- 四、系所訂定條件(學程、檢定、證照、承認外系學分及其他):
  - (1)▲代表與營建工程組博士班合開
  - (2)●代表與工程管理組博士班合開
  - (3)◎代表與大學部合開
  - (4)◆代表於暑期開設
  - (5)\*標記視需要開設
  - (6)105 學年度(含)後入學之碩士研究生畢業論文須完成公開發表,公開發表形式不侷限於國內外研討會,經公開發表形式即可,如可於系上專題討論課程中發表,並經參與老師簽名證明後,方能向系辦公室提出論文口試申請。
  - (7)承認外系課程3學分。
  - (8)109 學年度(含)後入學之碩士班研究生,在學期間應至少選修通過本系1門以全英語授課之專業選修課程。
  - (9)109 入學碩士班外籍生經指導教授許可,得選修工學院內所開設之全英授課課程且無學分限制。