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)**

# V AND VI 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 | | | | | 8 | 4 | 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 | 20 | 20 | 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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**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 | 3 | 2 | 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 | PEC | 24EC56X | Professional Elective Course-2 | ECE | 4 | 0 | 0 | 50 | 50 | 100 | 04 |
| 7 | NCMC | 24ES57 | Environmental Studies and E-waste Management* | CV | 1 | 0 | 0 | 100 | - | 100 | - |
| 8 | NCMC | 24NS58/ 24PE58/ 24YO58 | NSS/PE/YOGA | NSS/ YOGA/ PE coordinator | 0 | 0 | 2 | 100 | - | 100 | - |
| **Total** | | | | | | | | **500** | **300** | **800** | **20** |

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

**Professional Elective Course-1**

| Course Code | Course Title |
|---|---|
| 24EC55A | FPGA System Design using Verilog |
| 24EC55B | Intelligent Systems and Machine Learning Algorithms |
| 24EC55C | Embedded Programming |
| 24EC55D | Satellite and Optical Communication |

**Professional Elective Course -2**

| Course Code | Course Title |
|---|---|
| 24EC56A | Functional Verification using System Verilog |
| 24EC56B | Digital Image Processing |
| 24EC56C | IoT Communication Protocols |
| 24EC56D | Radar Systems |

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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 | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | Theory | Tutorial | Practical | CIE Marks | SEE Marks | Total Marks | Credits |
| | | | | | L | T | P | | | | |
| 1 | PCC | 24EC61 | VLSI Design and Testing | ECE | 3 | 0 | 0 | 50 | 50 | 100 | 03 |
| 2 | IPCC | 24EC62 | Embedded system Design | ECE | 3 | 0 | 2 | 50 | 50 | 100 | 04 |
| 3 | PCCL | 24ECL63 | VLSI Design and Testing Lab | ECE | 0 | 0 | 2 | 50 | 50 | 100 | 01 |
| 4 | PEC | 24EC64X | Professional Elective Course-3 | ECE | 4 | 0 | 0 | 50 | 50 | 100 | 04 |
| 5 | AEC | 24RM65 | Research Methodology & IPR | ECE | 3 | 0 | 0 | 50 | 50 | 100 | 03 |
| 6 | OEC | 24XX66X | Open Elective -1 | ECE | 3 | 0 | 0 | 50 | 50 | 100 | 03 |
| 7 | PROJ | 24ECP67 | Mini Project | ECE | 0 | 0 | 2 | 100 | - | 100 | 02 |
| 8 | NCMC | 24NS68/ 24PE68/ 24YO68 | NSS/PE/YOGA | NSS/ YOGA/ PE coordinator | 0 | 0 | 0 | 100 | - | 100 | - |
| 9 | NCMC | 24IKS69 | IKS | | 1 | 0 | 0 | 100 | - | 100 | - |
| **Total** | | | | | | | | **600** | **300** | **900** | **20** |

**Professional Elective Course-3**

| Course Code | Course Title |
|---|---|
| 24EC64A | VLSI Physical Design |
| 24EC64B | Biomedical Signal Processing |
| 24EC64C | Real Time Operating Systems |
| 24EC64D | Optical Communication Networks |

**Open Elective Course-1**

| Course Code | Course Title |
|---|---|
| 24EC66A | Basic VLSI Design |
| 24EC66B | Electronics Communication Systems |
| 24EC66C | Digital System Design using Verilog |
| 24EC66D | Sensors and Instrumentation |