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

CURRICULUM

Academic Year 2024 – 2028(Autonomous)

Undergraduate Bachelor of Engineering Program- B.E.

Outcome Based Education (OBE)

DEPARTMENT OF CIVIL ENGINEERING

III TO VIII SEM

2024-28

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, Virgo Nagar 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), Belgaum and NAAC accredited with an A grade. 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. A few faculty members work in collaboration with prestigious national laboratories like LRDE- DRDO and publish their research findings in Refereed Peer Reviewed Journals. The programs offered by the college 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 Civil Engineering was established in the year 2009 offering a four-year undergraduate course leading to Bachelor's Degree in Civil Engineering affiliated to Visveswaraya Technological University, Belagavi with an intake of 60 students. The department also offers Master's programme in Construction Technology since 2013, affiliated to VTU. The Department has been recognized as a VTU-Research centre since 2014.

The Department is well equipped with full-fledged laboratories & state of art infrastructure facilities supported by a team of extremely dedicated, well qualified and experienced faculty members. The faculty members are involved in sponsored research and consultancy works

About the program

Year of Establishment	2009
Name of the Program offered	BE- Civil Engineering
Intake	30

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 become an outstanding department by providing quality education through imparting analytical, sustainable, and problem-solving skills in Civil engineering to address industrial and societal requirements.

Mission

M1: Make the student employable or become an entrepreneur with an emphasis on professional ethics and social commitment.

M2: To enhance the student's individual and group performance through projects, Industrial visits, Internships, and software Tools.

M3: To bring in research culture in the Department by active participation with industries and research scholars for technical advancement.

Program Educational Objectives (PEOs)

PEO 1: A Civil engineer who is technically competent and acquired knowledge in civil engineering domain to meet the industry requirement and solve societal problems.

PEO 2: A Civil engineer who is effective communicator, demonstrate leadership, innovation and entrepreneurship skills to find cost effective sustainable solution.

Program Specific Outcome (PSO)

PSO 1: The graduates will have the ability to prepare plan, analyze and able to design cost effective solutions without over exploitation of natural resources.

PSO 2: The graduates of civil engineering program will have the ability to take up employment, entrepreneurship, higher studies, research and development for sustainable civil society through ICT tools and lifelong learning

Program Outcomes (POs)

Engineering Graduates will be able to:

PO1: Engineering Knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.

PO2: Problem Analysis: Identify, formulate, review research literature, and analyse complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.

PO3: Design/Development of Solutions: Design solutions for complex engineering problems and design system components or processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.

PO4: Conduct Investigations of Complex Problems: Use research-based knowledge and research methods including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions.

PO5: Engineering Tool Usage: Create, select, and apply appropriate techniques, resources, and modern engineering and IT tools including prediction and modelling to complex engineering activities with an understanding of the limitations.

PO6: The Engineer and the World: Apply reasoning informed by the contextual knowledge to assess societal, health, safety, legal and cultural issues and the consequent responsibilities relevant to the professional engineering practice.

PO7: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.

PO8: Individual and Collaborative Team Work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PO9: Communication: Communicate effectively on complex engineering activities with the engineering community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PO10: Project Management and Finance: Demonstrate knowledge and understanding of the Engineering and management principles and apply these to one's own work, as a member and leader in a team, to manage projects and in multidisciplinary environments.

PO11: Life -Long Learning: Recognize the need for and have the preparation and ability to engage in independent and life -long learning in the broadest context of technological change.

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							16	10%
4	IPCC			4	4	4	4	4		20	13%
5	PCC			12	9	4	3	8		36	22%
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, ASC-Applied Science Course, ESC- Engineering Science Courses, ETC- 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 Values.

III Semester

BE in Civil 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	PCC	24CV31	Strength of Materials	CV	3	2	0	50	50	100	**4**
2	PCC	24CV32	Water Supply and Waste water Engineering	CV	3	2	0	50	50	100	**4**
3	PCC	24CV33	Engineering Geology	CV	3	0	0	50	50	100	**3**
4	IPCC	24CV34	Engineering Survey	CV	3	0	2	50	50	100	**4**
5	PCCL	24CVL35	Computer Aided Building Planning and Drawing	CV	0	0	2	50	50	100	**1**
6	ESC/ PLC	24CV36x	ESC/ETC/PLC	CV	3	0	0	50	50	100	**3**
7	AEC	24CV37x	Ability Enhancement Course/Skill Enhancement Course - III	CV	If the course is a Theory: 1	0	0	50	50	100	**1**
					If a course is a laboratory: 0	0	2				
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)	
24CV36A	Rural, Urban Planning and Architecture
24CV36B	Fire Safety in Buildings
24CV36C	Sustainable Design Concept for Building Services
Ability Enhancement Course – III	
24CV37A	Data analytics with Excel (0:0:1)
24CV37B	Smart Urban Infrastructure
24CV37C	Problem Solving with PYTHON

IV Semester

BE in Civil 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			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	PCC	24CV41	Building Materials and Construction	CV	3	0	0	50	50	100	**3**
2	PCC	24CV42	Analysis of Structures	CV	3	0	0	50	50	100	**3**
3	PCC	24CV43	Transportation Engineering	CV	3	0	0	50	50	100	**3**
4	IPCC	24CV44	Fluid Mechanics and Hydraulics	CV	3	0	2	50	50	100	**4**
5	PCCL	24CVL45	Building Materials Testing Lab	CV	0	0	2	50	50	100	**1**
6	BSC/ESC	24CV46x	ESC/ETC/PLC	CV	3	0	0	50	50	100	**3**
7	AEC	24CV47x	Ability Enhancement Course/Skill Enhancement Course- IV	CV	If the course is Theory 1	0	0	50	50	100	**1**
					If the course is a lab 0	0	2				
8	UHV	24UH48	Universal Human Values	Any dept	2	0	0	50	50	100	**2**
9	MC	24NS49/ 24PE49/ 24YO49	NSS/PE/YOGA	NSS/ YOGA/ PE coordinator	0	0	2	100	-	100	-
Total								**500**	**400**	**900**	**20**

