



**VINAYAKA MISSION'S
RESEARCH FOUNDATION**

(Deemed to be University under section 3 of the UGC Act 1956)

Faculty of Engineering and Technology

REGULATIONS 2025

Programme:

B.E / B.Tech.-ELECTRONICS AND COMMUNICATION ENGINEERING

**Regular Degree Programme for Working Professionals
Time Period (3 Years)**

CHOICE BASED CREDIT SYSTEM (CBCS)

CURRICULUM

(Semester I to VI)

**VINAYAKA MISSION'S RESEARCH FOUNDATION DEEMED TO BE
UNIVERSITY, SALEM**

CURRICULUM FOR WORKING PROFESSIONALS

REGULATION-2025

Credit Requirement for the Course Categories

DEPARTMENT OF ECE

Sl. No.	Category of Courses	Types of Courses	Suggested Breakup of Credits (min – max)	
1.	A. Foundation Courses (9)	Humanities and Social Sciences	3	
2.		Basic Science courses, Engineering Science courses including workshop, drawing, basics of Electrical / Mechanical / Computer etc.	6	
3.	B. Professional (62)	Core courses	62	
4.	C. Elective Courses (36)	Professional Electives / Specialization Electives	12-15	
		Industry Electives: Industry Designed/ Industry Supported/ Industry Sponsored courses/ Industry Integrated	3-9	
		Vocational Skill development courses	2	
		Open Electives	Innovation and Entrepreneurship	3-9
			Interdepartmental Open Electives including Management courses	3-9
		Special Electives (Any One)	Lean Six Sigma Project Management and Team Work	3
University Multidisciplinary Open Electives		1		
5.	D. IKS (2)	Indian Knowledge Systems	2	
6.	E.DT(1)	Design Thinking	1	
7.	F.Courses for Presentation of technical Skills related to the specialization (11)	Mini Project	3	
		Project work	8	
8.	**G. Mandatory Courses (4) (to be completed from 1 st Semester to 6 th Semester)	Research Methodologies	1	
		Indian Constitution	1	
		Environmental sciences	1	
		Yoga and Meditations / NCC / NSS /RRC / YRC / Students Clubs / unnat Bharat Abhiyan / Swachh Bharat / Sports and Games	1	
Minimum Credits to be earned			125	
** The credits earned in category 'G' Courses will not be counted in CGPA calculation				

B.E./B.TECH. – ELECTRONICS AND COMMUNICATION ENGINEERING(WP) - SEMESTER I TO VI**A. Foundation Courses (9)****Humanities and Social Sciences Courses – Credits (3)**

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	34125H02	UNIVERSAL HUMAN VALUES - UNDERSTANDING HARMONY II	ENG	FC-HS	2	2	0	3	NIL
2.	34125H03	BUSINESS ENGLISH	ENG	FC-HS	2	0	0	2	NIL
3.	34125H05	PROFESSIONAL ENGLISH COMMUNICATION	ENG	FC-HS	2	0	0	2	NIL

Basic Science courses, Engineering Science courses including Workshop, Drawing, Basics of Electrical / Mechanical / Computer etc.– Credits (6)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	34125F01	MATRICES AND CALCULUS	MATHS	FC-BS	2	1	0	3	NIL
2.	34125F07	PARTIAL DIFFERENTIAL EQUATIONS AND TRANSFORMS	MATHS	FC-BS	2	1	0	3	Matrices and Calculus
3.	34125F06	NUMERICAL METHODS & OPTIMIZATION-ECE	MATHS	FC-BS	2	1	0	3	Matrices and Calculus
4.	34125F08	PROBABILITY AND QUEUEING THEORY	MATHS	FC-BS	2	1	0	3	Matrices and Calculus
5.	34425F03	ENGINEERING GRAPHICS AND DESIGN	MECH	FC-ES	0	0	6	3	NIL
6.	35025F01	ARTIFICIAL INTELLIGENCE IN SCIENTIFIC RESEARCH AND EDUCATION	CSE	FC-ES	3	0	0	3	NIL
7.	35025F02	JAVA AND C# .NET APPLICATIONS	CSE	FC-ES	3	0	0	3	NIL

B.E./B.TECH. – ELECTRONICS AND COMMUNICATION ENGINEERING(WP) - SEMESTER I TO VI**B. Professional (62)****Professional Core Courses – Credits (62)**

