مختصر توصيف المقرر

معلومات المقرر * :(Course Information)

اسم المقرر:	الكترونيات 1
رقم المقرر:	فيز 4232
اسم ورقم المتطلب السابق:	فيز 3712
اسم ورقم المتطلب المرافق:	--
مستوى المقرر:	السابع
الساعات المعتمدة:	3 (2+2+0)

Module Title:	Electronics I
Module ID:	PHYS 4232
Prerequisite:	PHYS 3712
Co-requisite:	--
Course Level:	Seventh
Credit Hours:	3 (2+2+0)

وصف المقرر : Module Description

Theoretical part:
Analog Electronics: The P-N junction diode and Zener diode with their applications – Junction Field effect transistor - Bipolar junction transistor (Bias and amplifiers: JFET & BJT) – Differential and Operational Amplifiers, Introduction to Feedback Circuits, Multi-vibrators and Oscillators.

Practical part:
P-N junction application (half-wave rectifier, full-wave rectifier, clampers and limiters, Zener regulation) - Transistors JFET & BJT amplifiers. Amplifiers with 741 (Inverting & Non-inverting Amplifiers, Active Filters, Wien Oscillator, A stable Multi-vibrator).

أهداف المقرر : Module Aims

1	Understand the basic principles and abstractions that are used to analyze and design electronic circuits and systems.	1
2	Understand the language of electrical and electronic and how to formulate and solve basic electrical and electronic problems.	2
3	Understand how electronic circuits and systems fit into the larger context of science careers, ethics, societal needs, and environmental concerns	3

Learning Outcomes: **مخرجات التعليم:**

1	Knowledge in basic sciences, mathematics, and electronic principles.	1
2	Knowledge in the fundamentals of electronic principles and practices, including analysis, design, evaluation, and management	2
3	Collect data and information and perform analysis, interpretation and draw inferences or conclusions	3
4	Students should be responsible for their own learning that requires using means to find new information data, or techniques of analysis.	4

Course Contents: **محتوى المقرر:**

ساعات التدريس (Hours)	عدد الأسابيع (Weeks)	قائمة الموضوعات (Subjects)
6	2	Basic characteristics of ideal and non-ideal PN-diode
3	1	Various didoes, e.g. Zener diode, light-emitting diode, etc.
6	2	Diode applications, e.g. rectifier, limiting and clamping circuits, etc.;
6	2	Bipolar junction transistors (BJTs) small signal model and its parameters;
6	2	Field Effect Transistors (FETs) small signal model and its parameters;
6	2	Analysis of BJT circuits at DC and AC
6	2	Analysis of FETs circuits at DC and AC
6	2	Analysis of both ideal and practical Op-Amp circuits

Textbook and References: **الكتاب المقرر والمراجع المساندة:**

سنة النشر Publishing Year	اسم الناشر Publisher	اسم المؤلف (رئيسي) Author's Name	اسم الكتاب المقرر Textbook title
2012	Prentice Hall	Thomas L. Floyd	Electronic Devices
سنة النشر Publishing Year	**اسم الناشر Publisher**	**اسم المؤلف (رئيسي) Author's Name**	**اسم المرجع Reference**
0675212596	Merrill Pub Co	Ronald J. Tocci and Mark E. Oliver	Fundamentals of electronic devices
0132359235	Prentice Hall	Thomas L. Floyd	Digital Fundamentals
013219709X	Prentice Hall	Thomas L. Floyd	Electronics fundamentals: Circuits, Devices and Applications