

CURRICULUM

Academic Batch 2024 – 2028 (Autonomous)

Undergraduate Bachelor of Engineering Program- B.E

Outcome Based Education (OBE)



III TO VIII SEM

DEPARTMENT OF INFORMATION SCIENCE & ENGINEERING

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

2024-2028

About the Institution

East Point College of Engineering and Technology (EPCET), established in 1999 by the M.G. Charitable Trust, is a premier engineering institution located in the eastern corridor of Bangalore at Bidarahalli, Virgonagar Post, just 5 km from K.R. Puram. The college is affiliated with Visvesvaraya Technological University (VTU), Belagavi, and is NAAC accredited with an 'A' Grade. All undergraduate and postgraduate programs are approved by the All India Council for Technical Education (AICTE).

EPCET offers a wide range of undergraduate B.E. programs in:

- Artificial Intelligence and Data Science
- Computer Science and Engineering
- Information Science and Engineering
- Electronics and Communication Engineering
- Mechanical Engineering
- Artificial Intelligence and Machine Learning
- Civil Engineering
- CSE (IoT, Cyber Security including Blockchain Technology)

The college also offers postgraduate M.Tech programs in Mechanical and Civil Engineering. With a current student strength of over 2,500 and a faculty team of more than 145 members (25% of whom hold Ph.D. qualifications), the institution places a strong emphasis on academic excellence, research, and innovation. Several faculty members collaborate with reputed national research organizations such as LRDE-DRDO, contributing to peer-reviewed publications.

Three departments—Computer Science and Engineering (CSE), Electronics and Communication Engineering (ECE), and Information Science and Engineering (ISE)—have been NBA accredited for the periods 2008–2011 and 2023–2026.

EPCET maintains a strong placement record, with over 80% of eligible students receiving on-campus job offers from leading companies such as VMware, Cognizant, Infosys, Accenture, IBM, and Covance. Students benefit from industry-integrated training through the Industry-Institute Integrated Learning Program (IILP) in collaboration with technology leaders including CISCO, AWS, Salesforce, Google Cloud, ARM, UiPath, Microsoft, and Texas Instruments. These programs enable students to acquire industry-recognized certifications.

The campus features modern infrastructure including spacious classrooms, tutorial rooms, seminar halls, well-equipped laboratories, and a library housing over 50,000 volumes. The campus is fully Wi-Fi enabled and provides students access to industry-standard software tools. EPCET also encourages faculty to participate in and organize academic seminars, conferences, and Faculty Development Programs (FDPs), hosting at least 5–6 such events annually.

EPCET is part of a larger academic ecosystem that includes a Medical College, an 800-bed Superspeciality Hospital, a Pharmacy College, two Nursing Institutes, a Higher Education Institute, and a Pre-University College. This offers engineering students unique interdisciplinary learning opportunities and exposure to diverse academic fields. The college supports a vibrant campus life with transportation, hostel facilities, sports infrastructure, and over 15 student-led clubs for extracurricular engagement.

Driven by a vision for academic excellence and holistic education, EPCET continually adapts to new teaching methodologies, student assessment models, and innovations in learning to enhance student satisfaction and prepare graduates for global careers.

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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.

About the department

Department of Information Science and Engineering, affiliated to Visveswaraya Technological University (VTU), Belagavi, approved by AICTE and accredited with NBA Certification is functioning since 2001. The department offers BE program in Information Science and Engineering with an intake of 180 students from the academic year 2023-24. The program imparts basic and advanced knowledge in Information Science and Engineering, technical competencies and necessary IT skills and prepares the students for the development of information science-based solutions for the real-world paradigms. The department provides opportunities to students to exhibit talents, leadership qualities through the departmental forum and student chapters. The department organizes International and national conferences, Seminars, Student Symposia, youth festivals, short-time training programs, and value-added courses. This provides a wide range of opportunities for students and faculty members to bring out their potential and innovative skills in various fields.

About the program

Year of Establishment	2001-2002
Name of the Program offered	BE- Information Science and Engineering
Intake	180

Department Vision and Mission

Vision

The Department aspires to be center of excellence for engineering education in the field of Information Science and Engineering, fosters academic and career success for holistic development.

