

MODULE DESCRIPTION FORM

نموذج وصف المادة الدراسية

Module Information				
معلومات المادة الدراسية				
Module Title	Analog electronics / تماثلي الكترونيك		Module Delivery	
Module Type	Basic		<input checked="" type="checkbox"/> Theory <input checked="" type="checkbox"/> Lecture <input checked="" type="checkbox"/> Lab <input type="checkbox"/> Tutorial <input type="checkbox"/> Practical <input type="checkbox"/> Seminar	
Module Code	UOMU0301043			
ECTS Credits	2			
SWL (hr/sem)	150			
Module Level	1	Semester of Delivery		1
Administering Department	Type Dept. Code	College	Type College Code	
Module Leader	م.م لبنى علي جليل		e-mail	lubna.ali.jalil@uomus.edu.iq
Module Leader's Acad. Title			Module Leader's Qualification	Ph.D.
Module Tutor	Name (if available)		e-mail	E-mail
Peer Reviewer Name	Name		e-mail	E-mail
Scientific Committee Approval Date			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 course aims to study the subject of analog electronics after reviewing the types of analog and digital electrical signals and knowing the reason for naming the material with this name and studying the nature of conductive and insulating materials and semiconductors and their types. And studying the effect of impurities in semiconductor materials and their use in the manufacture of diodes and transistors. This course also aims to study the types of transistors and their use in electronic circuits.
Module Learning Outcomes مخرجات التعلم للمادة الدراسية	<ol style="list-style-type: none">1) The student should know conductors, insulators and semiconductors.2) The student should distinguish between the types of semiconductors and explain their connection mechanism.3) The student should know the transistor and its types4) The student should know the hybrid parameter and the equivalent circuit5) To list the characteristics of the amplifier6) The student should know the biased circuits and the circuits with a common emitter or base7) The student should know FET, JFET
Indicative Contents المحتويات الإرشادية	Indicative content includes the following: Introduction, Insulators, conductors, semiconductors; Intrinsic semiconductors, extrinsic semiconductors, PN-junction and applications; Transistor, PNP, NPN, common emitter dc-analysis; Characteristic curves, hybrid parameters, equivalent circuit; Properties of CE-amp., drawing the load line, stability, biasing aims; Biasing circuits, Common collector circuits, common base circuit; FET, JFET, Output characteristic curves of JFET, JFET small signal parameters

Learning and Teaching Strategies

استراتيجيات التعلم والتعليم

Strategies	<ol style="list-style-type: none">1. Lectures2. Discussion3. Teaching strategies used to develop these skills and abilities4. Small group discussion
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	5. Workshops 6. Presentation experiments 7. Scientific trips
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Student Workload (SWL) الحمل الدراسي للطالب			
Structured SWL (h/sem) الحمل الدراسي المنتظم للطالب خلال الفصل	58	Structured SWL (h/w) الحمل الدراسي المنتظم للطالب أسبوعياً	3
Unstructured SWL (h/sem) الحمل الدراسي غير المنتظم للطالب خلال الفصل	42	Unstructured SWL (h/w) الحمل الدراسي غير المنتظم للطالب أسبوعياً	1
Total SWL (h/sem) الحمل الدراسي الكلي للطالب خلال الفصل	100		

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	
	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	Topic: Introduction, Insulators, conductors, semiconductors Learning outcome: The student should know conductors, insulators and semiconductors. Method: 1. Discussion sessions

