

EPCET - ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Autonomous Scheme Handbook

EPCET | ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

(Batch 2024-2028)



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
www.epcet.edu.in

CURRICULUM

Academic Year 2024 – 2025 (Autonomous)

2024 Batch

Undergraduate Bachelor of Engineering Program- B.E.

Outcome Based Education (OBE)

Scheme for I TO VIII SEM

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

East Point College of Engineering and 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

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), 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 Artificial Intelligence and Data Science, Computer Science & Engineering, Information Science & Engineering, Electronics & Communication Engineering, Mechanical Engineering, CSE (IOT) and Civil Engineering leading to BE degree of VTU. The college is also offering three 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

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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 800 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.

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

The Department of Artificial Intelligence and Data Science was established in the year 2021 with a vision of exploring the emerging trends in the domain of AI and training the students as professionals who can excel in the field and help for the betterment of the society. The Department has a team of well qualified and experienced faculty members who deliver the required skills to the students through a 360o teaching-learning environment. The faculty members are dedicated to impart not only the curriculum based formal education but also teaches beyond the curriculum to make the students ready for the upcoming challenges in the market. The Department faculty members have a good interest in research and have

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several publications in reputed journals, conferences and multiple patents to their name.

The students of the Department are continuously mentored and motivated by the faculty members for the continuous improvement and participation in different activities. The students are motivated not only for academic excellence but also for the research & development. Also, the students are facilitated with the placement training sessions for a better opportunity.

About the program

Year of Establishment	2021-22
Name of the Program offered	BE- ARTIFICIAL INTELLIGENCE AND DATA SCIENCE
Intake	60

Department Vision and Mission

Vision

The department orients towards identifying and exploring emerging global trends in Artificial Intelligence and Data Science through academic excellence and quality research, producing proficient professionals for a flourishing society.

Mission

M1: To nurture students with quality education, life-long learning, values and ethics.

M2: To produce ethical and competent professionals through comprehensive and holistic methodologies that align with the global industry demands in Artificial Intelligence and Data Science

Program Educational Objectives (PEOs)

PEO-1: Graduates will possess the ability to apply their knowledge of fundamental engineering, Computer Science and Data Science.

PEO-2: Graduates will have sound intercommunication skills, ethical values and responsibilities to work and serve for the development of the society.

PEO-3: Graduates will be able to understand, interpret, model and implement the Artificial Intelligence and Data Science based solutions for real world problems

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Program Specific Outcome (PSO)

PSO1: To formulate solutions for the real-world problems with the application of basic engineering principles and technical skills of Artificial Intelligence and Data Science.

PSO2: To cater and enhance the analytical and technical skills of the graduates in order to be ready for the professional development, research and pursue higher education.

Program Outcomes (POs)

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.

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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)

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

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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/ TS/ASC/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%

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**East Point College of Engineering and Technology,
Scheme of Teaching and Examinations- 2024
Outcome-Based Education(OBE)and Choice Based Credit System(CBCS)
(Effective from the academic year 2024-2025)**

I Semester (CSE Stream) (Physics Group)

Sl. No	Category	Course Code	Course Title	Teaching Dept/ Board	L	T	P	Exam Duration (hrs)	CIE Marks	SEE Marks	Total Marks	Credits
1	ASC (IC)	EPMTS101	Mathematics-I for CSE Stream	TD: Maths PSB: Maths	2	2	2	3	50	50	100	4
2	ASC (IC)	EPPHS102	Applied Physics for CSE Stream	TD: Phy PSB: Phy	2	2	2	3	50	50	100	4
3	ESC	EPPPS103	Principles of Programming Using C	TD: CSE PSB:CSE	2	0	2	3	50	50	100	3
4	ESC-I	EPESK104x	Engineering Science Course-I (select any one)	Respective Dept	3	0	0	3	50	50	100	3
5	ETC-I / PLC-I	EPETK105x / EPPLK105x	Emerging Technology Course-I / Programming Languages Course-I	Respective Dept	3/2	0	0/2	3	50	50	100	3
6	AEC	EPENK106 / EPPWK106	Communicative English / Professional Writing Skills	Humanities	1	0	0	1	50	50	100	1
7	HSMC	EPSKK107 / EPBKK107 / EPICK107	Sanskritika Kannada / Balake Kannada / Indian Constitution	Humanities	1	0	0	1	50	50	100	1
8	AEC/SDC	EPIDK158 / EPSFK158	Innovation and Design Thinking / Scientific Foundations of Health	Any	1	0	0	1	50	50	100	1
	Total								400	400	800	20