Mission

M1: To create graduates in Information Science and Engineering by nurturing innovation, creativity and excellence in Teaching, Learning and Research.

M2: To develop and disseminate technical skills to address current and future industrial needs.

M3: To encourage team work, critical thinking, personality development and ethics in students to lay the foundation for lifelong learning.

Program Educational Objectives (PEOs)

PEO1: To produce graduates who have the knowledge of science and engineering concepts for a computer professional to perform technical roles in the software industry.

PEO2: To produce graduates who formulate, analyze and provide innovative solutions to real world problems in Information Science and Engineering by adapting to new trends in the domain to carve a successful career in the industry.

PEO3: To produce graduates who exhibit leadership capability and be a supportive member serving the society in every possible way to build some innovative ideas for solving problems by applying research methodologies.

Program Specific Outcome (PSO)

PSO1: To collect data, validate the data, design and develop software models, convert the model into a working solution using appropriate algorithms and programming language.

PSO2: To expertise in the sub domains of Information Science and Engineering such as file structures, data mining, big data analytics, cloud computing, robotic process automation to reach industry needs.

PSO3: Ability to develop practical competency in programming languages and open source platforms.

Program Outcomes as defined by NBA (PO) Engineering Graduates will be able to:

PO1: Engineering Knowledge: Apply knowledge of mathematics, natural science, computing, engineering fundamentals and an engineering specialization as specified in WK1 to WK4 respectively to develop to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature and analyze complex engineering problems reaching substantiated conclusion with consideration for sustainable development. (WK1 to WK4)

PO3: Design/Development of Solutions: Design creative solutions for complex engineering problems and design/develop systems/components/processes to meet identified needs with consideration for the public health and safety, whole-life cost, net zero carbon, culture, society and environment as required. (WK5)

PO4: Conduct Investigations of Complex Problems: Conduct investigations of complex engineering problems using research-based knowledge including design of experiments, modelling, analysis & interpretation of data to provide valid conclusions. (WK8).

PO5: Engineering Tool Usage: Create, select and apply appropriate techniques, resources and modern engineering & IT tools, including prediction and modelling recognizing their limitations to solve complex engineering problems. (WK2 and WK6)

PO6: The Engineer and The World: Analyze and evaluate societal and environmental aspects while solving complex engineering problems for its impact on sustainability with reference to economy, health, safety, legal framework, culture and environment. (WK1, WK5, and WK7).

PO7: Ethics: Apply ethical principles and commit to professional ethics, human values, diversity and inclusion; adhere to national & international laws. (WK9)

PO8: Individual and Collaborative Team work: Function effectively as an individual, and as a member or leader in diverse/multi-disciplinary teams.

PO9: Communication: Communicate effectively and inclusively within the engineering community and society at large, such as being able to comprehend and write effective reports and design documentation, make effective presentations considering cultural, language, and learning differences

PO10: Project Management and Finance: Apply knowledge and understanding of engineering management principles and economic decision-making and apply these to one's own work, as a member and leader in a team, and to manage projects and in multidisciplinary environments.

PO11: Life-Long Learning: Recognize the need for, and have the preparation and ability for i) independent and life-long learning ii) adaptability to new and emerging technologies and iii) critical thinking in the broadest context of technological change. (WK8)

East Point College of Engineering and Technology

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	3	-
Total		56	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, ASC-Applied Science Course, ESC- Engineering Science Courses, ETC- 29052023/V10 scheme for Computer Science and Engineering and allied branches (CSE/ISE and BT all allied branches of CSE) 2 Emerging Technology Course, AEC- Ability Enhancement Course, HSMS-Humanity and Social Science and management Course, SDC- Skill Development Course, CIE–Continuous Internal Evaluation, SEE- Semester End Examination, IC – Integrated Course (Theory Course Integrated with Practical Course)

PCC Value Course, MC: Mandatory Course (Non-credit), AEC: Ability Enhancement Course, SEC: Skill Enhancement Course, L: Lecture, T: Tutorial, P: Practical. ESC: Engineering Science Course, ETC: Emerging Technology Course, PLC: Programming Language Course, MC Mandatory Course, PCC: Professional Core Course, PCCL: Professional Core Course laboratory, UHV: Universal Human