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34725C04	SEMICONDUCTOR DEVICES (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	BASICS OF ELECTRONICS ENGINEERING
2	34725C01	ANALOG CIRCUITS (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	SEMICONDUCTOR DEVICES
3	34725C02	DIGITAL SYSTEM DESIGN (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	BASICS OF ELECTRONICS ENGINEERING
4	34725C06	SIGNALS AND SYSTEMS	ECE	CC	3	0	0	3	DIFFERENTIAL EQUATIONS AND TRANSFORMS
5	34725C19	SIGNAL & IMAGE PROCESSING (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	SIGNALS AND SYSTEMS
6	34725C20	TRANSMISSION LINES AND RF SYSTEMS	ECE	CC	3	0	0	3	NIL
7	34725C08	ANALOG AND DIGITAL COMMUNICATION (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	DIGITAL SYSTEM DESIGN

8	34725C09	ANTENNA, OPTICAL AND MICROWAVE ENGINEERING	ECE	CC	3	0	0	3	TRANSMISSION LINES AND RF SYSTEMS
9	34625C02	CONTROL SYSTEMS	EEE	CC	3	0	0	3	DIFFERENTIAL EQUATIONS AND TRANSFORMS
10	34725C10	COMPUTER COMMUNICATION AND NETWORKS	ECE	CC	3	0	0	3	NIL
11	34725C21	WIRELESS COMMUNICATION 5G & BEYOND	ECE	CC	3	0	0	3	ANALOG AND DIGITAL COMMUNICATION
12	34725C12	DIGITAL VLSI DESIGN (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	DIGITAL CIRCUITS DESIGN
13	34725C18	MICROCONTROLLERS & EMBEDDED SYSTEMS (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	NIL
14	34725C13	EMBEDDED SYSTEM DESIGN (THEORY AND PRACTICALS)	ECE	CC	3	0	2	4	MICROCONTROLLERS & EMBEDDED SYSTEMS
15	34725C15	FUNDAMENTALS OF SENSORS AND TRANSDUCERS	ECE	CC	3	0	0	3	NIL
16	34725C03	INTRODUCTION TO MACHINE LEARNING USING PYTHON	ECE	CC	3	0	0	3	NIL
17	34725C16	MACHINE LEARNING AND PATTERN RECOGNITION	ECE	CC	3	0	0	3	NIL
18	34725C14	ETHICS IN AI	ECE	CC	3	0	0	3	NIL

**B.E./B.TECH. – ELECTRONICS AND COMMUNICATION ENGINEERING(WP) - SEMESTER I TO VI
DETAILS OF ELECTIVE COURSES**

C. Elective Courses (36)

Professional Electives / Specialization Electives – Credits (12-15)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34725P10	FLEXIBLE ELECTRONICS	ECE	EC-PS	3	0	0	3	NIL
2	34725P25	RADAR AND LIDAR COMMUNICATION SYSTEMS	ECE	EC-PS	3	0	0	3	SIGNAL & IMAGE PROCESSING
3	34725P14	HIGH SPEED ELECTRONICS	ECE	EC-PS	3	0	0	3	NIL
4	34725P27	SATELLITE COMMUNICATION & REMOTE SENSING	ECE	EC-PS	3	0	0	3	NIL
5	34725P02	APPLICATION OF GREEN ENERGY	ECE	EC-PS	3	0	0	3	NIL
6	34725P12	FUNDAMENTALS OF OPERATING SYSTEM	ECE	EC-PS	3	0	0	3	NIL
7	34725P13	HARDWARE MODELLING USING HDL	ECE	EC-PS	3	0	0	3	ANALOG & DIGITAL COMMUNICATION
8	34725P19	MICROELECTRONIC DEVICES & ANALOG VLSI DESIGN	ECE	EC-PS	3	0	0	3	DATA COMMUNICATION NETWORKS
9	34725P20	NANO ELECTRONICS AND NANO PARTICLES	ECE	EC-PS	3	0	0	3	NIL
10	34725P18	INTRODUCTION TO MEMS	ECE	EC-PS	3	0	0	3	NIL
11	34725P21	OPTIMIZED COMPACT MODELS IN SEMICONDUCTOR DESIGN	ECE	EC-PS	3	0	0	3	DIGITAL CIRCUITS DESIGN

