

Electromagnetic fields

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Course: Electromagnetic fields
Topic: Conductors, Dielectric & Capacitance
Semester: III
Academic Year: 2020-21
Teaching Methodology: Seminar

About the Course: This course is specially designed for III Semester students. This will give the students to analyze the behavior of conductors, dielectrics and capacitors. They will get to know about the behavior of conductors in an electric field. They will eventually gain an understanding the concepts of Dielectric & Capacitance.



Fig.1 Student explaining the concept of conductors

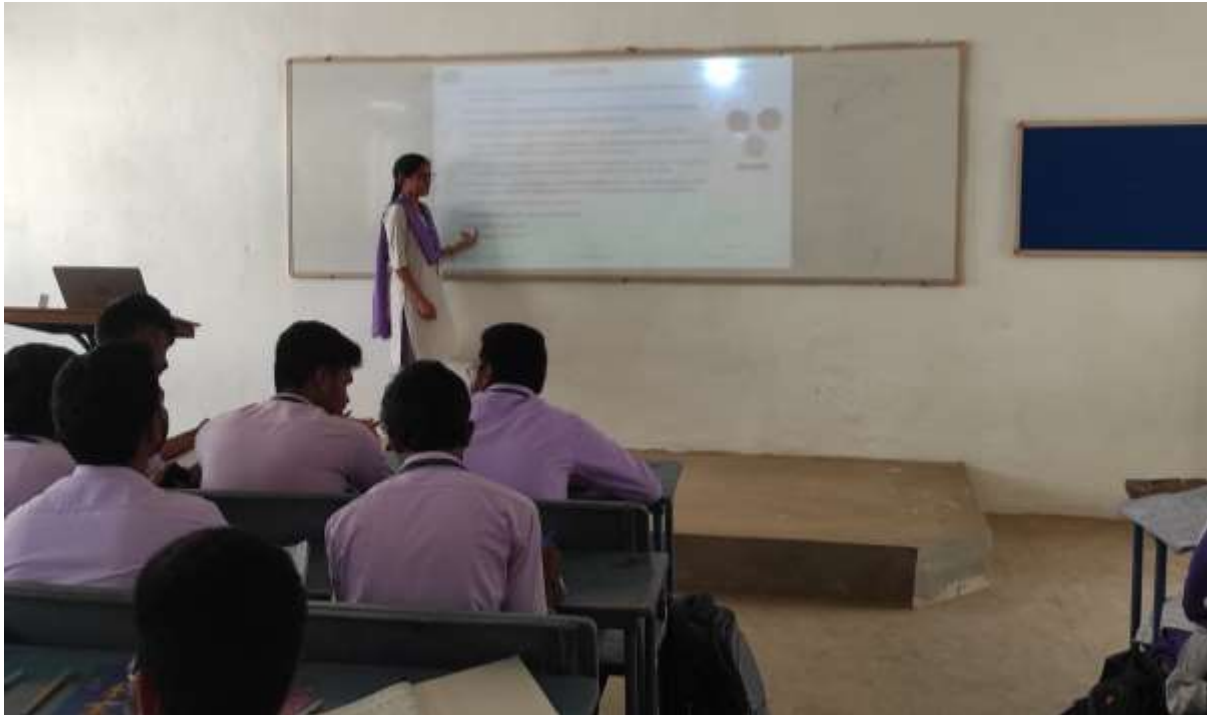


Fig.2 Student explaining the concept of Dielectric



Fig.3 Student explaining the concept of Capacitance

Innovative Teaching Methodology: Seminar

Seminars are an innovative and welcomed step towards modern education. Students interact with experts about the relevant topics of the subject. Students tend to learn about the latest information and new skills related to the concerned subject through seminar.

About the Topic: Conductors, Dielectric & Capacitance

Conductor is one in which the outer electrons of an atom is easily detachable and migrate with application of weak Electric field. A dielectric is one in which the electrons are rigidly bounded to their nucleus, so the ordinary electric field will not be able to detach them away. The dielectric placed in electrostatic field will be subjected to electro static induction. The electric field will have twisted and strain the molecules to orient the positive charges in the direction of electric field and negative charges oppositely. If the electric field strength is too high the dielectric will break down cease to be an insulator.

Concepts like electric dipole, dipole moment and capacitance of parallel plate, spherical and co-axial cables with composite are demonstrated. Also, topics like energy stored and energy density in a static electric field are explained clearly.

Course Outcomes:

Student will be able to:

- Understand the behavior of conductors.
- Understand the behavior of dielectrics
- Understand the behavior of capacitors.