EAST POINT COLLEGE OF ENGINEERING & TECHNOLOGY

An Autonomous Institution Affiliated to Visvesvaraya Technological University (VTU) Belagavi Approved by All India Council for Technical Education (AICTE), New Delhi,Recognized by Govt. of Karnataka, UG Programs Accredited by National Board of Accreditation (NBA) : CSE, ECE & ISE

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DEPARTMENT OF ELECTRONICS & COMMUNICATION ENGINEERING

CURRICULUM

Batch 2024 – 2028 (Autonomous)

Undergraduate Bachelor of Engineering Program- B.E.

Outcome Based Education (OBE) &

Choice Based Credit System (CBCS)

III AND IV SEM

2025-26

About the Institute

East Point College of Engineering and Technology (EPCET) was established in the year 1999 by M. G. Charitable Trust, Bangalore. The College is located in the eastern part of Bangalore at Bidarahalli, Virgonagar Post, off old Madras Road. It is at a 5 km distance from K R Puram, Bangalore. The College is affiliated to Visvesvaraya Technological University (VTU), Belagavi.

The college was granted autonomous status in the year 2024 as per the guidelines of the University Grants Commission (UGC). The college was accredited with NAAC A grade in the year 2024, recognizing its commitment to quality education and institutional excellence. All the Undergraduate B.E. and Post Graduate programs M. Tech offered at EPCET have the approval of AICTE. The College at present offers programs in Computer Science & Engineering, CSE (Artificial Intelligence and Machine Learning), CSE (Data Science), CSE (IOT&CSBT), Information Science & Engineering, Electronics & Communication Engineering, and Civil Engineering leading to BE degree of VTU. The college is also offering two M. Tech programs- one each in Mechanical Engineering and Civil Engineering. At EPCET, more than 2500 students are studying in various programs, and there are more than 145 faculty members with about 25% of them having Ph.D. Qualifications. Faculty members, in addition to teaching and routine administrative work, undertake research. Several faculty members collaborate with prestigious national laboratories such as LRDE-DRDO and publish their research findings in refereed, peer-reviewed journals. The eligible programs were accredited by NBA during 2008-2011 and 2023-2026.

All the students of the final year undergo internships in reputed industries and more than 80% of the students get placement offer on campus in companies like VMware, Cognizant, Infosys, Accenture, IBM, Covance, and so on. The departments offer various competency and skill development courses to prepare the students for the job market. In addition to this Institute has a unit “Industry Institute Integrated Learning Program (IILP)” with CISCO, AWS, Salesforce, Google Cloud, ARM, UiPath, Microsoft and Texas Instruments. These courses are conducted and students are encouraged and supported to obtain certification. A significant number of Alumni have assumed important positions in industry and government. A few alumni have set up their own start-ups in and around Bangalore and a considerable number have settled down overseas. The Institute has sufficient number of classrooms, Tutorial rooms, seminar halls, well-equipped laboratories, and a library with more than 50000 books. The campus is completely Wi-Fi enabled. In the laboratories, industry-standard software is made available for students to learn and practice

The college encourage faculty members to attend seminars, conferences organized by other Colleges and industries. Also, faculty have been given the freedom to organize seminars, conferences, and faculty development programs annually. Every year at least 5-6 seminars/ conferences/ FDP are conducted. Seminar halls are available within the college for organizing Student Development programmes and conferences. The College has entered into MoU with a number of industries and foreign Universities.

The campus has Medical College, a Superspecialist hospital with over 1200 beds, Pharmacy college, Two Nursing Institutes, a Higher Education Institute and a PU Institute. Students have opportunities to interact with students of medical, pharmacy nursing, management, commerce, and Science. Students have transport, hostel and sports facilities. There are more than 15 students’ clubs for students to participate in various activities and experience. The College has set an ambitious vision and it is working continuously to adapt newer concepts in teaching, learning, and student assessments to realize its vision through working on its mission. The College aims to increase the students’ satisfaction level with a holistic approach to education.

