

## Electronics and communications courses – EC

### EC 331 – ELECTRONICS

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**Hour:** Lecture: 2 Hrs.                      Tutorial: 2 Hrs.                      Credit: 3.

**Coordinator:** Abdelhameed Gafaar

**Text Book:**

- Boylested, Nashelsky, Electronic Devices & circuit theory

**Specific course information:**

- a. P-N junction diode, Special P-N junctions, bipolar junction and field effect transistors, Transistor amplifiers. Cascaded amplifiers, Voltage and power amplifiers. Silicon controlled rectifiers.
- b. Prerequisite: EE231
- c. Designation: Required

**Specific goals for the course:**

- An ability to apply knowledge of mathematics, science, and engineering.
- An ability to design a system, component, or process to meet desired needs.
- An understanding of professional and ethical responsibility.
- A recognition of the need for, and an ability to engage in life-long learning.

**Course instruction outcomes:**

- The students will be able to use different electronic devices used in constructing modern electronic circuits, analysis, and study of their performance with special emphasis of some practical applications
- The students will be able familiar with semiconductors materials, P-N junction diodes, diode as a circuit element, special diodes, Bipolar Junction Transistor (BJT) and Field Effect Transistor (FET). Electronic amplifiers and switches.

**Student outcomes:**

A, C, F, I

**Topics Covered:**

- Semiconductor materials
- Extrinsic Semiconductors
- PN junctions
- Special PN junction and its applications
- Photo diodes, solar cells, LED's, Zener diodes

- Bipolar Transistors
- Field Effect Transistors
- Transistor amplifiers
- Cascaded amplifiers, Feedback amplifiers
- Power amplifiers
- Silicon Controlled Rectifiers & applications
- Power supplies
- Oscillators
- Electronic filters

Course / credit hours	Math & Basic Sciences	Engineering Topics	General Education
Electronics (EC331)/3		3	