III Semester

BE in Information Science & Engineering Scheme of Teaching III Semester Outcome Based Education and Choice Based Credit System (CBCS) Effective from the academic year Batch - 2024-28											
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	BSC	24IS31	Mathematics III for CSE	Mathematics	3	2	0	50	50	100	4
2	PCC	24IS32	Operating System	ISE	4	0	0	50	50	100	4
3	PCC	24IS33	Data Structures and Applications	ISE	3	0	0	50	50	100	3
4	IPCC	24IS34	Digital Design & Computer Organization	ISE	3	0	2	50	50	100	4
5	PCCL	24ISL35	Data Structure & Applications lab	ISE	0	0	2	50	50	100	1
6	ESC	24IS36X	ESC/ETC/ PLC	ISE	2	0	2	50	50	100	3
7	AEC	24ISL37X	Ability Enhancement Course - III	ISE dept/ IT Industry	0	0	2	50	50	100	1
8	MC	24NS38/ 24PE38/ 24YO38	NSS/ PE/ YOGA	NSS/YOGA/ PE Coordinator	0	0	2	100	-	100	-
Total								450	350	800	20

Engineering Science Course (ESC/ETC/PLC)– III

24IS36A	Object Oriented Programming with Java
24IS36B	Object Oriented Programming with C++

Ability Enhancement Course – III

24ISL37A	Data Analytics using Excel	24ISL37C	Prompt Engineering
24ISL37B	R programming	24ISL37D	Introduction to Web Programming

IV Semester

BE in Information Science & Engineering Scheme of Teaching IV Semester Outcome Based Education and Choice Based Credit System (CBCS) Effective from the academic year Batch - 2024-28											
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	24IS41	Analysis and Design of Algorithms	ISE	3	0	0	50	50	100	3
2	PCC	24IS42	Data Base Management System	ISE	3	0	0	50	50	100	3
3	PCC	24IS43	Software Engineering	ISE	3	0	0	50	50	100	3
4	IPCC	24IS44	Fundamentals of Cloud Computing	ISE	3	0	2	50	50	100	4
5	PCCL	24ISL45	Analysis and Design of Algorithms Lab	ISE	0	0	2	50	50	100	1
6	ESC	24IS46X	BSC/ESC	Mathematics	2	2	0	50	50	100	3
7	AEC	24ISL47X	Ability Enhancement Course-IV	ISE dept/ IT Industry	0	0	2	50	50	100	1
8	UHV	24UH48	Universal Human Values	Any dept	2	0	0	50	50	100	2
9	MC	24NS49/ 24PE49/ 24YO49	NSS/YOGA/ PE	NSS/ YOGA/ PE Coordinator	0	0	2	100	-	100	-
Total								500	400	900	20

BSC/Engineering Science Course (ESC/ETC/PLC)– IV

24IS46A	Linear Algebra	24IS46C	Graph Theory
24IS46B	Discrete Mathematics structures		

Ability Enhancement Course / Skill Enhancement Course - IV

24ISL47A	UI/UX Design Tool(Figma)	24ISL47C	Technical writing using LATEX
24ISL47B	DBMS with SQL and MongoDB	24ISL47D	Mobile Application Development Lab

V Semester

BE in Information Science & Engineering											
Scheme of Teaching V Semester											
Outcome Based Education and Choice Based Credit System (CBCS)											
Effective from the academic year Batch - 2024-28											
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	24IS51	Software Quality and Project Management	ISE	3	0	0	50	50	100	3
2	PCC	24IS52	Theory of Computation	ISE	3	2	0	50	50	100	4
3	IPCC	24IS53	Computer Networks	ISE	3	0	2	50	50	100	4
4	PCCL	24ISL54	Data Analytics with Power BI and Tableau Lab	ISE	0	0	2	50	50	100	1
5	PEC	24IS55X	Program Elective Course-1	ISE	3	0	2	50	50	100	4
6	PEC	24IS56X	Program Elective Course-2	ISE	3	0	2	50	50	100	4
7	NCMC	24ES57	Environmental Studies and E-Waste Management	CV	1	0	0	100	-	100	-
8	NCMC	24NS58/ 24PE58/ 24YO58	NSS/YOGA/ PE	NSS/ YOGA/ PE Coordinator	0	0	2	100	-	100	-
Total								500	300	800	20