About the Department

The Department of Electronics and Communication Engineering at East Point College of Engineering and Technology (EPCET), was established in 1999 and the Institute is affiliated with VTU, Belagavi. Department offers a four-year B.E. program with 120 student in-take. Its mission is to provide quality technical education to aspiring students encompasses a broad spectrum of technical areas including Communication systems, VLSI, Embedded Systems, IoT, Signal processing, etc. The department also boasts a VTU-recognized research center, well-equipped labs, and a dedicated faculty involved in research and teaching. The department has received funding from various private and government sectors like LRDE-DRDO, VGST, KSCST. Graduates have secured admissions to prestigious universities and excelled in leading IT companies

About the program

Year of Establishment	1999-2000
Name of the Program offered	BE- Electronics & Communication Engineering
Intake	180

Institute Vision and Mission

Vision

The East Point College of Engineering and Technology aspires to be a globally acclaimed institution, recognized for excellence in engineering education, applied research, and nurturing students for holistic development.

Mission

M1: To create Engineering graduates through quality education and to nurture innovation, creativity and excellence in teaching, learning and research.

M2: To serve the technical, scientific, economic and societal developmental needs of our communities.

M3: To induce integrity, teamwork, critical thinking, personality development, and ethics in students and to lay the foundation for lifelong learning.

Department Vision and Mission

Vision

The Department aspires to be a centre of excellence in Electronics and Communication Engineering to develop competent and ethical professionals through holistic development.

Mission

M1: To impart quality education and provide a conducive environment for innovation and Research.

M2: To develop skills to meet the scientific, technological and socio-economic needs.

M3: To inculcate professional ethics, team work, leadership qualities and lifelong learning.

Program Educational Objectives (PEOs):

PEO 1: Graduates will have successful Professional career with the acquired knowledge in Electronics and Communication Engineering to analyse, design, develop and implement electronic systems.

PEO 2: Graduates will apply their Engineering skills to develop ingenious solutions for real world problems**.**

PEO 3: Graduates will exhibit leadership qualities, ethical values and adapt to current trends by engaging in lifelong learning.

Program Specific Outcomes (PSOs):

PSO 1: To conceptualise, model, design, simulate, analyse, develop, test Electronics and Communication systems and solve technical problems arising in the field of Electronics and Communication Engineering.

PSO 2: To specialize in the areas of Electronics and Communication Engineering such as Analog and Digital Electronics, Communication, Signal processing, VLSI systems, Embedded Systems and IOT.

PSO 3: To demonstrate building and testing of Electronics and Communication systems and evaluate their performance and efficiency using appropriate tools and techniques.

Total Courses

Sl. No	Category	No. of Courses	No. of Credits
1	Humanity and Social Science and management Course (HSMC)	4	6
2	Programming Language Courses (PLC)/Emerging Technology Courses (ETC)	2	6
3	Basic Science Courses (BSC)/-Applied Science Course (ASC)	5	20
4	Integrated Professional Core Course (IPCC)	5	20
5	Professional Core Course (PCC)	9	31
6	Professional Elective Course (PEC)	4	16
7	Open Elective Course (OEC)	2	7
8	Professional Core Course laboratory (PCCL)	5	5
9	Engineering Science Course (ESC)	6	18
10	Ability Enhancement Course (AEC)/ Skill Enhancement Course (SEC)/ Skill Development Course (SDC)/Universal Human Value Course (UHV)	7	10
11	Internship (INT)	1	5
12	Project (PROJ)	3	16
13	Mandatory Course (Non-credit) - NCMC	2	-
Total		55	160

Credit distribution

Sl. No	Category	Credits Per Semester								Total Credits	Credits in %
		I	II	III	IV	V	VI	VII	VIII		
1	HSMC	1	2			3				6	4%
2	PLC/ETC	3	3							6	4%
3	BSC/ASC	8	8	4						20	13%
4	IPCC			4	4	4	4	4		20	13%
5	PCC			7	9	4	3	8		31	19%
6	PEC					4	8	4		16	10%
7	OEC						3	4		7	4%
8	PCCL			1	1	1	1	1		5	3%
9	ESC	6	6	3	3					18	11%
10	AEC/ SEC/ SDC/ TS/UHV	2	1	1	3	3				10	6%
11	INT								5	5	3%
12	PROJ						2	2	12	16	10%
Total		20	20	20	20	19	21	23	17	160	100%