12	34725P09	ERROR CONTROL CODING FOR SECURED DATA TRANSMISSION	ECE	EC-PS	3	0	0	3	NIL
13	34725P01	ADAPTIVE SIGNAL PROCESSING	ECE	EC-PS	3	0	0	3	NIL
14	34725P22	PREDICTIVE & GENERATIVE AI FOR TEXT, IMAGE AND VIDEO PROCESSING	ECE	EC-PS	3	0	0	3	NIL
15	34725P26	ROBOTICS AND COMPUTER VISION IN IOT	ECE	EC-PS	3	0	0	3	NIL
16	34725P16	INTELLIGENT RADIO DESIGN	ECE	EC-PS	3	0	0	3	NIL
17	34725P17	INTERNET OF THINGS FOR ELECTRONICS	ECE	EC-PS	3	0	0	3	NIL
18	34725P15	INDUSTRIAL IoT	ECE	EC-PS	3	0	0	3	NIL
19	34725P28	WEARABLE SYSTEMS FOR IoT	ECE	EC-PS	3	0	0	3	NIL
20	34725P24	QUANTUM ENGINEERING AND INFORMATION SYSTEMS	ECE	EC-PS	3	0	0	3	NIL
21	34725P03	ARTIFICIAL INTELLIGENCE IN RADIO COMMUNICATION	ECE	EC-PS	3	0	0	3	NIL

Industry Designed/ Industry Supported/ Industry Offered/ Industry Sponsored courses - Credits (3-9)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34125I04	BUSINESS INTELLIGENCE AND ITS APPLICATIONS	INFOSYS	EC-IE	3	0	0	3	NIL
2	34125I20	LEARNING IT ESSENTIALS BY DOING	INFOSYS	EC-IE	3	0	0	3	NIL
3	34125I03	BUILDING ENTERPRISE APPLICATIONS	INFOSYS	EC-IE	3	0	0	3	NIL

Electives from Vocational Skill Development Courses – Credits (2)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34725V81	ADVANCED TECHNOLOGY FOR SMARTPHONE SERVICING & TROUBLESHOOTING	ECE	EC-VSD	0	0	4	2	NIL
2	34725V82	DRONE TECHNOLOGY – ASSEMBLY & PROGRAMMING	ECE	EC-VSD	0	0	4	2	NIL
3	34725V83	IDEA TO STARTUP PROCESS IN EMBEDDED SYSTEMS	ECE	EC-VSD	0	0	4	2	NIL
4	34725V84	IOT HARDWARE INTEGRATION	ECE	EC-VSD	0	0	4	2	NIL

Open Electives – Electives from Innovation, Entrepreneurship. - Credits (3-9)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34125O05	CREATIVITY AND INNOVATION MANAGEMENT	MANAG	OE-IE	3	0	0	3	NIL
2	34125O08	INTELLECTUAL PROPERTY RIGHTS	MANAG	OE-IE	3	0	0	3	NIL
3	34125O09	PRODUCT DESIGN & DEVELOPMENT	MANAG	OE-IE	3	0	0	3	NIL
4	34125O07	ENTREPRENEURSHIP AND NEW VENTURE CREATION	MANAG Ignite 5.0 course by Wadhvani foundation	OE-IE	3	0	0	3	NIL

