



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	الالكترونيك		Module Delivery
Module Type	CORE		<input checked="" type="checkbox"/> Theory <input type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar
Module Code	UOMU0103045		
ECTS Credits	4		
SWL (hr/sem)	100		
Module Level	2	Semester of Delivery	
Administering Department	UOMU0103	College	UOMU01
Module Leader	Ali Hasanain Mohsin	e-mail	ali.hasanain.mohsin@uomus.edu.iq
Module Leader's Acad. Title	Asst. Lect.	Module Leader's Qualification	MSc.
Module Tutor			
Peer Reviewer Name		e-mail	
Review Committee Approval	01/06/2023	Version Number	1.0

<b>Relation With Other Modules</b> العلاقة مع المواد الدراسية الأخرى			
<b>Prerequisite module</b>	Electrical circuits & Digital integrated circuits	<b>Semester</b>	
<b>Co-requisites module</b>	Logic gates	<b>Semester</b>	
<b>Module Aims, Learning Outcomes and Indicative Contents</b> أهداف المادة الدراسية ونتائج التعلم والمحتويات الإرشادية			
<b>Module Aims</b> أهداف المادة الدراسية	<ol style="list-style-type: none"> <li>1. To develop problem solving skills and understanding of circuit theory through the application of techniques.</li> <li>2. To understand voltage, current and power from a given circuit.</li> <li>3. This course deals with the basic concept of electrical circuits.</li> <li>4. This is the basic subject for all electrical and electronic circuits.</li> <li>5. To understand Kirchhoff's current and voltage Laws problems.</li> <li>6. To perform mesh and Nodal analysis.</li> </ol>		
<b>Module Learning Outcomes</b> مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none"> <li>1. Recognize how in electronic circuits works.</li> <li>2. List the various terms associated with electronic circuits.</li> <li>3. Summarize what is meant by a basic electronic circuit.</li> <li>4. Discuss the reaction and involvement of atoms in electronic circuits.</li> <li>5. Describe electrical power, energy, and Temperature effects.</li> <li>6. Describe diodes.</li> <li>7. Identify the basic circuit elements and their applications.</li> <li>8. Discuss the operations of transistors an electronic circuit.</li> <li>9. Discuss the various properties of an operational amplifiers.</li> <li>10. Applications of an operational amplifiers.</li> </ol> <p style="text-align: right;">Discuss the frequency response and oscillators.</p>		
<b>Indicative Contents</b> المحتويات الإرشادية			
<b>Learning and Teaching Strategies</b> استراتيجيات التعلم والتعليم			
<b>Strategies</b>	<p>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.</p>		

## Student Workload (SWL)

الحمل الدراسي للطالب

<b>Structured SWL (h/sem)</b> الحمل الدراسي المنتظم للطالب خلال الفصل	63	<b>Structured SWL (h/w)</b> الحمل الدراسي المنتظم للطالب أسبوعيا	4
<b>Unstructured SWL (h/sem)</b> الحمل الدراسي غير المنتظم للطالب خلال الفصل	37	<b>Unstructured SWL (h/w)</b> الحمل الدراسي غير المنتظم للطالب أسبوعيا	2
<b>Total SWL (h/sem)</b> الحمل الدراسي الكلي للطالب خلال الفصل	100		

## Module Evaluation

تقييم المادة الدراسية

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

## Delivery Plan (Weekly Syllabus)

المنهاج الاسبوعي النظري

	Material Covered
<b>Week 1</b>	Introduction to Electronic Circuits
<b>Week 2</b>	Semiconductor materials and diodes
<b>Week 3</b>	N junction diode
<b>Week 4</b>	Diode applications part1
<b>Week 5</b>	Diode applications part2
<b>Week 6</b>	Diode applications part3
<b>Week 7</b>	Bipolar junction transistors, part1
<b>Week 8</b>	Bipolar junction transistors, part2
<b>Week 9</b>	Field-Effect transistors, part1
<b>Week 10</b>	Field-Effect transistors, part2

<b>Week 11</b>	Operation amplifier, principles and types
<b>Week 12</b>	Operation amplifier applications
<b>Week 13</b>	Frequency response
<b>Week 14</b>	Feedback amplifier & Oscillators circuits
<b>Week 15</b>	4-layers semiconductors

<b>Delivery Plan (Weekly Lab. Syllabus)</b> المنهاج الاسبوعي للمختبر	
	<b>Material Covered</b>
<b>Week 1</b>	Lab 1: Diode characteristics
<b>Week 2</b>	Lab 2: Rectifiers and filters
<b>Week 3</b>	Lab 3: Clippers, clampers and voltages multipliers
<b>Week 4</b>	Lab 4: Zener diode as voltage regulator
<b>Week 5</b>	Lab 5: BJT characteristics and DC basing
<b>Week 6</b>	Lab 6: Common emitter amplifier
<b>Week 7</b>	Lab 7: FET characteristics and DC basing

<b>Learning and Teaching Resources</b> مصادر التعلم والتدريس		
	<b>Text</b>	<b>Available in the Library?</b>
<b>Required Texts</b>	Robert L. Boylestad, "Electronic Devices and Circuit theory", Prentice Hall International	Yes
<b>Recommended Texts</b>	Theodore F. Bogart, "Electronic Devices and Circuits", Merrill Publishing Company. •Jacob Millman, " Microelectronics", McGraw-Hill Book Company.	No
<b>Websites</b>		

## 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:				
<p><b>Note:</b> 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>				



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