SDA-Skill Development Activities, TD/PSB- Teaching Department / Paper Setting Board, L: Lecture, T: Tutorial, P: Practical, CIE: Continuous Internal Evaluation, SEE: Semester End Examination,

HSMC-Humanity and Social Science and Management Course, ASC-Applied Science Course, PLC-Programming Language Course, ETC-Emerging Technology Course, BSC– Basic Science Course, IC – Integrated Course (Theory Course Integrated with Practical Course), PCC- Professional Core Course, PEC– Professional Elective Course, OEC– Open Elective Course, PCCL- Professional Core Course laboratory, ESC- Engineering Science Course, AEC- Ability Enhancement Course, SEC- Skill Enhancement Course, SDC- Skill Development Course, TS– Technical Seminar, INT– Research / Industrial Internship, PROJ– Project Work, MC- Mandatory Course (Non-credit), UHV- Universal Human Value

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III Semester

BE in Electronics and Communication Engineering

Scheme of Teaching III Semester

Outcome Based Education and Choice Based Credit System (CBCS)

Effective from the academic year Batch - 2024-2028

Sl. No	Course	Course Code	Course Title	Teaching Department (TD)/ Board	Teaching Hours /Week			Examination			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	BSC	24EC31	Engineering Mathematics - III	Maths	3	2	0	50	50	100	04
2	PCC	24EC32	Network Analysis	ECE	4	0	0	50	50	100	04
3	PCC	24EC33	Electronic Principles and Circuits	ECE	3	0	0	50	50	100	03
4	IPCC	24EC34	Digital System Design using Verilog	ECE	3	0	2	50	50	100	04
5	PCCL	24ECL35	Analog and Digital Electronics Lab	ECE	0	0	2	50	50	100	01
6	ESC/PLC	24EC36X	ESC / PLC	ECE	3	0	0	50	50	100	03
7	AEC	24EC37X	Ability Enhancement Course - III	ECE	0	0	2	50	50	100	01
8	MC	24NS38/ 24PE38/ 24YO38	NSS/ PE/ YOGA	NSS/YOGA/ PE coordinator	0	0	2	100	-	100	-
Total								**450**	**350**	**800**	**20**

NOTE: Minimum of 1 subject should have a tutorial component.

Engineering Science Courses

24EC36A	Applied numerical methods for EC
24EC36B	Computer organization and architecture
24EC36C	Electronic devices
24EC36D	Sensors and instrumentation

Ability Enhancement Courses

24EC37A	LABVIEW Programming
24EC37B	Embedded C basics
24EC37C	PCB Design
24EC37D	MATLAB Programming

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IV Semester

BE in Electronics and Communication Engineering

Scheme of Teaching IV Semester

Outcome Based Education and Choice Based Credit System (CBCS)

Effective from the academic year Batch - 2024-2028

Sl. No	Course	Course Code	Course Title	Teaching Department (TD)/ Board	Teaching Hours /Week			Examination			Credits
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	
					L	T	P				
1	PCC	24EC41	Principles of Communication Systems	ECE	3	0	0	50	50	100	03
2	PCC	24EC42	Basic Signal Processing	ECE	3	0	0	50	50	100	03
3	PCC	24EC43	Electromagnetic Theory	ECE	3	0	0	50	50	100	03
4	IPCC	24EC44	Control Systems	ECE	3	0	2	50	50	100	04
5	PCCL	24ECL45	Analog Communication Lab	ECE	0	0	2	50	50	100	01
6	BSC/ ESC	24EC46X	BSC / ESC	ECE	2	2	0	50	50	100	03
7	AEC	24EC47X	Ability Enhancement Course - IV	ECE	0	0	2	100	-		01
8	UHV	24UH48	Universal Human Values	Any dept	2	0	0	50	50	100	02
9	MC	24NS49/ 24PE49/ 24YO49	NSS/PE/YOGA	NSS/YOGA/ PE coordinator	0	0	2	100	-	100	-
Total								**500**	**400**	**900**	**20**

NOTE: Minimum of 1 subject should have a tutorial component.

