



Course description:

This is a course to introduce students to the fundamentals of Electricity and Magnetism. Practical activities such as problem solving, laboratory work, and report writing are important elements of this course. Electricity, including Coulomb's Law, Gauss's Law and electric fields, electric potential, capacitance, currents, resistance, electromotive force and D.C. circuits. Magnetism, including magnetic fields and forces, the laws of Biot and Savart, Ampère's law, displacement current, electromagnetic induction, Faraday's and Lenz's laws fluid Mechanics

Aims of the course:

Identify and describe operation of semiconductor devices. b. Analyze where and how analog components are used. c. Locate and select analog devices using component specifications based on circuit requirements. d. Construct operational circuits using analog devices. e. Select and demonstrate the use of appropriate test equipment to analyze circuit operation. f. Using appropriate troubleshooting techniques evaluate circuit performance applying suitable repair methods.

Intended Learning Outcomes: (ILOs)

A. Knowledge and Understanding

A1. Concepts and Theories: Use the principles of Electricity and Magnetism

A2. Contemporary Trends, Problems and Research:

Coulomb's Law, Gauss's Law and electric fields, electric potential, capacitance, currents, resistance, electromotive force

A3. Professional Responsibility: Use, graphical and algebraic tools to analyze the problem

B. Subject-specific skills

B1. Problem solving skills: Students solve problems on the board. I giving them group assignments and homeworks and encourage group projects, but I can say that technology has become an integral part of their lives, and use computer programs to draw and solve mathematical equations, derivation and integration and they feel confident in this area.

B2. Modeling and Design: Not applicable.

B3. Application of Methods and Tools: Use the special techniques (to solve the circuits)

Critical-Thinking Skills

C1. Analytic skills: Assess the factors that effect of the diode

C2. Strategic Thinking: Formulate plans designed to achieve maximum useful of the special techniques that the student uses to solve of Biot and Savart, Ampère's law, displacement current, electromagnetic induction, Faraday's and Lenz's laws.

C3. Creative thinking and innovation: Devise easy methods to magnetic problems.

C. General and Transferable Skills (other skills relevant to employability and personal development)

D1. Communication:

1. Students will be able to communicate with teacher, ask questions, solve problems, and use computers.
2. Students ask questions during the lecture, work in groups, and communicate with each other and with me electronically, and periodically visit the sites I recommended.

D2. Teamwork and Leadership:

1. I encourage the student to attend lectures regularly by giving bonus marks for attendance, give students tasks, and ask questions about previous lectures.
2. Mutual respect is between the lecturer and students and among students themselves. I deal with them as young mature people, responsible for their actions and schedules.
3. I apply educational standards and behavioural control when they work in groups, I can assess the response of students as a whole and the team spirit and good character.



