

Module (Course Syllabus) Catalogue

2023-2024

College/ Institute	College of Erbil Technical Engineering	
Department	Civil Engineering	
Module Name	Advanced Concrete Technology	
Module Code	ACT402	
Degree	Technical Diploma <input type="checkbox"/> Bachler <input checked="" type="checkbox"/> High Diploma <input type="checkbox"/> Master <input type="checkbox"/> PhD <input type="checkbox"/>	
Semester	Fourth Semester	
Qualification	BSc Civil Engineering Techniques/ Erbil	
Scientific Title	Assistant Lecturer	
ECTS (Credits)	6	
Module type	Prerequisite <input type="checkbox"/> Core <input checked="" type="checkbox"/> Assist. <input type="checkbox"/>	
Weekly hours		
Weekly hours (Theory)	(2)hr Class	(162)Total hrs Workload
Weekly hours (Practical)	(2)hr Class	()Total hrs Workload
Number of Weeks	12	
Lecturer (Theory)	Dr. Rafah Rasheed Abdul Majeed	
E-Mail & Mobile NO.	Email: rafah.abdulmajeed@epu.edu.iq	

Lecturer (Practical)	Zina A. Abduljaleel Laween Wirya Abdulrazaq Sarab Hawez Qader
E-Mail & Mobile NO.	zina.abduljaleel@epu.edu.iq laween.abdulrazaq@epu.edu.iq sarab.qader@epu.edu.iq
Websites	https://epu.edu.iq/

Course Book

Course Description	to present sophisticated ideas for comprehending the behaviour, creation, and practical use of physical technology. Its goal is to get students ready for early-career design and construction, material specifications, and real-world issues related to using concrete in all of its forms.
Course objectives	This course will cover fundamental principles such as workability, strength, dimension stability, and durability. Then non-destructive evaluation techniques for concrete structures, pumped concrete, spreading concrete in both hot and cold weather, underwater concrete, vacuum concrete, and advanced concrete technology will be examined.
Student's obligation	The students are required to: -Attend all the lectures and present at the concrete Lab and participate in the classwork and assignments. -Participate in the exam.
Specific learning outcome:	<ul style="list-style-type: none"> a) Understanding different types of Concrete b) Using concrete mixtures c) Making concrete in both hot weather and cold weather environment d) Calculating Concrete mix design

Required Learning Materials	Different pedagogical methods are used in this course; for example, project, report, and homework, easy. Student will receive the required handouts such as the references.				
Evaluation	Task	Weight (Marks)	Due Week	Relevant Learning Outcome	
	Paper Review				
	Assignments	Homework	5%		
		Class Activity	2%		
		Report	10 %		
		Seminar			
		Essay			
		Project			
	Quiz		8%		
	Lab.		10%		
	Midterm Exam (Theo)		10%		
	Midterm Exam (Prac)		15%		
	Final Exam (Theo)		20%		
	Final Exam (Prac)		20%		
Total		100%			
Course References:	<ol style="list-style-type: none"> 1. Properties of concrete by A.M. Neville, fourth and final edition (1996) 2. Concrete Technology by J.J. Brook & A.M. Neville , (1990) 3. Concrete Technology (Theory and practice) by M.S Shetty (Reprint 2011) 4. Concrete : Microstructure , properties and Materials by P.K. Mehta and Paulo Monterio (2005) 5. Concrete Materials , properties , Specifications and Testing By Sandor Popovics, Second Edition (1992) 6. Advanced Concrete Technogy , Part-1, II, III, IV by John Newman and B S Choo (2003) 7. Composition and Properties of Concrete by George E. Troxell (1968) 				
Course topics (Theory)			Week	Learning Outcome	
Introduction			1	a)	
Types of Concrete			2	a)	

Concrete Admixtures	3	b)
High Strength Concrete	4	a)
High-Density Concrete	5	a)
Light Wight Concrete	6	a)
Concrete Exposed to High Temperatures	7	c)
Steam Curing at Atmospheric Pressure (Autoclaving)	8	c)
Steam Curing at High Pressure	9	c)
Fibre Reinforced Concrete	10	a)
B.S. design method procedure	11	d)
Mass Concrete Production	12	d)
Insulation		
Practical Topics	Week	Learning Outcome
Flow & Slump test Standard consistency of water	1	a)
Compaction factor and Vebe test Soundness of cement.	2	a)
Compressive strength of cube & Cylindrical concrete	3	d)
Splitting strength test of concrete.	4	d)
Flexure test	10	d)
Rebound Hummer	11	d)
Ultra-Sonic	12	d)

External Evaluator