Basic Science/Engineering Science /Programming Language Courses

24EC46A	Operating systems
24EC46B	Industrial IOT
24EC46C	Microcontrollers
24EC46D	Data structures using C

Ability Enhancement Courses

24EC47A	Octave/scilab for signals
24EC47B	Microcontrollers lab
24EC47C	Basics of IOT and its applications
24EC47D	System Verilog

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V Semester

BE in Electronics and Communication Engineering

Scheme of Teaching V Semester

Outcome Based Education and Choice Based Credit System (CBCS)

Effective from the academic year Batch - 2024-2028

Sl. No	Course	Course Code	Course Title	Teaching Department (TD)/ Board	Teaching Hours /Week			Examination			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	HSMC	24EC51	Management and Entrepreneurship Course	ECE	3	0	0	50	50	100	03
2	PCC	24EC52	Digital Communication	ECE	4	0	0	50	50	100	04
3	IPCC	24EC53	Digital Signal Processing	ECE	3	0	2	50	50	100	04
4	PCCL	24ECL54	Digital Communication Lab	ECE	0	0	2	50	50	100	01
5	PEC	24EC55X	Professional Elective Course-1	ECE	4	0	0	50	50	100	04
6	AEC	24RM56	Research Methodology & IPR .	ECE	2	2	0	50	50	100	03
7	NCMC	24ES57	Environmental Studies and E-waste Management*	ECE	1	0	0	50	50	100	-
8	MC	24NS58/ 24PE58/ 24YO58	NSS/PE/YOGA	NSS/ YOGA/ PE coordinator	0	0	2	100	-	100	-
Total								**450**	**350**	**800**	**19**

NOTE: Minimum of 1 subject should have a tutorial component

Professional elective course-1

24EC55A	FPGA using Verilog
24EC55B	Digital Image Processing
24EC55C	ARM Microcontroller
24EC55D	Satellite Communication

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VI Semester

BE in Electronics and Communication Engineering

Scheme of Teaching VI Semester

Outcome Based Education and Choice Based Credit System (CBCS)

Effective from the academic year Batch - 2024-2028

Sl. No	Course	Course Code	Course Title	Teaching Department (TD)/ Board	Teaching Hours /Week			Examination			Credits
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	
					L	T	P				
1	PCC	24EC61	Advanced Embedded system	ECE	3	0	0	50	50	100	03
2	IPCC	24EC62	Microwave Theory and Antennas	ECE	3	0	2	50	50	100	04
3	PCCL	24ECL63	Advanced Embedded System Lab	ECE	0	0	2	50	50	100	01
4	PEC	24EC64X	Professional Elective Course-2	ECE	3	2	0	50	50	100	04
5	PEC	24EC65X	Professional Elective Course-3	ECE	4	0	0	50	50	100	04
6	OEC	24XX66X	Open Elective -1	ECE	3	0	0	50	50	100	03
7	PROJ	24ECP67	Mini Project	ECE	0	0	4	100	-	100	02
8	MC	24NS68/ 24PE68/ 24YO68	NSS/PE/YOGA	NSS/YOGA/ PE coordinator	0	0	2	100	-	100	-
Total								**500**	**300**	**800**	**21**

Professional elective course -2

24EC64A	Functional Verification using System Verilog
24EC64B	Speech and Audio Processing
24EC64C	Advanced Embedded Systems
24EC64D	IoT Communication Protocols

Professional elective course-3

24EC65A	Analog and Digital VLSI
24EC65B	Biomedical Signal Processing
24EC65C	Real Time Opera ting System
24EC65D	Optical Communication Networks

