

Date:30/1/2022	Examination No.:	Version:2021-2022	Start:30/1/2022
Module Name - Code	Physical Electronics - 2111		
Module Language:	English		
Responsible:	Amira Ramzi Hamad (Lecture)		
Lecture (s):	None		
College:	College of Engineering – Salahaddin University-Erbil		
Duration:	15 week – (Spring semester)		
Course outcomes:	At the end of the semester, students would be able to Understand the types of semiconductor diodes: PN junction, Schottky barrier diode, LED, Photodetector, Zener diode The Varactor Diode and The Tunnel Diode. They would also be able to appreciate the importance of diode applications: Half-wave rectifier, Full-wave rectifier, Clipper, Clamper and Voltage multiplier. In addition, they can be able to discover BJT as Structure, Operation, Characteristics, Parameters, Biasing and Configuration.		
Course Content:	Representation of intrinsic and extrinsic properties of semiconductors: N-type, P-type. Overview to diode operation and diode model parameter extraction. Types of semiconductor diodes: PN junction, Schottky barrier diode, LED, Photodetector, Zener diode, The Varactor Diode and The Tunnel Diode. Diode circuits: half and full-wave rectifiers, clamper, clipper and voltage multiplier. Description of BJT (Structure, Operation, Characteristics, Parameters, Biasing and Configuration)		
Literature:	Thomas L. Floyd, “ ELECTRONIC DEVICES ”, Tenth Edition, Pearson, 2018. Robert L. Boylestad and Louis Nashelsky, “ Electronic Devices and Circuit Theory ”, Eleventh Edition, Pearson, 2013. V. K. Mehta and Rohit Mehta, “ Principles of Electronics ”, Eleventh Edition, S. CHAND, 2008.		
Type of Teaching:	3 hrs. in lectures		
Pre-requisites:	None		
Preparation Modules:	Atomic Structure of Elements		
Frequency:	Spring Semester		
Requirements for credit points:	For the award of credit points, it is necessary to pass the module exam. It contains: Two examination during the academic semester, Quizzes Assignments and Final examination. Student's attendance is required in all classes.		
Credit point:	5		
Grade Distribution:	The following grade system is used for the evaluation of the module exam: The module exam is based on the summation of two categories of evaluations: First: (40%) of the mark is based on the academic semester effort which includes -Two examination during the academic semester = 30%. - Quizzes= (6%) -Assignments = (4%). Second: (60%) of the mark is based on final examination that is comprehensive for the whole of the study materials reviewed during the academic semester.		
Work load:	The workload is 150hrs. It is the result of 45 hrs. attendance and 105 hrs. self-studies (Assignments, preparation for exam and applications).		