

2.6 Student Performance and Learning Outcomes

2.6.1 Program and course outcomes for all programs offered by the Institution are stated and displayed on website and communicated to teachers and students

S.No	Content
1	PO/PSO Dissemination
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PRINCIPAL
JCT College of Engineering & Technology
PICHANUR, COIMBATORE - 641 105.

PO/PSO Dissemination

Institute Website

The screenshot displays the website of JCT Engineering College, an Autonomous Institution. The page is titled "Programme Outcomes (POs)" and lists six outcomes for Engineering Graduates. The outcomes are: Engineering knowledge, Problem analysis, Design/development of solutions, Conduct investigations of complex problems, Modern tool usage, and a partially visible seventh outcome. The page also features a sidebar with links to Laboratory Facilities, Credentials, and Department Events, and a "Scholarships Opportunities" banner. The bottom section of the page shows the "Programme Educational Objectives (PEOs)" for Electronics and Communication Engineering, listing three objectives: becoming globally competent team players, acquiring core technical skills, and delivering innovative solutions. The website includes a navigation menu with links to Home, About JCT, Admission, Courses, Training & Placements, Life @ JCT, and an Online Application button. A "Student Login" button is also present on the right side.

Programme Outcomes (POs)

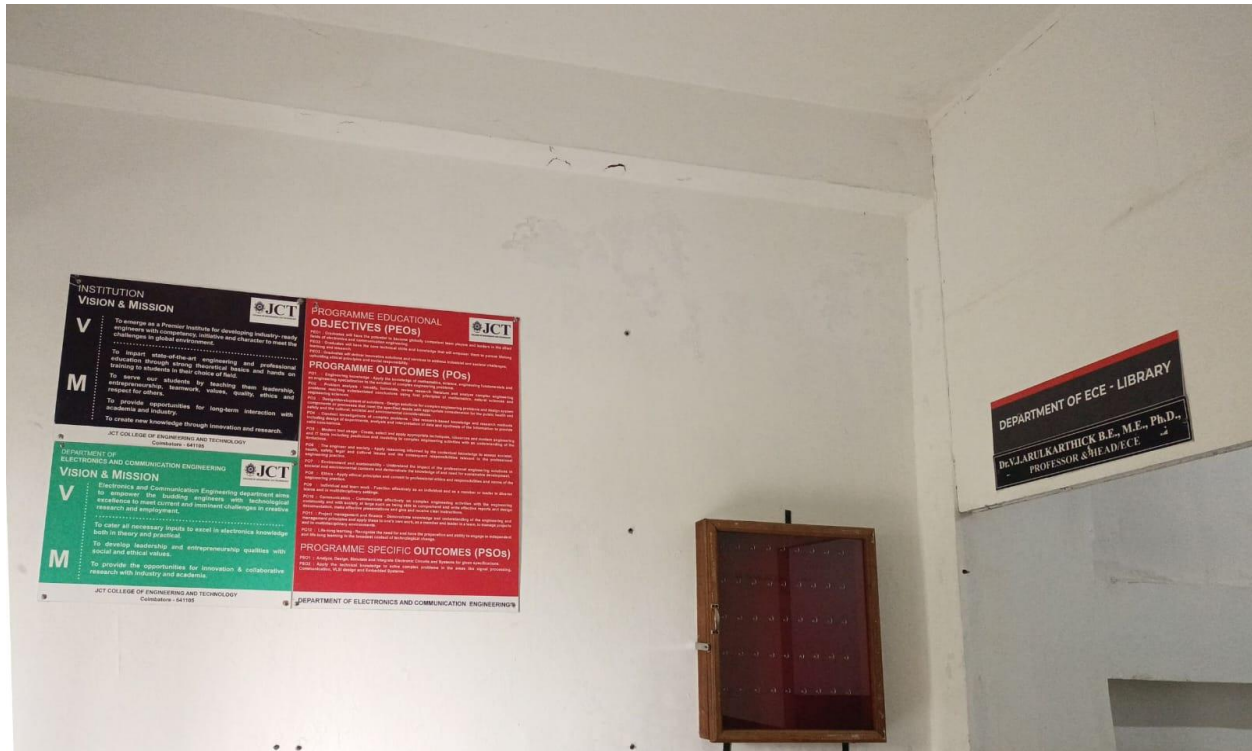
Engineering Graduates will be able to

- ✓ **Engineering knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
- ✓ **Problem analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
- ✓ **Design/development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
- ✓ **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
- ✓ **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools to conduct investigations and design.

Programme Educational Objectives (PEOs)

- ✓ Graduates will have the potential to become globally competent team players and leaders in the allied fields of electronics and communication engineering
- ✓ Graduates will have the core technical skills and knowledge that will empower them to pursue lifelong learning and research
- ✓ Graduates will deliver innovative solutions and services to address industrial and societal challenges, upholding ethical principles and social responsibility.

