

## B.Tech in Electrical Engineering with specialization in IOT Energy Management

### I & II Semester (Common to all the branches)

#### Physics Cycle

- Engineering Mathematics –I
- Physics
- Communicative English
- Problem Solving Through Programming
- Engineering Graphics
- Physics Lab
- Problem Solving Through Programming Lab
- Communicative English Lab
- Engineering Mathematics –I
- Physics
- Communicative English
- Problem Solving Through Programming
- Engineering Graphics
- Physics Lab
- Problem Solving Through Programming Lab
- Communicative English Lab

#### Chemistry Cycle

- Engineering Mathematics – II
- Chemistry
- Basics of Electrical Engineering
- Workshop Practice
- Sociology and Elements of Indian History for Engineers
- Chemistry Lab
- Electrical Engineering Lab
- Engineering Mathematics – II
- Chemistry
- Basics of Electrical Engineering
- Workshop Practice
- Sociology and Elements of Indian History for Engineers
- Chemistry Lab
- Electrical Engineering Lab

### III Semester

- Applied Mathematics
- Electrical Circuit Analysis
- Electronic Devices and Circuits
- Electrical Machines I
- Electromagnetic Fields
- Economics for Engineers
- Electronic Devices and Circuits Laboratory
- Electrical Machines I Laboratory
- Diploma Mathematics I
- Energy studies (Mandatory Course)
- Mathematics for Energy Engineers
- Analog Electronic Circuits
- Network Analysis and Synthesis
- Digital Electronic Circuits
- Signals and Systems
- Analog Electronic Circuits Lab
- Digital Electronics Lab
- Mini project
- **Mandatory Course**
  - Energy Studies

#### IV Semester



- Signals and Systems
- Microprocessors and Microcontrollers
- Electrical Machines II
- Digital System Design using Verilog
- Measurements and Instrumentation
- Electrical Machines II Laboratory
- Digital System Design using Verilog Laboratory
- Diploma Mathematics II
- Electrical Machines
- Power Electronics
- Electromagnetic Fields
- Power Generation, Transmission & Distribution
- Measurements & Instrumentation
- Engineering Biology
- Electrical Machines Lab
- Power Electronics Lab

#### V Semester



- Power Systems I
- Control Systems
- Power Electronics and Drives
- Elective I
- Control Systems Laboratory
- Power Electronics Laboratory
- Internet of Things for Electrical Engineers
- Energy Management in Electrical and Thermal utilities
- **Elective I**
- Electronic Instrumentation
- PIC Microcontroller
- Power System Analysis
- Electrical energy utilization & conservation
- Energy & environment
- Control Systems
- **Elective I**
  - Energy Storage Systems
  - Electrical Safety
  - Renewable Energy Systems
- Open Elective I
- Power Systems Lab I
- Control Systems Lab
- Energy Lab using IOT I

## VI Semester



- Power Systems II
- Professional ethics and Human Values
- Elective II
- Elective III
- Protection and Switchgear
- Power System Simulation Laboratory
- Power System Protection Laboratory
- Modern Microelectronic Devices & Sensors
- Energy Storage System

### Elective II

- Digital Signal Processing
- Arm Processor

### Elective III

- Computer Networks
- Arduino & Raspberry pi

## VII Semester



- Power System Operation and Control
- Special Electrical Machines
- Electives IV
- Electives V
- Open Elective-I
- Open Elective-II
- Project Work –I
- Energy Auditing and Management

### Elective IV

- Digital Image Processing
- Sensors & Transducers

### Elective V

- Industrial Automation
- IOT for Electrical Engineers

## VIII Semester



- Elective VI
- Open Elective-III
- Open Elective-IV
- Internship/ Project work –II
- Industrial Internet of Things

### Elective VI

- Electric Facility Automation
- Artificial Intelligence for Electrical Engineers