Program Elective Course-1					
24IS55A	MongoDB	24IS55C	Computer Vision	24IS55E	Data Warehousing And Data Mining
24IS55B	Fundamentals of Data Science	24IS55D	Cryptography Network Security And Cyber Laws		

Program Elective Course-2			
24IS56A	Business Intelligence	24IS56C	Natural Language Processing
24IS56B	Data Analytics with R	24IS56D	Quantum Algorithms and Cryptography

VI Semester

BE in Information Science & Engineering											
Scheme of Teaching VI Semester											
Outcome Based Education and Choice Based Credit System (CBCS)											
Effective from the academic year Batch - 2024-28											
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	24IS61	AI & Machine Learning	ISE	3	0	0	50	50	100	3
2	IPCC	24IS62	Software Testing	ISE	3	0	2	50	50	100	4
3	PCCL	24ISL63	Machine Learning Lab	ISE	0	0	2	50	50	100	1
4	PEC	24IS64X	Program Elective Course- 3	ISE	3	0	2	50	50	100	4
5	AEC	24RM65	Research Methodology and IPR	ISE	3	0	0	50	50	100	3
6	OEC	24XX66X	Open-Elective -1	Concerned Dept	3	0	0	50	50	100	3
7	PROJ	24IS67	Mini Project	ISE	0	0	4	100	-	100	2
8	NCMC	24NS68/ 24PE68/ 24YO68	NSS/YOGA/ PE	NSS/ YOGA/ PE Coordinator	0	0	2	100	-	100	-
9	NCMC	24IKS69	Indian Knowledge System	ISE	1	0	0	100	-	100	-
Total								600	300	900	20

Program Elective Course-3			
24IS64A	Integrated Full Stack Application Development	24IS64C	Generative AI
24IS64B	Big Data Analytics	24IS64D	Incident Response and Management

Open Elective Course-1			
24IS66A	Introduction to Data Structures	24IS66C	Introduction to Artificial Intelligence
24IS66B	Fundamentals of Operating Systems	24IS66D	Mobile Application Development

VII Semester

BE in Information Science & Engineering Scheme of Teaching VI Semester Outcome Based Education and Choice Based Credit System (CBCS) Effective from the academic year Batch - 2024-28											
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	24IS71	Cryptography & Network Security	ISE	3	2	0	50	50	100	4
2	PCC	24IS72	Internet of Things	ISE	4	0	0	50	50	100	4
3	IPCC	24IS73	High Performance Computing	ISE	3	0	2	50	50	100	4
4	PCCL	24ISL74	TOSCA– Automated Software testing	ISE	0	0	2	50	50	100	1
5	PEC	24IS75X	Program Elective Course -4	ISE	3	0	2	50	50	100	4
6	OEC	24XX76X	Open Elective- 2	Concerned Department	4	0	0	50	50	100	4
7	PROJ	24IS77	Project Work phase -1	ISE	0	0	4	100	-	100	2
Total								400	300	700	23

Professional Elective Course-4

24IS75A	Introduction to DevOps	24IS75C	Cloud Operations
24IS75B	Deep Learning	24IS75D	Blockchain Technology

Open Elective Course-2

24IS76A	Introduction to DBMS	24IS76C	Software Engineering
24IS76B	Introduction to Algorithms		

VIII Semester

BE in Information Science & Engineering											
Scheme of Teaching VIII Semester											
Outcome Based Education and Choice Based Credit System (CBCS)											
Effective from the academic year Batch - 2024-28											
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	INT	24INT81	Research / Industrial Internship	ISE	Two contact hours for interaction between the faculty and students			100	100	200	5
2	PROJ	24ISP82	Project Work Phase - II	ISE	0	0	8	100	100	200	12
Total								200	200	400	17