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East Point College of Engineering and Technology, scheme of Teaching and Examinations- 2024 Outcome-Based Education(OBE)and Choice Based Credit System(CBCS) (Effective from the academic year 2024-2025)

II Semester (CSE Stream) Studied Physics Cycle in 1st Sem

Sl. No	Category	Course Code	Course Title	Teaching Dept/ Board	L	T	P	Exam Dur. (hrs)	CIE Marks	SEE Marks	Total Marks	Credits
1	ASC (IC)	EPMTS201	Mathematics-II for CSE Stream	TD: Maths PSB: Maths	2	2	2	3	50	50	100	4
2	ASC (IC)	EPCHE202	Applied Chemistry for CSE Stream	TD: Che PSB: Che	2	2	2	3	50	50	100	4
3	ESC	EPEDK203	Computer-Aided Engineering Drawing	TD: Mech PSB: Mech	2	0	2	3	50	50	100	3
4	ESC-II	EPESK204x	Engineering Science Course-II (select any one)	Respective Dept	3	0	0	3	50	50	100	3
5	ETC-II / PLC-II	EPETK205x / EPPLK205x	Emerging Technology Course-II / Programming Languages Course-II	Respective Dept	3/2	0	0/2	3	50	50	100	3
6	AEC	EPPWK206 / EPENK206	Professional Writing Skills / Communicative English	Humanities	1	0	0	1	50	50	100	1
7	HSMC	EPICK207 / EPSKK207 / EPBKK207	Indian Constitution / Samskrutika Kannada / Balake Kannada	Humanities	1	0	0	1	50	50	100	1
8	HSMS/SDC	EPSF258 / EPIDK258	Scientific Foundations of Health / Innovation and Design Thinking	Any	1	0	0	1	50	50	100	1
				Total					400	400	800	20

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East Point College of Engineering and Technology, Scheme of Teaching and Examinations- 2024 Outcome-Based Education(OBE)and Choice Based Credit System(CBCS) (Effective from the academic year 2024-2025)												
I Semester (CSE Stream) (Chemistry Group)												
Sl. No	Category	Course Code	Course Title	Teaching Dept/ Board	L	T	P	Exam Duration (hrs)	CIE Marks	SEE Marks	Total Marks	Credits
1	ASC (IC)	EPMTS101	Mathematics-I for CSE Stream	TD: Maths PSB: Maths	2	2	2	3	50	50	100	4
2	ASC (IC)	EPCHE102	Applied Chemistry for CSE Stream	TD: Che PSB: Che	2	2	2	3	50	50	100	4
3	ESC	EPEDK103	Computer-Aided Engineering Drawing	TD: Mech PSB: Mech	2	0	2	3	50	50	100	3
4	ESC-I	EPESK104x	Engineering Science Course-I (select any one)	Respective Dept	3	0	0	3	50	50	100	3
5	ETC-I / PLC-I	EPETK105x / EPPLK105x	Emerging Technology Course-I / Programming Languages Course-I	Respective Dept	3/2	0	0/2	3	50	50	100	3
6	AEC	EPPWK106 / EPENK106	Professional Writing Skills / Communicative English	Humanities	1	0	0	1	50	50	100	1
7	HSMC	EPICK107 / EPSKK107 / EPBKK107	Indian Constitution / Samskrutika Kannada / Balake Kannada	Humanities	1	0	0	1	50	50	100	1
8	HSMS/SDC	EPSFK158 / EPIDK158	Scientific Foundations of Health / Innovation and Design Thinking	Any	1	0	0	1	50	50	100	1
								Total	400	400	800	20

