

COURSE CURRICULUM
for
B.TECH. DEGREE
in
ELECTRONICS & COMMUNICATION ENGINEERING

(Applicable from the academic session 2024-2025)



Dr. B. C. Roy Engineering College

An Autonomous Institution

Approved by: All India Council for Technical Education (AICTE)

*Affiliated to: Maulana Abul Kalam Azad University of Technology, West Bengal
(Formerly Known as -WBUT)*

Jemua Road, Durgapur, West Bengal, India,713206

Course Name: Project III
Course Code: EC-881
(Semester VIII)
Course Broad Category: PC

1. Course Prerequisite:

Project II

2. Course Learning Objectives:

To enable final-year ECE students to undertake an advanced investigative study by extending the work initiated in Project Stage-I through theoretical analysis, practical implementation, or an integrated approach under academic and/or industry/R&D supervision. The course aims to develop students' ability to identify and solve engineering problems, apply domain knowledge and modern tools, design and validate systems or prototypes, analyze and interpret results, and present findings in a structured dissertation. It also seeks to cultivate research aptitude, innovation, independent learning, project planning, teamwork, professional ethics, and technical leadership, thereby preparing students for higher studies, research, and industry-oriented engineering practice.

3. Teaching methodology and evaluation system for the course:

Teaching methodology –

- Guided project-based learning under faculty and, where applicable, industry/R&D supervision
- Independent and team-based project work involving theoretical and/or practical investigation
- Activities include problem identification, design, simulation, implementation, testing, and analysis
- Periodic reviews, seminars, and technical discussions for progress monitoring and guidance
- Dissertation preparation, documentation, and presentation as integral components
- Emphasis on research aptitude, innovation, teamwork, project management, and technical communication

Evaluation System –

Continuous assessment throughout the course

Evaluation based on:

- Progress reviews
- Quality of implementation
- Originality of work
- Experimental/Simulation results
- Dissertation/Report writing
- Presentation and demonstration
- Viva-voce

Assessment components may include:

- Mid-term Project demonstration
- Pre-final review
- Final project demonstration
- Dissertation evaluation

Evaluation to be conducted by departmental/internal and external evaluation committee

4.Course Content:**Course Name:** Project III**Course Code:** EC-881**Hours per Week:** 0L: 0T: 12P**Credits:** 6

Module	Topics	12P/week
1.	The assignment to normally include: 1. In depth study of the topic assigned in the light of the Report prepared under EC P1; 2. Review and finalization of the Approach to the Problem relating to the assigned topic; 3. Preparing an Action Plan for conducting the investigation, including team work; 4. Detailed Analysis/Modelling/Simulation/Design/Problem Solving/Experiment as needed; 5. Final development of product/process, testing, results, conclusions and future directions; 6. Preparing a paper for Conference presentation/Publication in Journals, if possible; 7. Preparing a Dissertation in the standard format for being evaluated by the Department. 8. Final Seminar Presentation before a Departmental Committee.	

Course Name: Grand Viva
Course Code: EC-882
(Semester VIII)
Course Broad Category: PC

4. Course Prerequisite:

Completion of core and laboratory courses of the B.Tech ECE curriculum

Basic understanding of:

- Analog and Digital Electronics
- Signals and Systems
- Network Theory
- Electronic Devices and Circuits
- Microprocessors and Microcontrollers
- Communication Engineering
- Control Systems
- Electromagnetic Theory / Antennas
- VLSI / Embedded Systems / DSP (as applicable)
- Ability to analyse, integrate, and apply multidisciplinary ECE concepts
- Exposure to project work, seminar, and laboratory practices

5. Course Learning Objectives:

- Assess the student's overall understanding of core ECE subjects
- Evaluate the ability to integrate theoretical knowledge with practical applications
- Develop confidence in technical communication, analytical reasoning, and problem-solving
- Prepare students for higher studies, competitive examinations, placements, and professional practice
- Examine the student's ability to present, justify, and defend engineering concepts and project work

6. Teaching methodology and evaluation system for the course:

Teaching methodology –

- Interactive faculty-guided discussions and revision sessions
- Subject-wise concept reinforcement across major ECE domains
- Question-answer sessions, mock viva, and technical discussions
- Case-based and application-oriented learning
- Review of project work, laboratory knowledge, and interdisciplinary concepts
- Encouragement of self-learning, articulation, and technical presentation skills

Evaluation System –

- Continuous assessment through mock viva / internal viva sessions
- Performance in final viva-voce examination conducted by internal and/or external examiners

4.Course Content:

Course Name: Grand Viva

Course Code: EC-882

Hours per Week: 0L: 0T: 2P

Credits: 2

Module	Syllabus	2P/week
1.	<p>The syllabus shall broadly cover the major theoretical and practical components of the B.Tech ECE program, including but not limited to:</p> <ul style="list-style-type: none"> ▪ Electronic Devices and Circuits ▪ Analog Electronics ▪ Digital Electronics and Logic Design ▪ Network Theory ▪ Signals and Systems ▪ Electromagnetic Theory ▪ Analog and Digital Communication ▪ Control Systems ▪ Microprocessors and Microcontrollers ▪ Digital Signal Processing ▪ VLSI Design ▪ Antenna and Wave Propagation ▪ Embedded Systems ▪ Computer Networks / IoT / Wireless Communication (where applicable) ▪ Project Work, Seminar, and Laboratory-based applications ▪ Recent trends and emerging technologies in Electronics and Communication Engineering 	