

Module Information				
Module Title	Electronic Circuits II		Module Delivery	
Module Type	Core		☒ Theory ☐ Lecture ☒ Lab ☒ Tutorial ☐ Practical ☐ Seminar	
Module Code	MIET2202			
ECTS Credits	6			
SWL (hr/sem)	150			
Module Level		UG11	Semester of Delivery	4
Administering Department		MIET	College	
Module Leader	Ruqaya Alaa		e-mail	
Module Leader's Acad. Title		Lecturer	Module Leader's Qualification	
Module Tutor	Ruqaya Alaa		e-mail	
Peer Reviewer Name			e-mail	<i>ruqia_alaa_ibrahim@hilla-unc.edu.iq</i>
Scientific Committee Approval Date	15/3/2026		Version Number	1.0

Relation with other Modules				
Prerequisite module	Electronics Circuits I-MIET2102		Semester	UGII-S3
Co-requisites module	None		Semester	

Module Aims, Learning Outcomes and Indicative Contents

Module Aims	1. The graduate get scientific and applied skills of electronic circuits 2. The graduated students will gain the ability of knowledge of different parts of electronic circuits. 3. Development and training the engineering technical staffs on the electronic circuits. 4. Preparation the research and studies to improve and develop the action of electronic circuits. 5. Prepare application engineers in technical and electronic engineers. 6. Put the proposals and alternatives for the electronic devices.
Module Learning Outcomes	1. Become aware of the general characteristics of electronic devices. 2. Be able to describe the difference types of electronic categories. 3. Develop a clear understanding of the basic operation and characteristics of electronic devices. 4. Become familiar with the use of equivalent circuits to analyze series, parallel, and series-parallel electronic networks. 5. Be able to predict the output response of an electronic networks. 6. Become familiar with the analysis of and the range of applications for electronic devices. 7. Become familiar with the basic construction and operation of the various types of electronic categories! 8. Be able to test a various type of electronic terminals. 9. Be able to determine the dc levels for the variety of important electronic circuits. 10. Understand how to measure the important voltage levels of electronic circuits. 11. Begin to understand the troubleshooting process as applied to electronic configurations. 12. Develop a sense for the stability factors of an electronic circuits. 13. Learn to use the equivalent model to find the important ac parameters for an amplifier. 14. Develop some skill in troubleshooting ac amplifier networks.
Indicative Contents	Indicative content includes the following. <u>Part A Electronic Theory</u> JFETs: n -channel, p -channel, TRANSFER CHARACTERISTICS, Shockley's Equation , Shorthand Method [10 hrs] FET Biasing -Fixed-bias configuration, self-bias configuration, voltage-divider bias arrangement; common gate configuration , depletion-type MOSFETs , enhancementtype MOSFET [10 hrs]

	Revision problem classes [6 hrs]
	<u>Part B – Frequency response</u>
	Decibels- General Frequency Considerations, Low-Frequency Analysis—Bode Plot, Low-Frequency Response—BJT Amplifier with RL, Low-Frequency Response—FET Amplifier, High-Frequency Response—BJT Amplifier, High-Frequency Response— FET Amplifier [12 hrs]
	Operational Amplifiers - Differential Amplifier Circuit, BiFET, BiMOS, and CMOS Differential Amplifier Circuits, Op-Amp Basics, Practical Op-Amp Circuits, Op-Amp Specifications—DC Offset Parameters. [12 hrs]
	<u>Part C - Power Amplifiers</u>
	Series-Fed Class A Amplifier- Transformer-Coupled Class A Amplifier, Class B Amplifier Operation, Class B Amplifier Circuits, Amplifier Distortion.[10 hrs]
	Power Supplies (Voltage Regulators) [12 hrs]

Learning and Teaching Strategies	
Strategies	The main strategy that will be encourage active participation and engagement of students through activities such as group discussions, hands-on experiments, problem solving tasks, and case studies. This approach promotes critical thinking, collaboration, and knowledge application and encourage students to explore and discover knowledge through inquiry and investigation. Pose open-ended questions or problem scenarios that require learners to research, analyze, and draw conclusions independently.

Student Workload (SWL)			
Structured SWL (h/sem)	79	Structured SWL (h/w)	5
Unstructured SWL (h/sem)	71	Unstructured SWL (h/w)	4
Total SWL (h/sem)	150		

Module Evaluation					
		Time/Number	Weight (Marks)	Week Due	Relevant Learning Outcome
Formative assessment	Quizzes	2	16% (16)	5,10	LO #1,2,10 and 11
	Assignments	2	8% (8)	2,12	LO # 3,4 ,6,7 and 14
	Projects / Lab.	1	8% (8)	continuous	
	Report	1	8% (8)	13	LO # 5,8 and 10
Summative assessment	Midterm Exam	2 hr	10% (10)	8	LO # 1,2,5,9,10 and 13
	Final Exam	4hr	50% (50)	16	All
Total assessment			100% (100 Marks)		

Delivery Plan (Weekly Syllabus)	
	Material Covered
Week 1	FET Amplifiers.
Week 2	JFET Small-Signal Model
Week 3	General Frequency Considerations
Week 4	BJT frequency response
Week 5	JFET frequency response
Week 6	Power amplifier.
Week 7	Mid- Exam
Week 8	Series-Fed Class A Amplifier
Week 9	Class B,C and D amplifiers

Week 10	Feedback and Oscillator Circuits
Week 11	PNPN and Other Devices
Week 12	Operational amplifier
Week 13	Operational amplifier applications
Week 14	Power Supplies Voltage Regulators
Week 15	Preparatory week before final exam

Delivery Plan (Weekly Lab. Syllabus)

	Material Covered
Week 1	Lab 1: Common emitter transistor characteristics
Week 2	Lab 2: Common collector transistor
Week 3	Lab 3: Common emitter amplifier
Week 4	Lab 4: Transistor biasing (part 1)
Week 5	Lab 5: Transistor biasing (part 2)
Week 6	Lab 6: common collector amplifier
Week 7	Lab 7: Common base amplifier
Week 8	Lab 8: Collector feedback amplifier circuit
Week 9	Lab 9: Voltage divider biasing circuit
Week 10	Lab 10: Emitter follower
Week 11	Lab 11: JFET characteristics
Week 12	Lab12: JFET amplifier
Week 13	Lab13: operational amplifier (part1)
Week 14	Lab14: operational amplifier (part 2)

Learning and Teaching Resources

مصادر انتعهم وانتدريس

	Text	Available in the Library?
Required Texts	electronic devices and circuit theory 11th edition, Robert L. Boylestad , Louis Nashelsky	Yes

Recommended Texts		No
Websites	https://www.coursera.org/browse/physical-science-and-engineering/electricalengineering	

Grading Scheme				
Group	Grade	انتقدير	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.				


 د. هارون عبد الكاظم
 العميد

عميد الكلية : أ.د. هارون عبد الكاظم شهد
التاريخ : 2026 / 3 / 15



رئيس القسم : أ.د. محمود شاكر نصر
التاريخ : 2026 / 3 / 15

اسم التدريسي : م.م. رقية علاء ابراهيم
التاريخ : 2026 / 3 / 15