Open Electives – Electives from other Interdepartmental Open Electives including Management courses - Credits-(3-9)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
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1	35325001	BODY AREA NETWORKS	BME	OE-EA	3	0	0	3	NIL
2	35325002	FUNDAMENTALS OF BIOMEDICAL ENGINEERING	BME	OE-EA	3	0	0	3	NIL
3	35325003	TELEHEALTH TECHNOLOGY	BME	OE-EA	3	0	0	3	NIL
4	38125001	BIOFERTILIZER TECHNOLOGY	BTE	OE-EA	3	0	0	3	NIL
5	38125002	FOOD SCIENCE AND INDUSTRY 4.0	BTE	OE-EA	3	0	0	3	NIL
6	38125003	INTRODUCTION TO BIOFUELS	BTE	OE-EA	3	0	0	3	NIL
7	34225002	INDUSTRIAL PLANT DESIGN & ENGINEERING	CIVIL	OE-EA	3	0	0	3	NIL
8	34225003	SUSTAINABLE WASTE MANAGEMENT PRACTICES	CIVIL	OE-EA	3	0	0	3	NIL
9	34225001	DISASTER MANAGEMENT AND MITIGATION STRATEGIES	CIVIL	OE-EA	3	0	0	3	NIL
10	35025001	CYBER SECURITY	CSE	OE-EA	3	0	0	3	NIL
11	35025003	FUNDAMENTAL OF MACHINE LEARNING	CSE	OE-EA	3	0	0	3	NIL
12	35025002	DATA SCIENCE FOR PROFESSIONALS	CSE	OE-EA	3	0	0	3	NIL
13	34625001	ENERGY CONSERVATION AND MANGEMENT	EEE	OE-EA	3	0	0	3	NIL
14	34625002	IOT SYSTEMS: AN INTRODUCTION TO SENSORS AND TRANSDUCERS	EEE	OE-EA	3	0	0	3	NIL
15	34625003	SMART CITIES: ELECTRICAL SYSTEMS AND TECHNOLOGIES	EEE	OE-EA	3	0	0	3	NIL
16	34425001	3D PRINTING AND ITS APPLICATIONS	MECH	OE-EA	3	0	0	3	NIL
17	34425002	ENERGY HARVESTING AND RENEWABLE ENERGY SYSTEMS	MECH	OE-EA	3	0	0	3	NIL
18	34425003	INDUSTRIAL ROBOTICS	MECH	OE-EA	3	0	0	3	NIL
19	36925002	BIOPHARMACEUTICS	PCE	OE-EA	3	0	0	3	NIL
20	36925003	FUNCTIONAL FOODS & NUTRACEUTICALS	PCE	OE-EA	3	0	0	3	NIL
21	36925001	BIOMOLECULES	PCE	OE-EA	3	0	0	3	NIL
22	34125002	TOTAL QUALITY MANAGEMENT	MANAG	OE-EA	3	0	0	3	NIL
23	34125001	ENGINEERING MANAGEMENT AND ETHICS	MANAG	OE-EA	3	0	0	3	NIL
24	34125003	MANAGEMENT PRINCIPLES FOR ENGINEERS	MANAG	OE-EA	3	0	0	3	NIL

Open Electives – Special Electives– Credits (3)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34125L01	LEAN SIX SIGMA	MANAG	OE-SP	3	0	0	3	NIL
2	34125L02	PROJECT MANAGEMENT AND TEAM WORK	MANAG	OE-SP	3	0	0	3	NIL

Open Electives – Electives from University Multidisciplinary Open Electives – Credits (1)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	40625U01	DENTAL HYGIENE & QUALITY OF LIFE	DENTISTRY	OE-UOE	1	0	0	1	NIL
2	40625U02	NUTRITION FOR WELLNESS & SPECIFIC DISEASES	NURSING	OE-UOE	1	0	0	1	NIL
3	40625U03	FUNDAMENTALS OF HOMOEOPATHY	HOMOEOPATHY	OE-UOE	1	0	0	1	NIL
4	40625U04	ADVERTISING	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL
5	40625U05	TEAMWORK & COLLABORATION	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL

