

## ECE Curriculum

Being an affiliated college of Guru Gobind Singh Indraprastha University, Delhi, the department abides by the curriculum framed by its affiliating university for the various programs offered in the department.

It is designed to enhance both the technical and non technical skills of our students. Details of the syllabus are available at <http://www.ipu.ac.in/UnivSyllabus/UnivSyllabusMain.htm> .

## Overview of the Curriculum :

First year is common for all the departments of the institution. The students are introduced to basic fundamentals of electronics, computer science and mechanical engineering,. In addition the students are trained in Humanities and Applied Sciences which helps students to strengthen their basics in Mathematics, Physics Chemistry, Ethics and Communication Skills. Also the students are able to differentiate between the domains of electrical/computer/electronics engineers. It helps the future engineers to make the important decision as to whether they have chosen the field that suits their ability and strength. They have the option of changing the department during first year.

### **NOTE:**

All the subjects and laboratories have been assigned with credits. The detail of the credits assigned to each subject is available on GGSIPU website. However, brief details are as below.

- 1. Total number of credits for B.Tech. (ECE) Programme: 216
- 2. Each student shall be required to appear for examinations in all papers. However, for the award of degree, a student shall be required to earn minimum of 200 credits including mandatory papers.

## For Lateral entry students:

- 1. Total number of credits of the B.Tech(ECE) Programme: 162
- 2. Each student shall be required to appear for examinations in all papers, third semester onwards. However, for the award of degree, a student shall be required to earn a minimum of 150 credits including mandatory papers.

### Courses for ECE in third Semester :

The mandatory subjects for students in ECE, third semester, are listed below.

- Analog Electronics-1
- Switching Theory
- Signals and Systems
- Electronic Instruments and Measurements
- Data Structures
- Applied Mathematics-3

### Courses for ECE in fourth Semester:

The mandatory subjects of ECE in fourth semester are listed below.

- Communication Systems
- Analog Electronics-2
- Applied Mathematics-4
- Electromagnetic Field Theory
- Network Analysis and Synthesis
- Computer Organization and Architecture

### Courses for ECE in Fifth Semester:

The mandatory subjects offered in fifth semester are as given below.

- Control Systems
- Communication Skills for Professionals

- Microprocessors and Microcontrollers
- Industrial Management
- Digital Communication
- Digital System Design

Minimum of two weeks of In-house training related to ECE will be held after fifth semester; however viva-voce will be conducted in sixth semester.

### Course for ECE in Sixth Semester:

The mandatory subjects offered in sixth semester are as given below.

- Microwave Engineering
- Antenna and Wave Propagation
- Digital Signal Processing
- Information Theory and Coding
- VLSI Design
- Data Communication and networks

Minimum of 4-6 weeks of Industrial training related to ECE will be held after the end of sixth semester, however viva-voce will be conducted in seventh semester.

### Course for ECE in Seventh Semester:

The core subjects (Compulsory) included in the final year of ECE are listed below.

- Embedded Systems
- Wireless Systems
- Optical Communication

In addition to the compulsory subjects, GGSIPU offers following elective subjects:-

Elective- Select any two (One from each group):

**Group A:**

- Advanced DSP
- Introduction to MEMS
- Advanced VLSI Design
- Biomedical Instrumentation
- PLC and SCADA Systems
- Power Electronics
- RF Devices & Circuits
- Database Management System
- Renewable Energy Resources

**Group B :**

- Radar & Navigation
- Project Management
- Economics for Engineers
- Grid Computing
- Parallel Computing
- Sociology and Elements of Indian History for Engineers
- Selected Topics in ECE

Elective Paper will be floated if at least one-third of the total students opt for the same. It is advised that decision about elective subject is done before 15th April every year before end of sixth semester.

Students have to submit a project at the end of the semester. However, the synopsis for the same has to be submitted for approval from the departmental committee at the beginning of the semester in the specified format. Thereafter, he/she will have to present the progress of the work through seminars and reports.

### Course for ECE in Eight Semester:

The compulsory subjects offered in this semester are listed below:

- Human Values and Professional Ethics-2
- Satellite Communication
- Digital Signal Processing
- Ad Hoc and Sensor Networks

In addition to the compulsory subjects, GGSIPU offers following elective subjects:-

Elective-Select any two (One from each group):

Group A:

- Consumer Electronics
- Digital Image Processing
- ASIC Design
- Mobile Computing
- Introduction to Nanotechnology

Group B:

- GPS and GIS
- Adaptive Signal Processing
- Robotics
- Computer Graphics and Multimedia
- Next Generation Networks

Elective Paper will be floated if at least one-third of the total students opt for the same.

Students have to submit a project at the end of the semester. However, the synopsis for the same has to be submitted for approval from the departmental committee at the beginning of the semester in the specified format. Thereafter, he/she will have to present the progress of the work through seminars and reports.