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East Point College of Engineering and Technology, Scheme of Teaching and Examinations- 2024 Outcome-Based Education(OBE)and Choice Based Credit System(CBCS) (Effective from the academic year 2024-2025)												
	II Semester (CSE Stream) Studied Chemistry Cycle in 1 st Sem											
Sl. No	Category	Course Code	Course Title	Teaching Dept/ Board	L	T	P	Exam Duration (hrs)	CIE Marks	SEE Marks	Total Marks	Credits
1	ASC (IC)	EPMTS201	Mathematics-II for CSE Stream	TD: Maths PSB: Maths	2	2	2	3	50	50	100	4
2	ASC (IC)	EPPHS202	Applied Physics for CSE Stream	TD: Phy PSB: Phy	2	2	2	3	50	50	100	4
3	ESC	EPPPS203	Principles of Programming Using C	TD: CSE PSB: CSE	2	0	2	3	50	50	100	3
4	ESC-II	EPESK204x	Engineering Science Course-II (select any one)	Respective Dept	3	0	0	3	50	50	100	3
5	PLC-II / ETC-II	EPPLK205x / EPETK205x	Programming Language Course-II / Emerging Technology Course-II	Respective Dept	2/3	0	2/0	3	50	50	100	3
6	AEC	EPENK206 / EPPWK206	Communicative English / Professional Writing Skills	Humanities	1	0	0	1	50	50	100	1
7	HSMC	EPSKK207 / EPBKK207 / EPICK207	Samskrutika Kannada / Balake Kannada / Indian Constitution	Humanities	1	0	0	1	50	50	100	1
8	AEC/SDC	EPIDK258 / EPSFK258	Innovation and Design Thinking / Scientific Foundations of Health	Any	1	0	0	1	50	50	100	1
	Total								400	400	800	20

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1 st Semester									
(ESC-I) Engineering Science Courses-I					(ETC-I) Emerging Technology Courses-I				
Code	Title	L	T	P	Code	Title	L	T	P
EPESK104A	Introduction to Civil Engineering	3	0	0	EPETK105A	Smart Materials and Systems	3	0	0
EPESK104B	Introduction to Electrical Engineering	3	0	0	EPETK105B	Green Buildings	3	0	0
EPESK104C	Introduction to Electronics Communication	3	0	0	EPETK105C	Introduction to Nano Technology	3	0	0
EPESK104D	Introduction to Mechanical Engineering	3	0	0	EPETK105D	Introduction to Sustainable Engineering	3	0	0
EPESK104E	Introduction to C Programming	2	0	2	EPETK105E	Renewable Energy Sources	3	0	0
					EPETK105F	Waste Management	3	0	0
					EPETK105G	Emerging Applications of Biosensors	3	0	0
					EPETK105H	Introduction to Internet of Things (IoT)	3	0	0
					EPETK105I	Introduction to Cyber Security	3	0	0
					EPETK105J	Introduction to Embedded System	3	0	0
(PLC-I) Programming Language Courses-I									
Code	Title	L	T	P					
EPPLK105A	Introduction to Web Programming	2	0	2					
EPPLK105B	Introduction to Python Programming	2	0	2					
EPPLK105C	Basics of JAVA Programming	2	0	2					
EPPLK105D	Introduction to C++ Programming	2	0	2					