Open elective course-1

24EC66A	Basic Signal Processing
24EC66B	Embedded System Design
24EC66C	Fiber Optics and Optoelectronics
24EC66D	Sensors and Instrumentation

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VII Semester

BE in Electronics and Communication Engineering

Scheme of Teaching VII Semester

Outcome Based Education and Choice Based Credit System (CBCS)

Effective from the academic year Batch - 2024-2028

Sl. No	Course	Course Code	Course Title	Teaching Department (TD)/ Board	Teaching Hours /Week			Examination			Credits
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	
					L	T	P				
1	PCC	24EC71	Wireless and Cellular Communication	ECE	3	2	0	50	50	100	04
2	PCC	24EC72	VLSI Design and Testing	ECE	4	0	0	50	50	100	04
3	IPCC	24EC73	Computer Networks	ECE	3	0	2	50	50	100	04
4	PCCL	24ECL74	VLSI Design and Testing Lab	ECE	0	0	2	50	50	100	01
5	PEC	24EC75X	Professional Elective Course-4	ECE	3	0	0	50	50	100	04
6	OEC	24XX76X	Open Elective -2	ECE	3	0	0	50	50	100	04
7	PROJ	24ECP77	Project Work Phase-1	ECE	0	0	4	100	-	100	02
Total								**400**	**300**	**700**	**23**

Professional elective course -4

24EC75A	ASIC Design
24EC75B	Pattern Recognition
24EC75C	Advanced Networking Using IoT
24EC75D	Wireless LTE 5G& beyond

Open elective course-2

24EC76A	Computer Networks
24EC76B	ARM Microcontroller
24EC76C	Satellite Remote Sensing & GIS
24EC76D	Machine Learning using Python

VIII Semester

BE in ECE

Scheme of Teaching VIII Semester

Outcome Based Education and Choice Based Credit System (CBCS)

Effective from the academic year Batch - 2024-2028

Sl. No	Course	Course Code	Course Title	Teaching Department (TD)/ Board	Teaching Hours /Week			Examination			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credit
					L	T	P				
1	INT	24INT81	Research / Industrial Internship	ECE	0	0	10	100	100	200	5
2	PROJ	24ECP82	Project Work Phase - II	ECE	0	0	24	100	100	200	12
Total								**200**	**200**	**400**	17

Guidelines of CIE & SEE:

IPCC:

Continuous Internal Evaluation (CIE): 50		
Assessment Tools	**Marks**	**Course Outcome addressed**
Internal Test - 1 (CIE - I)	15	CO1, CO2, CO3
Internal Test - 2 (CIE - II)	15	CO3, CO4, CO5
Average of the two CIE will be taken for 15 marks		
Assignment/ Seminar/ Project/ Code Tandra/ Quiz/ Online Certification	10	CO1, CO2, CO3, CO4, CO5
Integrated practical Lab session (Daily Assessment +Record + 2 Lab Test)	25 (10+5+10)	CO1, CO2, CO3, CO4, CO5
The Final CIE out of 50 Marks = Average of two CIE tests for 15 Marks + Marks scored in Assignment/ Seminar/ Project/ Code Tandra / Quiz/Online Certification for 10 + Lab assessment for 25		
Semester End Examination (SEE)	100	CO1, CO2, CO3, CO4, CO5

PCC:

Continuous Internal Evaluation (CIE): 50		
Assessment Tools	**Marks**	**Course Outcome addressed**
Internal Test - 1 (CIE - I)	25	CO1, CO2, CO3
Internal Test - 2 (CIE - II)	25	CO3, CO4, CO5
Average of the two CIE will be taken for 25 marks		
Assignment/ Seminar/ Project/ Code Tandra/ Quiz/ Online Certification	25	CO1, CO2, CO3, CO4, CO5
The Final CIE out of 50 Marks = Adding of two CIE tests for 25 Marks + Marks scored in Assignment/ Seminar/ Project/ Code Tantra / Quiz/ Online Certification for 25		
Semester End Examination (SEE)	100	CO1, CO2, CO3, CO4, CO5