MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	***Reinforced concrete 1***			**Module Delivery**	
Module Type	***CORE***			**Theory** **Lecture** **Practical**	
Module Code	UOMU0203052				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		**Semester of Delivery**	1	
Administering Department	Building and construction techniques		**College**	Al-Mustaqbal university	
Module Leader	Assist. lec Sally Selan Hussein		**e-mail**	sally.selan.hussein@uomus.edu.iq	
Module Leader's Acad. Title	***Senior Chief Engineer***		**Module Leader's Qualification**	***None***	
Module Tutor	***None***		**e-mail**	***None***	
Peer Reviewer Name			**e-mail**		
Review Committee Approval	01/10/2025		**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	None	**Semester**	
Co-requisites module	None	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	The aims of course to develop an understanding of performance and design methodology for basic reinforced concrete structural elements.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	Upon completion of the course. Student should be able to: 1- To calculate loads and apply it on structures. 2- To analysis and design of different types of reinforced concrete members. 3- To understand bond, anchorage, development length, and serviceability. 4- Recognize the design philosophy of reinforced concrete structures. 5- Understand the difference between the structural behavior of different reinforced concrete structural elements through demonstration experiments and data analysis. 6- Be able to design different elements of reinforced concrete structural		

	systems subjected to gravity and lateral loads. 7- Be able to analyze and design a complete structural system through a comprehensive design project. 8- Be able to produce a complete project document and present in a concise and complete manner to include structural drawings and structural calculations. 119 9- Summaries the fundamental mechanics of reinforced concrete and the empirical assumptions made for analysis. 10- Design basic structural elements (beams, columns and slabs) according to the design approach. 11- Apply fundamental mechanics to the design of reinforced concrete beams and slabs at the serviceability limit state including determination of short and long-term deflection and crack widths.
Indicative Contents المحتويات الإرشادية	**Indicative content includes the following.** Loads, Load Combinations, Safety provisions of the ACI code, Analysis of beams and frames, Arrangement of live loads [3hrs] Properties of concrete in compression, Modulus of elasticity, Stiffness, Properties of concrete in tension, Shrinkage and temperature, Reinforcing steel. [3hrs] Flexural analysis and design of beams (1): Reinforced concrete beam behavior, Analysis of tension reinforced rectangular beam. [3hrs] Flexural analysis and design of beams (2): Design of rectangular beams, Design aids, Practical consideration in design of beams. [3hrs] Flexural analysis and design of beams (3): Rectangular beam with tension and compression reinforcement[3hrs] Flexural analysis and design of beams (4): T-beams. [3hrs] Shear and diagonal torsion in beams. [3hrs] Analysis and design for shear and torsion. [3hrs] Design of one-way slab. [2hrs] Bond, anchorage, and development length. [2hrs] Short columns. [2hrs] Serviceability[2hrs]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Assessment is based on 1- Exams. 2- Student feedback. 3- Seminars.

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 أسبوعيا	4.2
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	62	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	4.1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	125		

Module Evaluation
تقييم المادة الدراسية

		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	**Quizzes**	2	10% (10)	5, 10	LO #1, 2, 10 and 11
	Assignments	2	10% (10)	2, 12	LO # 3, 4, 6 and 7
	Tutorial	1	10% (10)	Continuous	
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	3 hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)
المنهاج الاسبوعي النظري

	Material Covered
Week	**Syllabus**
1	Loads, Load Combinations, Safety provisions of the ACI code, Analysis of beams and frames, Arrangement of live
2	Properties of concrete in compression, Modulus of elasticity, Stiffness, Properties of concrete

	in tension, Shrinkage and temperature, Reinforcing steel.
3	Flexural analysis and design of beams (1): Reinforced concrete beam behavior, Analysis of tension reinforced rectangular beam.
4	Flexural analysis and design of beams (2): Design of rectangular beams, Design aids, Practical consideration in design of beams.
5	Flexural analysis and design of beams (3): Rectangular beam with tension and compression reinforcement
6	Flexural analysis and design of beams (4): T-beams.
7	Shear and diagonal torsion in beams.
8	Analysis and design for shear and torsion.
9	Design of one-way slab.
10	Bond, anchorage, and development length.
11	Bond, anchorage, and development length.
12	Short columns
13	Short columns
14	Serviceability.
15	**Final exam**

Learning and Teaching Resources
مصادر التعلم والتدريس

	Text	Available in the Library?
Required Texts	1- ACI 318-19(22): Building code requirements for structural concrete and commentary.“design of concrete structures” by A.H. Nilson, D. Darwin, C.W. Dolan, 15th Ed., McGraw-Hill 2- Design of reinforced concrete ACI 318-05 Code edition” J.C McCormac and James Nelson, 7th Ed, Wiley 3- “Design of reinforced concrete: A fundamental approach” by E.G. Nawy, 5th Ed., Prentice Hall. 4- “Structural Concrete: Theory and design” by M.N. Hasson, Addison Wesley.	Yes
Recommended Texts	“Reinforced concrete design” by Chu-Kia Wand and Charles G. Salmon.	No

Websites	

APPENDIX:

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	مقبول بقرار	(45-49)	More work required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required

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.

ملاحظة: هذا النموذج تم وضعه وتقديمه من قبل مديرية ضمان الجودة في وزارة التعليم العالي والبحث العلمي