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2 nd Semester									
(ESC-I) Engineering Science Courses-I					(ETC-I) Emerging Technology Courses-I				
Code	Title	L	T	P	Code	Title	L	T	P
BESCK204A	Introduction to Civil Engineering	3	0	0	BETCK205A	Smart Materials and Systems	3	0	0
BESCK204B	Introduction to Electrical Engineering	3	0	0	BETCK205B	Green Buildings	3	0	0
BESCK204C	Introduction to Electronics Communication	3	0	0	BETCK205C	Introduction to Nano Technology	3	0	0
BESCK204D	Introduction to Mechanical Engineering	3	0	0	BETCK205D	Introduction to Sustainable Engineering	3	0	0
BESCK204E	Introduction to C Programming	2	0	2	BETCK205E	Renewable Energy Sources	3	0	0
					BETCK205F	Waste Management	3	0	0
					BETCK205G	Emerging Applications of Biosensors	3	0	0
					BETCK205H	Introduction to Internet of Things (IoT)	3	0	0
					BETCK205I	Introduction to Cyber Security	3	0	0
					BETCK205J	Introduction to Embedded System	3	0	0
(PLC-I) Programming Language Courses-I									
Code	Title	L	T	P					
BPLCK205A	Introduction to Web Programming	2	0	2					
BPLCK205B	Introduction to Python Programming	2	0	2					
BPLCK205C	Basics of JAVA Programming	2	0	2					
BPLCK205D	Introduction to C++ Programming	2	0	2					

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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)

** B.MAT301SHall have the 03 hours of theory examination (SEE), however, practical sessions (subject-wise) shall be included in the theory question papers. ** The mathematics subject should be taught by a single faculty member per division, with no sharing of the course(subject)module-wise by different faculty members.

Procedure: SEE shall have the 03 hours of theory examination and 02-03 hours of practical examination ESC or ETC of 03 credits Courses shall have only a theory component (L:T:P:S=3:0:0:0) or if the nature of the course required experiential learning syllabus shall be designed as an Integrated course (L:T:P:S=2:0:2:0).

All 01 credit- courses shall have the SEE of 01 hours duration and the pattern of the question paper shall be MCQ

Credit Definition:

1-hour Lecture (L) per week = 1 Credit 04-Credits courses are to be designed for 50 hours of Teaching-Learning Session

2-hours Tutorial (T) per week = 1 Credit 04-Credits courses are to be designed for 40 hours' theory and 12-14 hours of practical sessions

2-hours Practical / Drawing (P) per week = 1 Credit 03-Credits courses are to be designed for 40 hours of Teaching-Learning Session

2-hours Practical / Drawing (P) per week = 1 Credit 02-Credits courses are to be designed for 25 hours of Teaching-Learning Session

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2-hours Skill Development Activities (SDA) per week = 1 Credit 01-Credit courses are to be designed for 12-15 hours of Teaching-Learning sessions

Student's Induction Program: Motivating (Inspiring) Activities under the Induction program - The main aim of the induction program is to provide newly admitted students a broad understanding of society, relationships, and values. Along with the knowledge and skill of his/her study, students' character needs to be nurtured as an essential quality by which s/he should understand and fulfill the responsibility as an engineer. The following activities are to be covered in 21 days. Physical Activity, Creative Arts, Universal Human Values, Literary, Proficiency Modules, Lectures by Eminent People, Visits to Local areas, Familiarization with Department/Branch and Innovation, etc. For details, refer the ANNEXURE-I of Induction Programs notification of the University published at the beginning of the 1st semester.

AICTE Activity Points to be earned by students admitted to BE/B.Tech. / B. Plan day college program (For more details refer to Chapter 6, AICTE Activity Point Program, Model Internship Guidelines). Over and above the academic grades, every regular student admitted to the 4 years Degree program and every student entering 4 years Degree programs through lateral entry, shall earn 100 and 75 Activity Points respectively for the award of degree through AICTE Activity Point Program. Students transferred from other Universities to the 5th semester are required to earn 50 Activity Points from the year of entry to VTU. The Activity Points earned shall be reflected on the student's eighth semester Grade Card. The activities can be spread over the years, any time during the semester weekends, and holidays, as per the liking and convenience of the student from the year of entry to the program. However, the minimum hours' requirement should be fulfilled. Activity Points (non-credit) do not affect SGPA/CGPA and shall not be considered for vertical progression. In case students fail to earn the prescribed activity Points, an Eighth Semester Grade Card shall be issued only after earning the required activity points. Students shall be admitted for the award of the degree only after the release of the Eighth semester Grade Card.

