The University of Jordan
School of Engineering
Mechatronics Engineering Department
2nd Semester – A.Y. 2024-2025

Course:	**Electronics lab for Mechatronics – 0908322 (1 Cr. – RequiredCourse)**
Instructor:	Eng. Nazmi Abu Ashour Office: Mechatronics Engineering. Telephone: 5355000 ext 23025, Email: n.abuashour@ju.edu.jo
Course website:	http://elearning.ju.edu.jo
Catalog description:	Diode characteristic and applications: Half Wave Rectifier (HWR), Full Wave Rectifier (FWR), Clipper, Clamper and Peak Detector. Zener Diode Characteristics & Voltage Regulator, Bipolar Junction Transistor Characteristics, BJT Applications, Frequency Response of BJT Amplifier, MOSFET characteristics and applications, Operational Amplifier Applications.
Prerequisites by course:	**MX 0908222** Electronics for Mechatronics (pre- or co-requisite)
Prerequisites by topic:	The student should have the basic knowledge of electrical and electronic circuits and the characteristics of their components.
Textbook:	**Lab. Manual**
References:	1. Donald A. Neamen. Microelectronics: Circuit Analysis and Design, 4th Edition, Mc-Graw-Hill.
Schedule:	11-12 Weeks, 10 lab sessions (3 hours each) plus exams.
Course goals:	The objectives of this course are to make the student perform set of experiments needed to examine the electronic components and how it works.

Course learning outcomes (CLO) and relation to ABET student outcomes (SO):

Upon successful completion of this course, a student should:	[SO]
1. Learn the basics of electrical laboratory instrumentation, to Conduct experiment and analyze and interpret the results.	[5]
2. Perform fundamental measurements on electrical circuits.	[5]
3. Analyze basic diode and amlifier configurations.	[5]
4. Analyze electronic circuits using simulation software such as MultiSim or PSpice.	[5]
5. Conduct experiment, analyze and interpret the results.	[5]

Course topics:

	Hrs
1. Lab Equipment Familiarization	3
2. Diode Characteristics and Rectification	3
3. Diode Clippers and Clampers	3
4. Zener Diode Characteristics & Voltage Regulator	3
5. Bipolar Junction Transistor Characteristics	3
6. BJT Applications	3
7. Frequency Response of BJT Amplifier	3
8. Operational Amplifier Applications (1)	3
9. Operational Amplifier Applications (2)	3
10. MOSFET Characteristic and Applications	3

Ground rules:

Attendance:
Students are expected to attend EVERY LAB SESSION and they are responsible for all material, announcements, schedule changes, etc., discussed in class. The university policy regarding the attendance will be strictly adhered to.

Assessment & grading policy:

Assignments		Quizzes	
First Exam		Projects	
Midterm	30%	Reports+Quizzes	30%
Final Exam	40%	Presentation	
		Total	**100%**

Last Revised: October 1, 2024