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
Accredited by NAAC with A Grade
UG programs Accredited by National Board of Accreditation (NBA): CSE, ECE & ISE

DEPARTMENT OF CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

CURRICULUM

Academic Batch 2024 – 2028 (Autonomous)

Undergraduate Bachelor of Engineering Program - B.E.

Outcome Based Education (OBE)

V & VI SEMESTER

2024-2028

About the Institute

East Point College of Engineering and Technology (EPCET) was founded in 1999 under the aegis of M. G. Charitable Trust in Bangalore. The College is located near Bidarahalli, along old Madras Road in Bangalore's eastern suburbs. It is about 7 kilometers from K R Puram, Bangalore.

The college is connected with Visvesvaraya Technological University (VTU) in Belagavi. All of EPCET's undergraduate and postgraduate programs are AICTE-approved. University Grant Commission (UGC) and VTU have conferred Autonomous Status to EPCET from the academic year 2024-25 for 5 years. The institute offers 7 undergraduate and 2 postgraduate programmes. All eligible programmes have been accredited by National Board of Accreditation (NBA), New Delhi and in the year 2025, National Assessment & Accreditation Council (NAAC) accredited EPCET with 'A' grade valid for 5 years. EPCET has around 3000 students enrolled in various programs, as well as around 160 qualified faculty members, approximately 30% of who hold a Ph.D. In addition to teaching and administrative duties, faculty members are involved in the active research & development activities.

All final-year students participate in internships in reputable industries, and more than 70% of students secure a job on campus with reputable companies. A large number of alumni are now in senior positions in industry and government. A few alumni have even started their own businesses in and around Bangalore, while quite a few have relocated abroad. Students actively participate in VTU-organized intercollegiate sports and cultural activities.

The College, which includes a huge number of classrooms, seminar halls, well-equipped laboratories, and a library with over 50,000 books, is totally Wi-Fi enabled. In the laboratories, students can learn and practice with industry-standard software, and the institution has subscribed to a significant number of technical periodicals through a consortium approach.

Because the College is located on a multi-college campus, students can connect with students studying medicine, pharmacy, nursing, management, commerce, and science. Students have access to transit, hostels, and sports facilities. More than 15 student groups provide students with opportunities to participate in a variety of activities and gain experience.

The College has set an ambitious vision, and it is constantly adapting fresh concepts in teaching, learning, and student assessments to achieve its vision by focusing on its mission. The College's holistic approach to education strives to improve student happiness.

About the Department

The Department of CSE (Artificial Intelligence & Machine Learning) was started in 2023 with 60 students and intake was increased to 120 students from the academic year 2025-26. The department comprises a dynamic team of highly qualified faculty, including doctorates and members pursuing Ph.D., with strong expertise in Artificial Intelligence, Machine Learning, Cloud Computing, Cyber Security and Image Processing. The department is committed to providing students with a robust academic foundation in artificial intelligence, machine learning, computer science, programming, and emerging technologies. With well-equipped laboratories and a dedicated team of faculty actively engaged in research and innovative teaching practices, the department strives to nurture technical excellence, critical thinking, and industry readiness among students.

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

To develop competent professionals in the field of Artificial Intelligence and Machine Learning to serve best to the society.

Mission

M1: To achieve academic excellence through innovative teaching-learning practices that will best serve the society.

M2: To nurture successful Computer Science Engineering graduates with a specialization in AI&ML with professional responsibilities and commitment to lifelong learning.

M3: To establish Center of Excellence in areas of Computing, Artificial Intelligence & Machine Learning to inculcate strong ethical values, applied research capabilities.

Program Educational Objectives (PEOs)

PEO 1: To enable students to build Intelligent Machines and applications with a cutting – edge combination of machine learning, analytics and visualization.

PEO 2: To enable technocrats to pursue higher education and research, and have a successful career in industries related to AIML.

PEO 3: To produce graduate professionals with ethics, who will contribute to industrial growth and social transformation as responsible citizens.

Program Specific Outcome (PSO)

PSO 1: Adapt, contribute and innovate new technologies in computing profession by working in teams to design, implement, and maintain in the key domains of Artificial Intelligence & Machine Learning.

PSO 2: Apply the skills in the areas of Health care, Education, Agriculture, Environment, Smart Systems & in the multi-disciplinary area of Artificial Intelligence & Machine Learning.

PSO 3: Develop many successful applications based on Machine Learning methods, AI methods in different fields, including Neural networks, Natural Language Processing, Generative AI and data Analytics.

Program Outcomes (POs)

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 conclusions 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)

Semester wise Credit Breakdown for B.E Degree Curriculum Batch 2024-28

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/ 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%

HSMC - Humanity and Social Science and management Course, PLC - Programming Language Course, ETC - Emerging Technology Course, BSC - Basic Science Course, ASC - Applied Science Course, IPCC – 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, UHV – Universal Human Values, INT – Internship, PROJ – Project, NCMC – Non-credit Mandatory Course

III Semester:

BE in CSE (AIML)
Scheme of Teaching and Examination for III Semester
Outcome Based Education and Choice Based Credit System (CBCS)
Effective from the academic 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	24CI31	Engineering Mathematics III	Maths	3	2	0	50	50	100	04
2	PCC	24CI32	Operating systems	AIML	4	0	0	50	50	100	04
3	PCC	24CI33	Data Structure & Applications	AIML	3	0	0	50	50	100	03
4	IPCC	24CI34	Digital Design & Computer Organization	AIML	3	0	2	50	50	100	04
5	PCCL	24CIL35	Data Structure & Applications Lab	AIML	0	0	2	50	50	100	01
6	ESC / PLC	24CI36X	ESC / PLC	AIML	2	0	2	50	50	100	03
7	AEC	24CI37X	Ability Enhancement Course - III	AIML	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.