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III Semester

BE in Artificial Intelligence and Data Science 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 Dept. (TD)/ Board	Teaching Hours /Week			Examination			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	BSC	24AD31	Mathematics III for CSE	TD: Maths PSB: Maths	3	2	0	50	50	100	04
2	PCC	24AD32	Operating systems	TD:AD PSB AD	4	0	0	50	50	100	04
3	PCC	24AD33	Data Structure & Applications	TD:AD PSB AD	3	0	0	50	50	100	03
4	IPCC	24AD34	Digital Design & Computer Organization	TD:AD PSB AD	3	0	2	50	50	100	04
5	PCCL	24ADL35	Data Structure & Applications lab	TD:AD PSB AD	0	0	2	50	50	100	01
6	ESC/PLC	24AD36X	ESC/ETC/PLC	TD:AD PSB AD	2	0	2	50	50	100	03
7	AEC	24AD37X	Ability Enhancement Course - III	TD:AD PSB AD	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.

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Engineering Science Course (ESC/ETC/PLC)			
24AD36A	Object Oriented Programming with Java	24AD36C	Python Programming for Data Science
24AD36B	Object Oriented Programming with C++		
Ability Enhancement Course – III			
24AD37A	Data Analytics with Excel	24AD37C	Prompt Engineering with ChatGPT
24AD37B	Project Management with Git		

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IV Semester

BE in Artificial Intelligence and Data Science 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 Dept. (TD)/ Board	Teaching Hours /Week			Examination			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	PCC	24AD41	Analysis and Design of Algorithms	TD:AD PSB AD	3	0	0	50	50	100	3
2	PCC	24AD42	Database Management Systems	TD:AD PSB AD	3	0	0	50	50	100	3
3	PCC	24AD43	Principles of AI	TD:AD PSB AD	3	0	0	50	50	100	3
4	IPCC	24AD44	Data Analytics with R	TD:AD PSB AD	3	0	2	50	50	100	4
5	PCCL	24ADL45	Design and Analysis Algorithm Lab	TD:AD PSB AD	0	0	2	50	50	100	1
6	BSC/ES C	24AD46X	ESC	TD:AD PSB AD	2	2	0	50	50	100	3
7	AEC	24AD47X	Ability Enhancement Course	TD:AD PSB AD	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/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.

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Engineering Science Course (ESC/ETC/PLC)			
24AD46A	Algorithmic Game Theory	24AD46C	Graph Theory
24AD46B	Discrete Mathematics Structures	24AD46D	Optimization Technique
Ability Enhancement Course – III			
24AD47A	Angular JS	24AD47C	MERN
24AD47B	DBMS with SQL and Mango DB		

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V Semester

BE in Artificial Intelligence and Data Science 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 Dept. (TD)/ Board	Teaching Hours /Week			Examination			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	HSMC	24AD51	Software Engineering & Project Management	TD:AD PSB AD	3	0	0	50	50	100	3
2	PCC	24AD52	Theory of Computation	TD:AD PSB AD	3	2	0	50	50	100	4
3	IPCC	24AD53	Computer Networks	TD:AD PSB AD	3	0	2	50	50	100	4
4	PCCL	24ADL54	Data Visualization using Power BI and Tableau	TD:AD PSB AD	0	0	2	50	50	100	1
5	PEC	24AD55X	Program Elective Course-1	TD:AD PSB AD	4	0	0	50	50	100	4
6	PEC	24AD56X	Program Elective Course-2	TD:AD PSB AD	3	0	2	50	50	100	4
7	NCMC	24ES57	Environmental Studies and E-waste Management*	TD:CV PSB CV	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	20

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

*Environmental Studies and E-waste Management is under the category of NCMC, 1 hour teaching per week has to be allocated in the timetable.

