MODULE DESCRIPTION FORM

Module Name:	
Electronic III	
Module Code:	
WBM-32-06	
Semester / Year:	
2nd Semester / 2025	
Date of Preparation of this Description:	
28/1/2025	
Available Attendance Formats:	
Weekly (Theoretical)	
Total Credit Hours / Total Units:	
45 Hrs. Theoretical /3 Units	
Name of the Course Coordinator (if there are multiple names):	
Name: Ali Mohammed Email: ali.mohammed@uowa.edu.iq	
Module Objectives:	
Module Objectives	Oscillators are electronic circuits that generate a signal output without requiring an input signal. Several types of basic oscillator circuits use both discrete transistors and reference amplifiers as the advance gain element. Also, the popular 555 timer integrated circuit, in terms of oscillator applications, the operation of a sinusoidal oscillator is based on the principle of positive feedback, where a portion of the output signal is fed back to the input in such a way that it enhances itself and thus maintains a continuous output signal.
1. Teaching and Learning Strategy	
Strategy:	1. The student learns to describe the principles of operation of the oscillator.

	2. The student will learn to discuss the principle of feedback oscillators based describing and analyzing the feedback process to the resident coordinator of oscillators. 3. The student will learn to describe and analyze the business letter feedb process for oscillators 4. The student will learn to discuss and analyze the 555 timer and its use in oscillator. 5. The student will learn to explain and analyze the operation of Class A amplifi 6. The student will learn to explain and analyze the operation of type B and cl AB power amplifiers 7. The student will learn to explain and analyze the operation of Class C pov amplifiers 8. The student will learn to troubleshoot power amplifiers. 9. The student should link theoretical and practical ideas. 10. The student will learn to use the above techniques in designing and invent a new biomedical device. 11. Knowing most of the engineering applications of the above vocabulary and how to benefit from them and employ them correctly in the field of biomedical engineering.

2. Module Structure

Week	Hours	Required Learning Outcomes	Unit or subject name	Learning method	Evaluation method
1	3	frequency response, Sinusoidal, Wien bridge, Oscillator and circuit.	The student learns the response and frequency of sinusoidal oscillators, their types, and the circuits for eachoscillator	Theoretical	Daily test and oral questions

2	3	Phase shift oscillator, Shaping of frequency response, and Ramp generator	The student learns other types of oscillators and their uses	Theoretical	Daily test and oral questions
3	3	Hartley oscillator, and crystal oscillator	The student learns other types of oscillators and their uses	Theoretical	Daily test and oral questions
4	3	Large signal amplifier (power amplifier).	The student will learn about power amplifiers and their types	Theoretical	Daily test and oral questions
5	3	Power amplifier classification, class A, class B, class A-B and class C.	The student learns power amplifiers and their classifications according to...Efficiency	Theoretical	Daily test and oral questions
6	3	The properties of Power amplifiers, theory of classification.	The student learns the properties of power amplifiers and the theoretical basis of classifications	Theoretical	Daily test and oral questions

7	3	Transformer coupled stage	The student will learn to use the coupled transformer method in power amplifiers	Theoretical	Daily test and oral questions
8	3	Direct coupled type, Transformer coupled type.	The student will learn the method of direct coupling in coupled transformers	Theoretical	Daily test and oral questions
9	3	Transformer-coupled, class B push pull, linear .amplifier	The student will learn to use the direct coupling method in type B amplifiers	Theoretical	Daily test and oral questions
10	3	Multivibrator: MTV's using transistor	The student will learn about multiple oscillators using transistors	Theoretical	Daily test and oral questions
11	3	Astable MTV, and Mono stable MTV.	For the student to learn the stable and single multivibrators and the difference between them	Theoretical	Daily test and oral questions
12	3	Design of the circuit, bistable MTV using op-amp	The student will learn to design multivibrator	Theoretical	Daily test and oral questions

			circuits of all types, especially dual ones		
13		Design of the circuit, A stable MTV using op-amp	The student will learn to design multivibrator circuits of all types, especially stable ones, using (operational) signal modulators.	Theoretical	Daily test and oral questions
14		Monostable MTV using . op-amp	The student learns to design single vibrator circuits using (operational) signal modulators.	Theoretical	Daily test and oral questions
15		Transmission matrix.	The student will learn to use the designed circuits and analyze them through electronic arrays.	Theoretical	Daily test and oral questions

Module Evaluation					
1- Weekly exams					

2- Monthly exams 3- Participations inside the class 4-present the seminars 5- Writing reports	
Learning and Teaching Resources.	
Required textbooks (curricular books, if any)	Thomas L. Floyd , " Electronic Devices ", Pearson Education © 2018.
Main references (sources)	Electronic Devices and Circuit Theory, Eleventh Edition, Robert L. Boylestad
Recommended books and references (scientific journals, reports...)	Thomas L. Floyd , " Electronic Devices ", Pearson Education © 2018
Electronic References, Websites	www.ieee.org