ESC/ PLC:

24CI36A	Object Oriented Programming with Java
24CI36B	Object Oriented Programming with C++
24CI36C	Python Programming for Data Science

Ability Enhancement Course - III

24CI37A	Data Visualization
24CI37B	Project Management with Git
24CI37C	Prompt Engineering
24CI37D	Data Analytics with Excel

IV Semester:

BE in CSE (AIML)
Scheme of Teaching and Examination for IV Semester
Outcome Based Education and Choice Based Credit System (CBCS)
Effective from the academic 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	24CI41	Analysis and Design of Algorithms	AIML	3	0	0	50	50	100	03
2	PCC	24CI42	Database Management system	AIML	3	0	0	50	50	100	03
3	PCC	24CI43	Introduction to Artificial Intelligence and Machine Learning	AIML	3	0	0	50	50	100	03
4	IPCC	24CI44	Data Analytics with R	AIML	3	0	2	50	50	100	04
5	PCCL	24CIL45	Analysis and Design of Algorithms Lab	AIML	0	0	2	50	50	100	01
6	BSC / ESC	24CI46X	BSC / ESC	Respective Dept	2	2	0	50	50	100	03
7	AEC	24CI47X	Ability Enhancement Course - IV	AIML	0	0	2	50	50	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/PE /YOGA COORDINATOR	0	0	2	100	-	100	-
Total								**500**	**400**	**900**	**20**

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

BSC / ESC:

24CI46A	Linear Algebra
24CI46B	Discrete Mathematical Structures
24CI46C	Graph Theory

Ability Enhancement Course - IV

24CI47A	UX/UI Design
24CI47B	Technical writing using LaTeX
24CI47C	Scala
24CI47D	DBMS with SQL and MongoDB

V Semester:

BE in CSE (AIML) Scheme of Teaching and Examination for V Semester Outcome Based Education and Choice Based Credit System (CBCS) Effective from the Academic 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	24CI51	Artificial Intelligence Product Management	AIML	3	0	0	50	50	100	03
2	PCC	24CI52	Theory of Computation	AIML	3	2	0	50	50	100	04
3	IPCC	24CI53	Computer Networks	AIML	3	0	2	50	50	100	04
4	PCCL	24CIL54	Machine Learning Lab	AIML	0	0	2	50	50	100	01
5	PEC	24CI55X	Professional Elective Course – 1	AIML	4	0	0	50	50	100	04
6	PEC	24CI56X	Professional Elective Course – 2	AIML	4	0	0	50	50	100	04
7	NCMC	24ES57	Environmental Studies and E-waste Management	Civil Dept	1	0	0	100	-	100	-
8	NCMC	24NS58 / 24PE58 / 24YO58	NSS/PE/ YOGA	NSS/PE /YOGA COORDINATOR	0	0	2	100	-	100	-
Total								**500**	**300**	**800**	**20**

Professional Elective Course - 1:

24CI55A	Advanced Machine Learning
24CI55B	Software Engineering with AI
24CI55C	Cyber Physical Systems
24CI55D	Cloud Computing

Professional Elective Course - 2:

24CI56A	Agentic AI
24CI56B	Quantum Computing
24CI56C	Big Data Systems
24CI56D	Full Stack Development

VI Semester:

BE in CSE (AIML) Scheme of Teaching and Examination for VI Semester Outcome Based Education and Choice Based Credit System (CBCS) Effective from the Academic 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	24CI61	Deep Learning	AIML	3	0	0	50	50	100	03
2	IPCC	24CI62	Natural Language Processing	AIML	3	0	2	50	50	100	04
3	PCCL	24CIL63	DevOps Lab	AIML	0	0	2	50	50	100	01
4	PEC	24CI64X	Professional Elective Course – 3	AIML	3	2	0	50	50	100	04
5	AEC	24RM65	Research Methodology and IPR	AIML	3	0	0	50	50	100	03
6	OEC	24XX66X	Open Elective Course - 1	Respective Dept	3	0	0	50	50	100	03
7	PROJ	24CIP67	Mini Project	AIML	0	0	4	100	-	100	02
8	NCMC	24NS68 / 24PE68 / 24YO68	NSS/PE/ YOGA	NSS/PE /YOGA COORDINATOR	0	0	2	100	-	100	-
9	NCMC	24IKS69	Indian Knowledge System	Respective Dept	1	0	0	100	-	100	-
Total								**600**	**300**	**900**	**20**

Professional Elective Course - 3:

24CI64A	Cryptography and Network Security
24CI64B	Information Retrieval
24CI64C	AI Hardware Architectures
24CI64D	Edge AI

Open Elective Course - 1:

24CI66A	Introduction to Data Structures
24CI66B	Fundamentals of Operating Systems
24CI66C	Mobile Application Development
24CI66D	Introduction to Artificial Intelligence