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PEC-1			
24AD55A	Computational Learning Theory	24AD55C	Business Intelligence
24AD55B	Data Mining & Data Warehousing	24AD55D	Cloud Computing

PEC-2			
24AD56A	Computer Vision	24AD56C	Exploratory Data Analysis
24AD56B	Information Retrieval	24AD56D	Digital Image Processing

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VI Semester

BE in Artificial Intelligence and Data Science 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 Dept. (TD)/ Board	Teaching Hours /Week			Examination			
					Theor y	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	PCC	24AD61	Machine Learning	TD:AD PSB AD	3	0	0	50	50	100	3
2	IPCC	24AD62	Big Data Analytics	TD:AD PSB AD	3	0	2	50	50	100	4
3	PCCL	24ADL63	Machine Learning lab	TD:AD PSB AD	0	0	2	50	50	100	1
4	PEC	24AD64X	Program Elective Course-3	TD:AD PSB AD	4	0	0	50	50	100	4
5	AEC	24RM65	Research Methodology and IPR	Any dept	3	0	0	50	50	100	3
6	OEC	24XX66X	Open Elective -1	Respective Dept	3	0	0	50	50	100	3
7	PROJ	24ADP67	Mini Project	TD:AD PSB AD	0	0	4	100	-	100	2
8	MC	24NS68/24PE68 / 24YO68	NSS/PE/YOGA	NSS/YOGA/ PE coordinator	0	0	2	100	-	100	-
9	NCMC	24IKS69	Indian Knowledge System	AI&DS	1	0	0	100	-	100	-
Total								500	300	800	20

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

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PEC-3			
24AD64A	Human-Centered AI	24AD64C	Blockchain Technology
24AD64B	Natural Language Processing	24AD64D	Time Series Analysis

Open Elective -1			
24AD66A	Introduction to Data Structures	24AD66C	Mobile Application Development
24AD66B	Fundamentals of Operating Systems	24AD66D	Introduction to Artificial Intelligence

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VII Semester

BE in Artificial Intelligence and Data Science 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 Dept. (TD)/ Board	Teaching Hours /Week			Examination			
					Theory	Tutorial	Practical	CIE Marks	SEE Marks	Total Marks	Credits
					L	T	P				
1	PCC	24AD71	Data Security & Privacy	TD:AD PSB AD	4	0	0	50	50	100	4
2	PCC	24AD72	Statistical Machine Learning for Data Science	TD:AD PSB AD	3	2	0	50	50	100	4
3	IPCC	24AD73	Deep Learning & Reinforcement Learning	TD:AD PSB AD	3	0	2	50	50	100	4
4	PCCL	24ADL74	Generative AI Lab	TD:AD PSB AD	0	0	2	50	50	100	1
5	PEC	24AD75X	Program Elective Course-4	TD:AD PSB AD	4	0	0	50	50	100	4
6	OEC	24XX76X	Open Elective -2	Respective Dept	4	0	0	50	50	100	4
7	PROJ	24ADP77	Project Work Pahse-1	TD:AD PSB AD	0	0	4	100	-	100	2
Total								400	300	700	23

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

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PEC-4			
24AD75A	Scalable Data Systems	24AD75C	Business Analytics
24AD75B	Data Engineering & MLOps	24AD75D	Social Network Analysis

Open Elective Course -2			
24AD76A	Introduction to DBMS	24AD76C	Software Engineering
24AD76B	Data Analytics	24AD76D	Introduction to Machine Learning

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VIII Semester

BE in Artificial Intelligence and Data Science 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 Dept. (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	TD:AD PSB AD	Two contact hours for interaction between the faculty and students			100	100	200	5
2	PROJ	24ADP82	Project Work Phase - II	TD:AD PSB AD	Three contact hours for interaction between the faculty and students			100	100	200	12
Total								200	200	400	17