HoD Cabin



Class Rooms



Laboratories

Linear Integrated Circuits Laboratory



Course Files

Vision and Mission Statements – Institution

VISION:

To emerge as a Premier Institute for developing industry-ready engineers with competency, initiative and character to meet the challenges in global environment.

MISSION:

- To impart state-of-the-art engineering and professional education through strong theoretical basics and hands on training to students in their choice of field.
- To serve our students by teaching them leadership, entrepreneurship, teamwork, values, quality, ethics and respect for others.
- To provide opportunities for long-term interaction with academia and industry.
- To create new knowledge through innovation and research.

Department of Electronics and Communication Engineering B.E - PROGRAMME

Vision and Mission Statements – Department

VISION:

Electronics and Communication engineering department aims to empower the budding engineers to meet current

and imminent challenges in creative research and employment with technological excellence.

MISSION:

The mission of the Electronics and Communication Engineering Department is

- To cater all necessary inputs to excel in electronics knowledge both in theory and practical.
- To develop leadership and entrepreneurship qualities with social and ethical values.
- To provide the opportunities for innovation & collaborative research with industry and academia.

PROGRAM EDUCATIONAL OBJECTIVES

PEO1: Graduates will have the potential to become globally competent team players and leaders in the allied fields of electronics and communication engineering.


PEO2: Graduates will have the core technical skills and knowledge that will empower them to pursue lifelong learning and research.

PEO3: Graduates will deliver innovative solutions and services to address industrial and societal challenges, upholding ethical principles and social responsibility.



PROGRAM OUTCOMES (POs)

1. **Engineering Knowledge:** Apply the knowledge of mathematics, science, engineering fundamentals and an engineering specialization to the solution of complex engineering problems.
2. **Problem Analysis:** Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. **Design / Development of solutions:** Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
4. **Conduct investigations of complex problems:** Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.
5. **Modern tool usage:** Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.
6. **The engineer and society:** Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.
7. **Environment and sustainability:** Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. **Ethics:** Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

Lab Manuals

 JCT College of Engineering and Technology (AUTONOMOUS) JCT is a part of the JCT Group of Institutions, which is a part of the JCT Group of Institutions. JCT is a part of the JCT Group of Institutions, which is a part of the JCT Group of Institutions. VISION To emerge as a Premier Institute for developing industry ready engineers with competency, initiative and character to meet the challenges in global environment. MISSION <ul style="list-style-type: none">To impart state-of-the-art engineering and professional education through strong theoretical base and hands-on training to students to their choice of field.To serve our students by teaching them leadership, entrepreneurship, teamwork, values, quality, ethics and respect for others.To provide opportunities for long term interaction with academia and industry.To create new knowledge through innovation and research. DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING VISION To produce the leaders in the field of Computer Science and Engineering, ending as a Center of Excellence for Learning and Research. MISSION Computer Science and Engineering Department is committed: <ul style="list-style-type: none">To develop globally competent engineers capable of providing secure and Out-of-the-Box computing and cutting-edge technology solutions.To provide state-of-art laboratories and quality learning environment.To educate students with ethical values and to serve society with innovative, intelligent products and services.	Programme Educational Objectives (PEOs) PEO1: Graduates shall exhibit their sound theoretical, practical skills and knowledge for successful employment or higher studies or research or entrepreneurial assignments. PEO2: Graduates shall have lifelong learning skills, professional ethics and good communication capabilities along with leadership skills, so that they are successful in their life. PEO3: Graduates shall become leaders, innovators and entrepreneurs by devising software solutions for social issues and problems, first using for the society. Programme Outcomes (POs) Engineering Graduates will be able to: <ol style="list-style-type: none">1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.2. Problem analysis: Identify, formulate, research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.3. Design/development of solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.4. Conduct investigations of complex problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.5. Modern tool usage: Choose, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modeling to complex engineering activities with an understanding of the limitations.6. The engineer and society: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities related to the professional engineering practice.7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for, sustainable development.8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.10. Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.11. Project management and finance: Demonstrate knowledge and understanding of the engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.12. Life-long learning: Strengthen the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.
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Department News Letter



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

VISION

Electronics and Communication engineering department aims to empower the budding engineers to meet current and imminent challenges in creative research and employment with technological excellence.

MISSION

1. To cater all necessary inputs to excel in electronics knowledge both in theory and practical.
2. To develop leadership and entrepreneurship qualities with social and ethical values.
3. To provide the opportunities for innovation & collaborative research with industry and academia

PROGRAMME EDUCATIONAL OBJECTIVES (PEOs)

PEO 1: Graduates will have the potential to become globally competent team players and leaders in the allied fields of electronics and communication engineering.

