

6MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	Reinforced concrete- I		Module Delivery
Module Type	Core		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input type="checkbox"/> Lab <input checked="" type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	CIV012		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	UGIV	Semester of Delivery	
Administering Department	CV101	College	Civil Engineering College
Module Leader	Dr. Dhafer Khalefa Jadaan	e-mail	Dhafer.jadaan@uoanabr.edu.iq
Module Leader's Acad. Title	Lecturer	Module Leader's Qualification	Ph.D.
Module Tutor	Dr. Ahmed Anees	e-mail	E-mail
Peer Reviewer Name	Name	e-mail	E-mail
Scientific Committee Approval Date	01/06/2023	Version Number	1.0

Relation with other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	CE2301 Concrete properties, CE2306, strength of material 1, CE2307, strength of material 2	Semester	3,3,4
Co-requisites module	None	Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	<ol style="list-style-type: none">1. Learn the basics of concrete materials and their behavior.2. Learn the stresses developed in concrete according to theories of working and ultimate stresses.3. Apply the theories of flexural and shear stresses to design the structural elements according to the ACI-code provisions.4. Apply the principle of analysis of short columns along with the ACI-code provisions to design columns.5. Understanding the serviceability of concrete structures
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none">1. How to analyze the RC section using working stress method2. How to design reinforced concrete beams for flexure and shear according to ultimate strength method.3. How to design reinforced concrete one-way and two-way slabs.4. Achieve the serviceability requirements of RC members.5. Use ACI 318-19 code specifications in various design problems.
Indicative Contents المحتويات الإرشادية	<p>Indicative content includes the following.</p> <p><u>Chapter one</u> Introduction: Definitions and reviews, - concrete material, ingredients, and properties [2hrs]</p> <p><u>Chapter Two</u> Approximate analysis of structures according to ACI-code [8 hrs]</p> <p><u>Chapter Three</u> Working stress method used to analyze and design of reinforced concrete beams for flexure [12 hrs]</p> <p><u>Chapter Four</u> Ultimate stress method used to analyze and design of reinforced concrete beams for flexure [12 hrs]</p> <p><u>Chapter Five</u> Ultimate design method used to analyze and design of reinforced concrete beam for shear [12 hrs]</p> <p><u>Chapter Six</u> Ultimate design method used to analyze and design of reinforced concrete short columns [12 hrs]</p> <p><u>Chapter Seven</u> Development lengths of reinforcement [10 hrs]</p> <p><u>Chapter Eight</u></p>

	Serviceability of concrete structures, deflection and cracking [10 hrs]
	Chapter Nine One-way solid and ribbed slabs: analysis and design [10 hrs]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Reinforced concrete courses require effective learning and teaching strategies to ensure students develop a strong understanding of complex concepts and their practical applications. The range of strategies that can enhance the learning experience for students in Reinforced concrete courses. These strategies include lecture-based teaching, practical applications, problem-solving assignments, group work and discussions, technology integration.

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	63	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	87	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	5.8
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	150		

Module Evaluation تقييم المادة الدراسية					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	4	10% (10)	3, 6,9,12	LO #1, 3,5, and 7
	Assignments	2	5% (5)	2, 10	LO # 4 and 7
	Projects / Lab.	1			
	Report	1	5% (5)	13	LO # 2,6 and 7
Summative assessment	Midterm Exam	2 hr	20% (20)	7	LO # 1-7
	Final Exam	3hr	60% (60)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري

	Material Covered
Week 1	Introduction to concrete structures, material behavior and properties.
Week 2	Approximate analysis of concrete structures according to ACI-code.
Week 3	Working stress method, principles, and limitations
Week 4	Working stress method in analyzing of reinforced concrete beams for flexural stresses.
Week 5	Working stress method in designing of reinforced concrete beams for flexural stresses.
Week 6	Ultimate stress method, principles, and limitations
Week 7	Ultimate stress method in analyzing of reinforced concrete beams for flexural stresses.
Week 8	Ultimate stress method in designing of reinforced concrete beams for flexural stresses.
Week 9	Ultimate stress method in designing of reinforced concrete beams for flexural stresses.
Week 10	Ultimate stress method in analyzing and designing of reinforced concrete beams for shear stresses.
Week 11	Ultimate design method used to analyze and design of reinforced concrete short columns
Week 12	Development lengths of reinforcement
Week 13	Serviceability of concrete structures, deflection and cracking
Week 14	One-way solid slabs: analysis and design.
Week 15	One-way ribbed slabs: analysis and design.
Week 16	Preparatory week before the final Exam

Delivery Plan (Weekly Lab. Syllabus)

المنهاج الاسبوعي للمختبر

	Material Covered
Week 1	Lab 1:
Week 2	Lab 2:
Week 3	Lab 3:
Week 4	Lab 4:
Week 5	Lab 5:
Week 6	Lab 6:
Week 7	Lab 7:

Learning and Teaching Resources

مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	Arthur H. Nilson, David Darwin, Charles W. Dolan, Design of Concrete Structures, McGraw-Hill, 14th ed., 2014.	Yes
Recommended Texts	Design of reinforced concrete structures, Jamal Abdulwahid Farhan, 2 nd ed., 2016	Yes
Websites	https://www.uoanbar.edu.iq/Bank-Section.php	

Grading Scheme مخطط الدرجات				
Group	Grade	التقدير	Marks (%)	Definition
Success Group (50 - 100)	A - Excellent	امتياز	90 - 100	Outstanding Performance
	B - Very Good	جيد جدا	80 - 89	Above average with some errors
	C - Good	جيد	70 - 79	Sound work with notable errors
	D - Satisfactory	متوسط	60 - 69	Fair but with major shortcomings
	E - Sufficient	مقبول	50 - 59	Work meets minimum criteria
Fail Group (0 - 49)	FX – Fail	راسب (قيد المعالجة)	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
<p>Note: Marks Decimal places above or below 0.5 will be rounded to the higher or lower full mark (for example a mark of 54.5 will be rounded to 55, whereas a mark of 54.4 will be rounded to 54. The University has a policy NOT to condone "near-pass fails" so the only adjustment to marks awarded by the original marker(s) will be the automatic rounding outlined above.</p>				