Engineering Science Course (ESC/ETC/PLC)	
24CV46A	Construction Equipment, Plants and Machinery
24CV46B	Concreting Techniques & Practices
24CV46C	Watershed Management
Ability Enhancement Course / Skill Enhancement Course - IV	
24CV47A	Building Information Modelling in Civil Engineering – Basics (0:0:2)
24CV47B	GIS with Quantum GIS
24CV47C	Electronic Waste Management - Issues and Challenges

V Semester

BE in Civil 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	24CV51	Construction Management and Entrepreneurship	CV	3	2	0	50	50	100	**4**
2	PCC	24CV52	Concrete Technology	CV	4	0	0	50	50	100	**4**
3	IPCC	24CV53	Geotechnical Engineering	CV	3	0	2	50	50	100	**4**
4	PCCL	24CVL54	Concrete and Highway Lab	CV	0	0	2	50	50	100	**1**
5	PEC	24CV55x	Professional Elective Course	CV	3	0	0	50	50	100	**3**
6	AEC	24RM56	Research Methodology & IPR	CV	2	2	0	50	50	100	**3**
7	HSMC	24ES57	Environmental Studies	CV	1	0	0	100	-	100	**-**
8	MC	24NS58/ 24PE58/ 24YO58	NSS/PE/YOGA	NSS/YOGA/ PE coordinator	0	0	2	100	-	100	**-**
Total								**500**	**300**	**800**	**19**

Professional Elective Course-1	
24CV55A	Numerical Methods in Civil Engineering
24CV55B	Ground Water Hydraulics
24CV55C	Remote Sensing and GIS

VI Semester

BE in Civil 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	Credit
					L	T	P				
1	PCC	24CV61	Irrigation Engineering and Hydraulic Structures	CV	3	2	0	50	50	100	**3**
2	IPCC	24CV62	Design of RCC Structures	CV	3	0	2	50	50	100	**4**
3	PCCL	24CVL63	Software Application Lab	CV	0	0	2	50	50	100	**1**
4	PEC	24CV64x	Professional Elective Course-I	CV	4	0	0	50	50	100	**4**
5	PEC	24CV65x	Professional Elective Course-II	CV	4	0	0	50	50	100	**4**
6	OEC	24CV66x	Open Elective Course	CV	3	0	0	50	50	100	**3**
7	PROJ	24CV67	Mini Project	CV	0	0	4	100	--	100	**2**
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-1	
24CV64A	Design of Bridges
24CV64B	Design and Construction of Highway Pavements
24CV64C	Applied Geotechnical Engineering
Professional Elective Course-11	
24CV65A	Ground Improvement Techniques
24CV65B	Pre-Engineered Construction Technology
24CV65C	Urban Transportation and Planning
Open Elective Course	
24CV66A	Water conservation and Rainwater Harvesting
24CV66B	Geographic Information Systems
24CV64C	Sustainable Development Goals

VII Semester

BE in Civil 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			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	PCC	24CV71	Estimation and Contract Management	CV	3	2	0	50	50	100	**4**
2	PCC	24CV72	Prestressed Concrete	CV	3	2	0	50	50	100	**4**
3	IPCC	24CV73	Design of Steel Structures	CV	3	0	2	50	50	100	**4**
4	PCCL	24CVL74	Environmental Engg Lab	CV	0	0	2	50	50	100	**1**
5	PEC	24CV75X	Professional Elective Course	CV	4	0	0	50	50	100	**4**
6	OEC	24CV76X	Open Elective Course	CV	4	0	0	50	50	100	**4**
7	PROJ	24CVP77	Major Project Phase-I	CV	0	0	4	100	-	100	**2**
Total								**400**	**300**	**700**	**23**

Professional Elective Course	
24CV75A	Intelligent Transport Systems
24CV75B	Earthquake Resistant Structures
24CV75C	Design and Execution of Pile Foundations
Open Elective Course	
24CV76A	Traffic Engineering
24CV76B	Conservation Of Natural Resources
24CV76C	Environmental Protection and Management

VIII Semester

BE in Civil 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			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	INT	24INT81	Research / Industrial Internship	CV				100	100	200	**5**
2	PROJ	24CVP82	Project Work Phase - II	CV	0	0	12	100	100	200	**12**
Total								**200**	**200**	**400**	**17**

Assessment Metrics

IPCC

Continues Internal assessment (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 / Programming Competition / Hackathon / 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 Programming Competition / Hackathon / Code Tandra / Quiz/Online Certification for 10 + Lab assessment for 25		
Semester End examinations (SEE)	100	CO1, CO2, CO3, CO4, CO5

PCC

Continues Internal assessment (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 30 marks		
Assignment/ Programming Competition / Hackathon / Code Tandra / Quiz/Online Certification	25	CO1, CO2, CO3, CO4, CO5
The Final CIE out of 50 Marks = Adding of two CIE tests for 30 Marks + Marks scored in Programming Competition / Hackathon / Code Tantra / Quiz/ Online Certification for 20		
Semester End examinations (SEE)	100	CO1, CO2, CO3, CO4, CO5