	<p>Competitive Presentation</p> <p>2.Lectures</p> <p>3. Brainstorming</p> <p>Evaluation: Oral tests</p>
Week 2	<p>Topic: Intrinsic semiconductors, extrinsic semiconductors, PN-junction and applications</p> <p>Learning outcome: The student should distinguish between the types of semiconductors and explain their connection mechanism.</p> <p>Method: 1. Discussion sessions</p> <p>Competitive Presentations</p> <p>2-Lectures</p> <p>3-Brainstorming</p> <p>Evaluation: Daily evaluation</p>
Week 3	<p>Topic: Transistor, PNP, NPN, common emitter dc-analysis</p> <p>Learning outcome: The student should know the transistor and its types</p> <p>Method: 1-Competitive discussion sessions. Presentations.</p> <p>2-Lectures.</p> <p>3-Brainstorming</p> <p>Evaluation: Homework</p>
Week 4	<p>Topic: Characteristic curves, hybrid parameters, equivalent circuit</p> <p>Learning outcome: The student should know the hybrid parameter and the equivalent circuit</p> <p>Method: 1.Discussion sessions</p> <p>Competitive - Presentations-2.Lectures</p> <p>3.Brainstorming</p> <p>Evaluation: Ask questions and quick tests daily and monthly</p>
Week 5	<p>Topic: Properties of CE-amp., drawing the load line, stability, biasing aims</p> <p>Learning outcome: To list the characteristics of the amplifier</p> <p>Method: 1.Discussion sessions</p> <p>Competitive - Presentations-2.Lectures</p> <p>Evaluation: Ask questions</p>
Week 6	<p>Topic: Biasing circuits, Common collector circuits, common base circuit</p> <p>Learning outcome: The student should know the biased circuits and the circuits with a common emitter or base</p> <p>Method: 1.Discussion sessions</p> <p>Competitive - Presentations-2.Lectures</p> <p>3.Brainstorming</p> <p>Evaluation: Ask questions</p> <p>Daily exams</p>
Week 7	<p>Topic: Biasing circuits, Common collector circuits, common base circuit</p> <p>Learning outcome: The student should know the biased circuits and the circuits with a common emitter or base</p> <p>Method: 1.Discussion sessions</p>

	Competitive - Presentations-2.Lectures 3.Brainstorming Evaluation: Ask questions Daily exams
Week 8	Topic: FET, JFET, Output characteristic curves of JFET, JFET small signal parameters Learning outcome: The student should know FET, JFET Method: 1.Discussion sessions Competitive - Presentations-2.Lectures 3.Brainstorming Evaluation: Social Discussions
Week 9	Topic: FET, JFET, Output characteristic curves of JFET, JFET small signal parameters Learning outcome: The student should know FET, JFET Method: 1.Discussion sessions Competitive - Presentations-2.Lectures 3.Brainstorming Evaluation: Social Discussions
Week 10	Not specified in source file.
Week 11	Not specified in source file.
Week 12	Not specified in source file.
Week 13	Not specified in source file.
Week 14	Not specified in source file.
Week 15	Not specified in source file.
Week 16	Not specified in source file.

Delivery Plan (Weekly Lab. Syllabus)	
المنهاج الاسبوعي للمختبر	
	Material Covered
Week 1	Practical/Lab aligned with lecture topic. Topic: Introduction, Insulators, conductors, semiconductors
Week 2	Practical/Lab aligned with lecture topic. Topic: Intrinsic semiconductors, extrinsic semiconductors, PN-junction and applications
Week 3	Practical/Lab aligned with lecture topic. Topic: Transistor, PNP, NPN, common emitter dc-analysis
Week 4	Practical/Lab aligned with lecture topic.

	Topic: Characteristic curves, hybrid parameters, equivalent circuit
Week 5	Practical/Lab aligned with lecture topic. Topic: Properties of CE-amp., drawing the load line, stability, biasing aims
Week 6	Practical/Lab aligned with lecture topic. Topic: Biasing circuits, Common collector circuits, common base circuit
Week 7	Practical/Lab aligned with lecture topic. Topic: Biasing circuits, Common collector circuits, common base circuit

Learning and Teaching Resources مصادر التعلم والتدريس		
	Text	Available in the Library?
Required Texts		
Recommended Texts	Electronics principles (fourth edition) by Malvino	
Websites	Websites	

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	راسب (قيد المعالجة)	(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.

