

MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Reinforced concrete 2			Module Delivery
Module Type	CORE			Theory Lecture Practical
Module Code	UOMU0203061			
ECTS Credits	5			
SWL (hr/sem)	75			
Module Level	1	Semester of Delivery	6	
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	Students will build on their knowledge of reinforced concrete design to understand the behavior of reinforced concrete and to design practical reinforced concrete components.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	upon completion of this course the students will: 12. Learn the concept of analysis and design of concrete members, 13. Understand contemporary structural design concepts, critically evaluate design options and perform ACI code calculations. 14. Learn the concept of analysis and design of concrete members, 15. Understand contemporary structural design concepts, critically 16. Design RC Columns with due consideration of slenderness and biaxial effects 17. Design RC two-way slab systems using Direct Design Method 18. Design combined RC footings and retaining walls		

	19. Design Deep beams and Corbels 20. Identify the necessity of deflection and crack control in satisfying serviceability 21. Apply relevant ACI Code provisions to ensure safety and serviceability of structural elements. 22. Identify and compute the main mechanical properties of concrete and steel. 23. Apply the strength method to design R.C. structural Members. 24. Analyze and design R.C. beams for flexure and shear. Analyze and design short and slender R.C. columns. 6. Analyze and design R.C. slabs. 25. Utilize advanced computer software packages (SAP2000 and/or ETABS) for the analysis and design of steel structures.
Indicative Contents المحتويات الإرشادية	Indicative content includes the following. Analysis and design of slabs[2hrs] Types of slabs, Temperature and shrinkage reinforcement, Behavior of two-way edge supported slabs, Two-way column supported slabs, Direct design method for column supported slabs, Depth limitation of the ACI code, Shear design in flat plates and flat slabs. [10hrs] Yield line analysis for slabs[5hrs] Design and analysis of compression members[2hrs] Prestressed Concrete: Principles of prestressed concrete, Methods of prestressing, prestressing steel, concrete for prestressed construction; elastic flexural analysis, Flexural strength, Flexural design based on concrete stress limits; Shape selection, Tendon profiles. Loss of prestress; shear, diagonal tension and web reinforcement. [10hrs] Strut and tie models: Strut and tie methodology, ACI provisions for strut and tie models, Applications. [6hrs] Seismic design: Structural response, Seismic loading criteria, ACI special provisions for seismic design. [6hrs]
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	Assessment is based on 1-Exams 2-Student feedback. 3- Tutorial

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	62	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	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 الأسبوعي النظري	
	Material Covered
Week	Syllabus
Week 1-4	Analysis and design of slabs: Types of slabs, Temperature and shrinkage reinforcement, Behavior of two-way edge supported slabs, Two-way column supported slabs, Direct design method for column supported slabs, Depth limitation of the ACI code, Shear design in flat plates and flat slabs.

Week 5-6	Yield line analysis for slabs
Week 7	Design and analysis of compression members
Week 8-10	Prestressed Concrete: Principles of prestressed concrete, Methods of prestressing, prestressing steel, concrete for prestressed construction; elastic flexural analysis, Flexural strength, Flexural design based on concrete stress limits; Shape selection, Tendon profiles. Loss of prestress; shear, diagonal tension and web reinforcement.
Week 11-13	Strut and tie models: Strut and tie methodology, ACI provisions for strut and tie models, Applications
Week 14	Seismic design: Structural response, Seismic loading criteria, ACI special provisions for seismic design.
Week 15	Preparatory week before the final Exam

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
<i>Required Texts</i>	1. ACI 318 M-2014: Building Code Requirements for Structural Concrete and Commentary 2. "Design of Concrete Structures" by A.H. Nilson, D. Darwin, C.W. Dolan, 14th Ed., McGraw-Hill. 3. "Design of Reinforced Concrete ACI 318-05 Code Edition." J.C. McCormac and James Nelson, 7th Ed, Wiley.	Yes
<i>Recommended Texts</i>	"Reinforced concrete design" by Chu-Kia Wand and Charles G. Salmon.	No
<i>Websites</i>		

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	FX – Fail	مقبول بقرار	(45-49)	More work required but credit awarded

(0 – 49)	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