6	40625U06	EMOTIONAL INTELLIGENCE	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL
7	40625U07	MEDIA MANAGEMENT	ARTS & SCIENCE	OE-UOE	1	0	0	1	NIL
8	40625U08	EXERCISE ESSENTIALS FOR PHYSICAL FITNESS	PHYSIOTHERAPY	OE-UOE	0	0	2	1	NIL
9	40625U09	ESSENTIAL SKILLS FOR MEDICAL EMERGENCIES	MEDICINE	OE-UOE	1	0	0	1	NIL
10	40625U10	MEDICINE PLANTS IN DISEASE MANAGEMENT	PHARMACY	OE-UOE	1	0	0	1	NIL
11	40625U11	BASIC LIFE SUPPORT	ALLIED HEALTH SCIENCES	OE-UOE	1	0	0	1	NIL
12	40625U12	MALLARKHAMBAM	PHYSICAL EDUCATION	OE-UOE	0	0	2	1	NIL
13	40625U13	SILAMBAM	PHYSICAL EDUCATION	OE-UOE	0	0	2	1	NIL
14	40625U14	BASIC FITNESS TRAINING	PHYSICAL EDUCATION	OE-UOE	0	0	2	1	NIL
15	40625U15	RECREATIONAL GAMES	PHYSICAL EDUCATION	OE-UOE	0	0	2	1	NIL
16	40625U16	INTRODUCTION TO LAW	LAW	OE-UOE	1	0	0	1	NIL
17	40625U17	FUNDAMENTALS OF LAW IN TECHNOLOGY AND CYBER SPACE	LAW	OE-UOE	1	0	0	1	NIL
18	40625U18	FOUNDATION COURSE IN YOGA	REHABILITATION AND BEHAVIORAL SCIENCES	OE-UOE	1	0	0	1	NIL
19	40625U19	INTRODUCTION TO PSYCHOLOGY	REHABILITATION AND BEHAVIORAL SCIENCES	OE-UOE	1	0	0	1	NIL
20	40625U20	INTRODUCTION TO PUBLIC POLICY AND GOVERNANCE	LIBERAL ARTS	OE-UOE	1	0	0	1	NIL
21	40625U21	INDIAN ECONOMY AND DEVELOPMENT CHALLENGES	LIBERAL ARTS	OE-UOE	1	0	0	1	NIL
22	After Swayam Certification	ANY SWAYAM / MOOC / NPTEL COURSES WHICH ARE NOT RELATED TO THE DISCIPLINE OF STUDY OF THE STUDENT CAN BE CHOSEN AS AN OPEN ELECTIVE IN CONSULTATION WITH THE RESPECTIVE FACULTY ADVISOR OF THE INSTITUTION.		OE-UOE	1	0	0	1	NIL

B.E./B.TECH. – ELECTRONICS AND COMMUNICATION ENGINEERING - SEMESTER I TO VI

D. Courses for Indian Knowledge Systems (2)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34725K01	INDIAN KNOWLEDGE SYSTEMS	ENG	IKS	2	0	0	2	NIL

E. Courses for Design Thinking – Credits (1)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1	34725D01	DESIGN THINKING AND ADVANCED PROBLEM SOLVING	CSE-HCL TECH	DT	1	0	0	1	NIL

B.E./B.TECH. – ELECTRONICS AND COMMUNICATION ENGINEERING - SEMESTER I TO VI

F. Courses for Presentation of technical Skills related to the specialization (11)

Project Work, Seminar and Internship – Credits (11)

S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	34725R01	PROJECT WORK	ECE	PI-P	0	0	16	8	NIL
2.	34725M01	MINI PROJECT	ECE	PI-M	0	0	6	3	NIL

Microcredentials Courses									
Credits – (2)									
S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	34725J81	AI-DRIVEN HARDWARE DESIGN AND CO-DESIGN SYSTEMS	ECE	MCC	0	0	2	1	NIL
2.	34725J83	EDGE AI AND TINYML FOR REAL-TIME APPLICATIONS	ECE	MCC	0	0	2	1	NIL
3.	34725J84	ELECTROMAGNETIC COMPATIBILITY (EMC) AND SIGNAL INTEGRITY	ECE	MCC	0	0	2	1	NIL
4	34725J85	SECURE HARDWARE AND TRUSTED ELECTRONICS	ECE	MCC	0	0	2	1	NIL
5	34725J82	BIOELECTRONICS AND NEUROENGINEERING SYSTEMS	ECE	MCC	0	0	2	1	NIL
Skill Development Courses									
Credits – (2)									
S.NO	CODE	COURSE	OFFERING DEPT.	CATEGORY	L	T	P	C	PREREQUISITE
1.	34725S83	RAPID PROTOTYPING AND PRODUCT DESIGN	ECE	SDC	0	0	2	1	NIL
2.	34725S81	HARDWARE-IN-THE-LOOP (HIL) SIMULATION AND TESTING	ECE	SDC	0	0	2	1	NIL
3.	34725S82	HUMAN-MACHINE INTERFACE (HMI) AND ASSISTIVE ELECTRONICS	ECE	SDC	0	0	2	1	NIL
4	34725S85	ELECTRONICS FOR SUSTAINABLE AND SMART AGRICULTURE	ECE	SDC	0	0	2	1	NIL
5	34725S84	DIGITAL FABRICATION AND WEARABLE CIRCUITRY	ECE	SDC	0	0	2	1	NIL