	Ministry of Higher Education and Scientific Research - Iraq Al-Mustaqbal University College of Engineering Department of Prosthetics and Orthotics Engineering	

MODULE DESCRIPTOR FORM
نموذج وصف المادة الدراسية

Module Information معلومات المادة الدراسية					
Module Title	دوائر منطقية			**Module Delivery**	
Module Type	ELECTIVE			☒ **Theory** ☐ **Lecture** ☒ **Lab** ☒ **Tutorial** ☐ **Practical** ☐ **Seminar**	
Module Code	UOMU0103014				
ECTS Credits	5				
SWL (hr/sem)	125				
Module Level	1		**Semester of Delivery**	1	
Administering Department	UOMU0103		**College**	UOMU01	
Module Leader	Samir Ibrahim Abbas		**e-mail**	samir.badrawi@uomus.edu.iq	
Module Leader's Acad. Title	Lect.		**Module Leader's Qualification**	PhD.	
Module Tutor					
Peer Reviewer Name			**e-mail**		
Review Committee Approval	01/06/2023		**Version Number**	1.0	

Relation With Other Modules العلاقة مع المواد الدراسية الأخرى			
Prerequisite module	Electrical circuits	**Semester**	
Co-requisites module	Electronic circuits	**Semester**	
Module Aims, Learning Outcomes and Indicative Contents أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
Module Aims أهداف المادة الدراسية	1. To develop problem solving skills and understanding of circuit theory through the application of techniques. 2. To understand voltage, current and power from a given circuit. 3. This course deals with the basic concept of electrical circuits. 4. This is the basic subject for all electrical and electronic circuits. 5. To understand Kirchhoff's current and voltage Laws problems. 6. To perform mesh and Nodal analysis.		
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	1. Recognize how Logic gate works in electronic circuits. 2. List the various terms associated with Logic gate. 3. Summarize what is meant by a basic Logic gate. 4. Discuss the reaction and involvement of atoms in Logic gate. 5. Describe Logic gate inputs and outputs. 6. Define basic Logic gate . 7. Identify the basic logic elements and their applications. 8. Discuss the operations of Numbering system & Boolean algebra. 9. Discuss the various Reduction techniques methods.		
Indicative Contents المحتويات الإرشادية			
Learning and Teaching Strategies استراتيجيات التعلم والتعليم			
Strategies	Type something like: The main strategy that will be adopted in delivering this module is to encourage students' participation in the exercises, while at the same time refining and expanding their critical thinking skills. This will be achieved through classes, interactive tutorials and by considering type of simple experiments involving some sampling activities that are interesting to the students.		

Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	78	**Structured SWL (h/w)** الحمل الدراسي المنتظم للطالب أسبوعيا	5
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	47	**Unstructured SWL (h/w)** الحمل الدراسي غير المنتظم للطالب أسبوعيا	3
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
	Projects / Lab.	1	10% (10)	Continuous	All
	Report	1	10% (10)	13	LO # 5, 8 and 10
Summative assessment	**Midterm Exam**	2 hr	10% (10)	7	LO # 1-7
	Final Exam	2hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus) المنهاج الاسبوعي النظري	
	Material Covered
Week 1	Introduction into digital techniques
Week 2	Logic gates, principles and types
Week 3	Numbering system
Week 4	Number base conversion
Week 5	Arithmetic operation
Week 6	Boolean algebra
Week 7	DeMorgan theorem
Week 8	Simplification for digital circuits
Week 9	SOP & POS
Week 10	Reduction techniques

Week 11	Half & full adders & subtractor
Week 12	Decoders & encoders & comparators
Week 13	Multiplexers & demultiplaxers
Week 14	Parity check & code conversions
Week 15	Flip-Flop

Delivery Plan (Weekly Lab. Syllabus) المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	LOGIC GATES AND BOOLEAN ALGEBRA
Week 2	THE APPLICATIONS OF EXCLUSIVE -OR GATE
Week 3	ARITHMETIC ELEMENTS
Week 4	DECODERS AND ENCODERS
Week 5	MULTIPLEXERS AND DEMULTIPLEXERS
Week 6	BISTABLE MULTIVIBRATORS (FLIP-FLOPS)
Week 7	
Week 8	
Week 9	
Week 10	
Week 11	
Week 12	
Week 13	
Week 14	
Week 15	

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	**Available in the Library?**
Required Texts	Digital fundamental by Floyed	Yes
Recommended Texts	Digital design by Morris Mano	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