



We Make You Shine

St. JOSEPH'S INSTITUTE OF TECHNOLOGY

St. Joseph's Group of Institutions

Jeppiaar Educational Trust

OMR, Chennai - 119.

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

Innovations by the Faculty in Teaching and Learning

Innovations in Teaching and Learning Strategies

The Department of Electronics and Communication Engineering followed the rigorous continuous improvisation and innovation in teaching and learning process. Students are encouraged to update the knowledge through different teaching learning approaches are listed below:

- 1. Project-based learning**
- 2. Simulation tools-based learning**
- 3. Flipped classrooms.**
- 4. Blended Learning**

1. Project-based learning: In project-based learning, students are given a real-world problem to solve. They must use their knowledge of electronics and communication design to come up with a solution.

2. Simulation tools-based learning: In simulation tools-based learning, students use computer simulation tools to learn about working of specific electronics and communication designs with the help of faculty developed resources in circuits and innovation lab and other academic version simulation tools /freeware resources. This type of learning is very effective for helping students to understand complex concepts.

3. Flipped classrooms: In a flipped classroom, students learn the theoretical concepts independently through pre-recorded lectures or online resources before attending in-person or virtual sessions. This approach allows for more interactive and application-based activities during class time, fostering deeper understanding and collaborative learning.

4. Blended Learning: Blended learning combines traditional face-to-face instruction with online components, providing a balanced learning experience that leverages the strengths of both modalities.

Further, faculties of the department developed E- Content resources and that has been enhanced by subject handling faculties in the successive academic years. Students are encouraged to acquire / refresh knowledge through access of video lectures / E-Content resources, understand the concepts through circuits and innovation lab, self-placed learning through MOOC platforms certification such as IIT Bombay developed Spoken tutorials, NPTEL / Swayam Certification courses in the various fields of Electronics and Communication Engineering. In Constructivist spiral model / flipped classroom, instructional materials are uploaded by faculties in addition to college web portal they also post through google classroom, and evaluation done through assessments, quizzes etc.,. The faculty teams along with Head of the department are available in each google classroom for providing peer review and critique.

In addition to these innovative teaching and learning methods, students are encouraged to:

- ❖ Use active learning techniques, such as group work and discussion, to engage students in the learning process.
- ❖ Providing students with feedback on their work so that they can improve their skills.
- ❖ Use technology to enhance the learning experience, such as online learning platforms and virtual labs.
- ❖ Acquire knowledge through Lecturers from eminent resource persons
- ❖ Practice Activity based learning through department clubs like robotics club for hackathons, symposium, mini-projects, student development programs etc.,
- ❖ Undergo Value added courses that enhance skills to bridge students with Industry requirements.
- ❖ Get trained with Workshop(s) on emerging trends / Industry Needs
- ❖ Use of NPTEL Video Lecturers – Students are presented the video lectures of specialized topics that aims to build gap between curriculum and industry requirements.



Model based Learning/ Virtual LAB

OUTPUT

Sinus Wave Output
 $T = 2ms$
 $F = 500kHz$

Triangular wave output
 $T = 38ms$
 $F = 26.3kHz$

Sawtooth wave output

Video Demonstrations

Professors/ Lecturers

Teaching Learning Process followed in Dept

Model based Learning.
 Project Based Learning
 Simulations Based Understanding
 Blended Learning
 Activity based Learning
 Work in Subgroups - Mentoring System
 Online Technical Meetings
 Webinars
 Discussion
 Tests / Quizzes
 NPTEL /MOOC Learning Platforms

Student Portal

NOTES DOWNLOAD

Academician Name: [Dropdown]
 Roll Number: [Input]
 Branch: [Dropdown]
 Semester: [Dropdown]
 Download: [Button]

Assessment/ Judgement

Dr. V
 Digital Electronics-Unit 3

Introduce & earn Free Super

Introducing new Paper mode

1. Multiple choice
 2. Single choice
 3. True/False
 4. Match
 5. Grid in
 6. Short answer
 7. Long answer



Flipped Classroom

Choice of Curriculum Topics

Formulating Hypothesis / Explanations

Evaluating process & Developing Analogy

Analyze Results

Constructivist Spiral Model