PEO 2: Graduates will have the core technical skills and knowledge that will empower them to pursue lifelong learning and research

PEO 3: Graduates will deliver innovative solutions and services to address industrial and societal challenges, upholding ethical principles and social responsibility.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Design, develop and analyze electronic systems through application of relevant electronics, mathematics and engineering principles.

PSO2: Design, develop and analyze communication systems through application of fundamentals from communication principles, signal processing, and RF System Design & Electromagnetics.

Department Magazine

DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING

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PEO3: Graduates will develop and deliver innovative solutions and services that address industrial and societal challenges, while upholding ethical principles and social responsibility.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Design, develop and analyze electronic systems through application of relevant electronics, mathematics and engineering principles


PSO2: Design, develop and analyze communication systems through application of fundamentals from communication principles, signal processing, and RF System Design & Electromagnetics.

PSO3: Adapt to emerging electronics and communication technologies and develop innovative solutions for existing and newer problems

**EDITORIAL BOARD :**
Dr.V.J.ARULKARTHICK -DIRECTOR -IQAC/HOD-ECE
Ms.A.SINDHU /Assistant Professor

Course Outcome Dissemination

Website




JCT
COLLEGE OF ENGINEERING AND TECHNOLOGY
AN AUTONOMOUS INSTITUTION

[HOME](#) [ABOUT JCT](#) [ADMISSION](#) [COURSES](#) [TRAINING & PLACEMENTS](#) [LIFE @ JCT](#) [ONLINE APPLICATION](#)

- ✓ Capable of successfully qualifying in national level competitive examinations for higher studies and employment.
- ✓ The ability to comprehend the basic concepts of electronics and apply them in the day to day life to design and execute complete engineering systems in signal processing, communications and computer networks, etc.

Course Outcome


- ✓ [Click here to view PDF - Course Outcome](#)



JCT
COLLEGE OF ENGINEERING AND TECHNOLOGY
AN AUTONOMOUS INSTITUTION

JCT College Of Engineering And Technology, Pichanur, Coimbatore 641105, TamilNadu, India.

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Course File

JCT

JCT COLLEGE OF ENGINEERING AND TECHNOLOGY
PICHANUR, COIMBATORE- 641105



DEPARTMENT OF ELECTRONICS AND COMMUNICATION ENGINEERING
COURSE DATA SHEET

PROGRAM : ELECTRONICS & COMMUNICATION ENGINEERING	DEGREE : B.E
COURSE : DIGITAL SYSTEM DESIGN	SEMESTER : III CREDITS : 4
COURSE CODE: EC3352	REGULATION: 2021
COURSE AREA/DOMAIN: DIGITAL ELECTRONICS	CONTACT HOURS: 6
CORRESPONDING LAB COURSE CODE (IF ANY): EC3352	LAB COURSE NAME (IF ANY): DIGITAL SYSTEM DESIGN LAB

UNIT	DETAILS	HOURS
I	UNIT I BASIC CONCEPTS Review of number systems: representation-conversions, Review of Boolean algebra: theorems, sum of product and product of sum simplification, canonical forms min term and max term, Simplification of Boolean expressions-Karnaugh map, completely and incompletely specified functions, Implementation of Boolean expressions using universal gates, Tabulation methods.	9
II	UNIT II COMBINATIONAL LOGIC CIRCUITS Problem formulation and design of combinational circuits - Code-Converters, Half and Full Adders, Binary Parallel Adder - Carry look ahead Adder, BCD Adder, Magnitude Comparator, Decoder, Encoder, Priority Encoder, Mux/Demux, Case study: Digital trans-receiver / 8 bit Arithmetic and logic unit, Parity Generator/Checker, Seven Segment display decoder	9
III	UNIT III SYNCHRONOUS SEQUENTIAL CIRCUITS Latches, Flip flops - SR, JK, T, D, Master/Slave FF, Triggering of FF, Analysis and design of clocked sequential circuits - Design - Moore/Mealy models, state minimization, state assignment, lock - out condition circuit implementation - Counters, Ripple Counters, Ring Counters, Shift registers, Universal Shift Register, Model Development: Designing of rolling display/real time clock	9
IV	UNIT IV ASYNCHRONOUS SEQUENTIAL CIRCUITS Stable and Unstable states, output specifications, cycles and races, state reduction, race free assignments, Hazards, Essential Hazards, Fundamental and Pulse mode sequential circuits, Design of Hazard free circuits.	9
V	UNIT V LOGIC FAMILIES AND PROGRAMMABLE LOGIC DEVICES Logic families- Propagation Delay, Fan - In and Fan - Out - Noise Margin - RTL, TTL, ECL, CMOS - Comparison of Logic families - Implementation of combinational logic/sequential logic design using standard ICs, PROM, PLA and PAL, basic memory, static ROM, PROM, EPROM, EEPROM, EAPROM.	9
TOTAL THEORY HOURS		45

PRACTICAL EXERCISES:
1. Design of adders and subtractors & code converters.
2. Design of Multiplexers & Demultiplexers.

