



Ministry of Higher Education and
Scientific Research - Iraq
University of Baghdad
College of Engineering
Department of Computer Engineering



MODULE DESCRIPTOR FORM

نموذج وصف المادة الدراسية

Module Information			
معلومات المادة الدراسية			
Module Title	LOGIC CIRCUIT DESIGN		Module Delivery
Module Type	CORE LEARNING ACTIVITY		Class Lecture + Lab
Module Code	COE 107		
ECTS Credits	6		
SWL (hr/sem)	150		
Module Level	1	Semester of Delivery	
Administering Department	Computer Engineering	College	Engineering
Module Leader	Hadi Tarsh Zboon	e-mail	hadi.tarish@alnaji-uni.edu.iq
Module Leader's Acad. Title	Prof.	Module Leader's Qualification	PHD
Module Tutor		e-mail	
Peer Reviewer Name		e-mail	
Review Committee Approval	+	Version Number	

Relation With Other Modules			
العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	COE105	Semester	1
Co-requisites module		Semester	

Module Aims, Learning Outcomes and Indicative Contents

أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية

Module Aims أهداف المادة الدراسية	<ul style="list-style-type: none">● Understand and design circuits with sequential elements such as flip-flops, counters, and registers.● Apply optimization techniques to improve the efficiency, reliability, and cost-effectiveness of digital circuit designs.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ul style="list-style-type: none">● Demonstrate knowledge of sequential logic components such as flip-flops, counters, and registers.● Analyze the behavior, performance, and timing of digital circuits to ensure correct operation.● Apply techniques to optimize digital circuits for performance, cost, and power efficiency.● Utilize digital circuit simulation and design tools to model, test, and verify digital circuits.
Indicative Contents المحتويات الإرشادية	
Learning and Teaching Strategies استراتيجيات التعلم والتعليم	
Strategies	<ul style="list-style-type: none">- Lectures.- Homework and Assignments.- Tests and Exams.- In-class questions and Discussions.- Extracurricular Activities.- Individual / Group Projects- In- and Out-Class conversations.

Student Workload (SWL)

الحمل الدراسي للطالب

Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	79	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	71	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	5
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		12% (12)		
	Attendance and Participation		8% (8)		
	Home works		5% (5)		
	Lab.		15% (15)		
Summative assessment	Mid Exam	1	10% (10)		
	Final Exam	3 hrs.	50% (50)		
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)

المنهاج الأسبوعي النظري

	Material Covered
Week 1,2	Sequential Circuits, flip flop types
Week 3,4	Shift registers, linear feedback shift register
Week 5,6	Asynchronous Counter
Week 7,8	Synchronous Counter
Week 9,10	Memory: ROM, RAM
Week 11,12	Sequence generator & detector, PN generator
Week 13,14	Arithmetic circuits

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts		
Recommended Texts		
Websites		

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Sequential Circuits and flip flop
Week 2	Shift registers, linear feedback shift register
Week 3	Asynchronous Counter
Week 4	Synchronous Counter
Week 5	Memory: ROM
Week 6	Memory: RAM
Week 7	Sequence generator & detector
Week 8	PN generator
Week 9	Arithmetic circuits: Floating point adder
Week 10	Arithmetic circuits: multiplier
Week 11	Arithmetic circuits: divider

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 is required but credit awarded
	F – Fail	راسب	(0-44)	Considerable amount of work required
Note:				
NB 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.				