

**Faculty of Engineering & Technology**

**Solid State Physics**

**Information :**

**Course Code :** EMP221

**Level :** Undergraduate

**Course Hours :** 3.00- Hours

**Department :** Electrical Power Engineering

**Instructor Information :**

Title	Name	Office hours
Professor	Abdel Nasser Mahmoud Tawfik Aly	1
Assistant Lecturer	Nada El Said Abdallah Hassan Salem	

**Description :**

Semiconductor material properties: Crystal structure of solids, Introduction to quantum mechanics, Introduction to the quantum theory of solids, Semiconductor in equilibrium, Carrier transport phenomena, Non-equilibrium excess carriers in semiconductors. pn junction: Basic structure, reverse applied bias, junction breakdown, pn junction current, Generation. recombination currents, and Small-signal model of the pn junction.