TEXT/REFERENCE BOOKS:

T/R	BOOK TITLE/AUTHORS/PUBLICATION
T	W. Morris Mano, Michael D. Ciletti, "Digital Design, With an Introduction to the Verilog HDL, VHDL, and System Verilog", Sixth Edition, Pearson Education, 2018.
R	Charles H. Roth, Jr, "Fundamentals of Logic Design", Jaico Books, 4th Edition, 2002.
R	William J. Fletcher, "An Engineering Approach to Digital Design", Prentice-Hall of India, 1980.
R	Floyd T.L., "Digital Fundamentals", Charles E. Merrill publishing company, 1982.
R	John F. Shaker, "Digital Design Principles and Practices", Pearson Education, 4th Edition, 2002.

COURSE PRE-REQUISITES:

C.CODE	COURSE NAME	DESCRIPTION	SEM
BE3251	Basic electrical and electronics engineering	Study of digital electronics	II

COURSE OBJECTIVES:

1	To present the fundamentals of digital circuits and simplification methods
2	To practice the design of various combinational digital circuits using logic gates
3	To bring out the analysis and design procedures for synchronous and asynchronous Sequential circuits
4	To learn integrated circuit families
5	To introduce semiconductor memories and related technology

COURSE OUTCOMES:

SL.No.	DESCRIPTION	PO(1..12) MAPPING	PSO(1..2) MAPPING
C206.1	Apply Boolean algebra to simplify logic circuits.	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO12	PSO1,PSO2
C206.2	Explain the concept of combinational digital circuits and their role in digital systems.	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO12	PSO1,PSO2
C206.3	Demonstrate the principles of sequential circuits and design those using flip-flops, counters and state machines	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO12	PSO1,PSO2
C206.4	Outline the steps involved in designing hazard-free sequential circuits.	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO12	PSO1,PSO2
C206.5	Build logic gates and use programmable logic devices.	PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO12	PSO1,PSO2

COURSE OVERALL PO / PSO MAPPING: PO1,PO2,PO3,PO4,PO5,PO8,PO9,PO10,PO12,PSO1,PSO2

COURSE OUTCOMES VS POs MAPPING (DETAILED: HIGH: 3; MEDIUM: 2; LOW: 1):

SNO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C206.1	3	2	1	1	1	-	-	2	2	1	-	3	2	3
C206.2	2	2	1	1	1	-	-	2	2	1	-	3	2	3

Lab Manual



JCT College of Engineering and Technology
Approved by ARCTE, New Delhi, Affiliated to Anna University, Chennai & Accredited by NAAC
Pichanur, Coimbatore - 641105 | info@jct.ac.in | www.jct.ac.in | 8422 263696



DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

LAB MANUAL



EC3461 Communication systems Laboratory

(2021-Regulation)

II YEAR / IV SEMESTER

NAME OF THE STUDENT: _____

REGISTER NUMBER : _____

DEPARTMENT : _____

YEAR / SEMESTER : _____

PROGRAM SPECIFIC OUTCOMES

At the end of the programme, the graduates will be able to

1. Analyse, Design, Simulate and Integrate Electronic Circuits and Systems for given specifications.
2. Apply the technical knowledge to solve complex problems in the areas like signal processing, Communication, VLSI design and Embedded Systems.

CO-PO & CO-PSO MAPPING

CO No.	Course Outcomes (COs)	Knowledge Level
C217.1	Apply AM, FM & Digital Modulators for specific applications.	K3
C217.2	Apply the sampling frequency for digital modulation	K3
C217.3	Apply & validate the various functional modules of Communication system	K3
C217.4	Demonstrate their knowledge in base band signaling schemes through implementation of digital modulation schemes.	K2
C217.5	Identify various channel coding schemes & demonstrate their capabilities towards the improvement of the noise performance of Communication system.	K2

CO - PO MATRICES OF COURSE

Mapping of Course Outcomes with Program Outcomes & Program Specific Outcomes :														
CO No	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2
C217.1	3	3	3	3	3	3	-	-	-	1	1	1	1	3
C217.2	3	3	3	3	3	2	-	-	-	1	1	1	1	3
C217.3	3	3	3	3	3	2	-	-	-	1	1	1	1	3
C217.4	3	3	3	3	3	3	-	-	-	1	1	1	1	3
C217.5	3	3	3	3	3	2	-	-	-	1	1	1	1	3
C217	3	3	3	3	3	2.5	-	-	-	1	1	1	1	3

