DAYANANDA SAGAR ACADEMY OF TECHNOLOGY & MANAGEMENT

CURRICULUM

Scheme and Syllabus

Outcome Based Education

(Academic Year 2026-2027)

Department of Computer Science and Engineering

1st Semester and 2nd Semester B.E

ABOUT THE INSTITUTE

Dayananda Sagar Academy of Technology and Management- DSATM was established in 2011 with 5 UG Programmes and 1 PG Program, the programmes are approved by All India Council for Technical Education (AICTE) New Delhi, Affiliated to Visvesvaraya Technological University (VTU), Belagavi and DSATM is an autonomous institute from 2023-2024.

The Dayananda Sagar Institutions is one of pioneer institutions in India and abroad with six decades of excellence in Academic and Research. The newer campuses were necessary to accommodate the growing need of the technology and innovation.

DSATM nurtures the students in academic, research, sports, cultural and extracurricular activities.

- Creating an academic environment to nurture and develop competent entrepreneurs, leaders and professionals who are socially sensitive and environmentally conscious.
- Integration of Outcome Based Education and cognitive teaching and learning strategies to enhance learning effectiveness.
- Developing necessary infrastructure to cater to the changing needs of Business and Society.
- Optimum utilization of the infrastructure and resources to achieve excellence in all areas of relevance.
- Adopting learning beyond curriculum through outbound activities and creative assignments.
- Imparting contemporary and emerging techno-managerial skills to keep pace with the changing global trends.
- Facilitating greater Industry-Institute Interaction for skill development and employability enhancement.
- Establishing systems and processes to facilitate research, innovation and entrepreneurship for holistic development of students.
- Implementation of Quality Assurance System in all Institutional processes.

VISION OF THE INSTITUTE

To strive at creating the institution a centre of highest calibre of learning, so as to create an overall intellectual atmosphere with each deriving strength from the other to be the best of engineers, scientists with management & design skills.

MISSION OF THE INSTITUTE

- To serve its region, state, the nation and globally by preparing students to make meaningful contributions in an increasing complex global society challenge.
- To encourage, reflection on and evaluation of emerging needs and priorities with state-of-the-art infrastructure at institution.
- To support research and services establishing enhancements in technical, economic, human and cultural development.
- To establish interdisciplinary centre of excellence, supporting/ promoting student's implementation.
- To increase the number of Doctorate holders to promote research culture on campus.
- To establish IIPC, IPR, EDC, innovation cells with functional MOU's supporting student's quality growth**.**

QUALITY POLICY

Dayananda Sagar Academy of Technology and Management aims at achieving academic excellence through continuous improvement in all spheres of Technical and Management education. In pursuit of excellence cutting – edge and contemporary skills are imparted to the utmost satisfaction of the students and the concerned stakeholders.

ABOUT THE DEPARTMENT

Computer Science Engineering (CSE) is an Engineering discipline that encompasses a variety of topics related to Computation, Algorithms, Programming Languages, Program Design, Computer Hardware, Computer Software, Operating System, Networking, Machine Learning, Computer Graphics, Computer Vision , Internet of Things, Big Data etc. The CSE Department is committed for creating a community of students that reflects the diversity of the world we live in, contributing to educational excellence and a dynamic campus environment. Our goal is not only to teach students, how to use current computer applications, but rather to educate them so that they understand how these applications work and can design and build the computer applications of the future.

VISION OF THE DEPARTMENT

Epitomize CSE graduate to carve a niche globally in the field of computer science to excel in the world of information technology and automation by imparting knowledge to sustain skills for the changing trends in the society and industry.

MISSION OF THE DEPARTMENT

M1: To educate students to become excellent engineers in a confident and creative environment through world-class pedagogy.

M2: Enhancing the knowledge in the changing technology trends by giving hands-on experience through continuous education and by making them to organize & participate in various events.

M3: Impart skills in the field of IT and its related areas with a focus on developing the required competencies and virtues to meet the industry expectations.

M4: Ensure quality research and innovations to fulfill industry, government & social needs.

M5: Impart entrepreneurship and consultancy skills to students to develop self-sustaining life skills in multi-disciplinary areas.

PROGRAM EDUCATION OBJECTIVES (PEO'S):

PEO1: Engage in professional practice to promote the development of innovative systems and optimized solutions for Computer Science and Engineering.

PEO2: Adapt to different roles and responsibilities in interdisciplinary working environment by respecting professionalism and ethical practices within organization and society at national and international level.

PEO3: Graduates will engage in life-long learning and professional development to acclimate the rapidly changing work environment and develop entrepreneurship skills

PROGRAM OUTCOMES (PO's)

Engineering Graduates will be able to:

1. Engineering knowledge: Apply the knowledge of mathematics, science, engineering fundamentals, and an engineering specialization to the solution of complex engineering problems.
2. 2.Problem analysis: Identify, formulate, review research literature, and analyze complex engineering problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and engineering sciences.
3. 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.
4. 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.
5. Modern 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.
6. The engineer and society: 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.
7. Environment and sustainability: Understand the impact of the professional engineering solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
8. Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the engineering practice.
9. Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.
10. 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.
11. 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.
12. 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.

PROGRAM SPECIFIC OUTCOMES (PSO's)

PSO1:**Foundation of Mathematical Concepts:** Ability to use mathematical methodologies to solve the problem using suitable mathematical analysis, data structure and suitable algorithm.

PSO2:**Foundation of Computer System:** Ability to interpret the fundamental concepts and methodology of computer systems. Students can understand the functionality of hardware and software aspects of computer systems.

PSO3:**Foundations of Software Development:** Ability to grasp the software development lifecycle and methodologies of software systems. Possess competent skills and knowledge of software design process. Familiarity and practical proficiency with a broad area of programming concepts and provide new ideas and innovations towards research.

PSO4:**Foundations of Multi-Disciplinary Work:** Ability to acquire leadership skills to perform professional activities with social responsibilities, through excellent flexibility to function in multi-disciplinary work environment with self-learning skills.

PROPOSED UG CREDIT STRUCTURE IN ALIGNMENT WITH VTU

Sl. No	Semester	No. of Credits
1	1st Semester	20
2	2nd Semester	20
3	3rd Semester	21
4	4th Semester	21
5	5th Semester	22
6	6th Semester	22
7	7th Semester	20
8	8th Semester	14
	Total	**160**

PROPOSED UG SCHEME

Sl. No	Course Category	BOS	TD	Teaching Hours/Week					Credits
				Lecture	Tutorial	Practical	Project	Total (Hrs/week)	
				L	T	P	S		
1	BSC	MAT	MAT	3	0	0	0	3	3
2	IPCC-1	CSE	CSE	3	0	2	0	5	4
3	IPCC-2	CSE	CSE	3	0	2	0	5	4
4	PCC-1	CSE	CSE	3	0	0	0	3	3
5	PCC-2	CSE	CSE	3	0	0	0	3	3
6	PBL	CSE	CSE	0	0	2	2	4	2
7	AEC	CSE	CSE	0	0	2	0	2	1
8	SCR	CSE	CSE	0	0	2	0	2	1
9	NCMC	NSS / YOGA / PED							
10	AICTE Activity Points								
								Total	**21**

Percentage of Mapping– Theory & Practical - Scheme & Syllabus- 3rd & 4th Sem

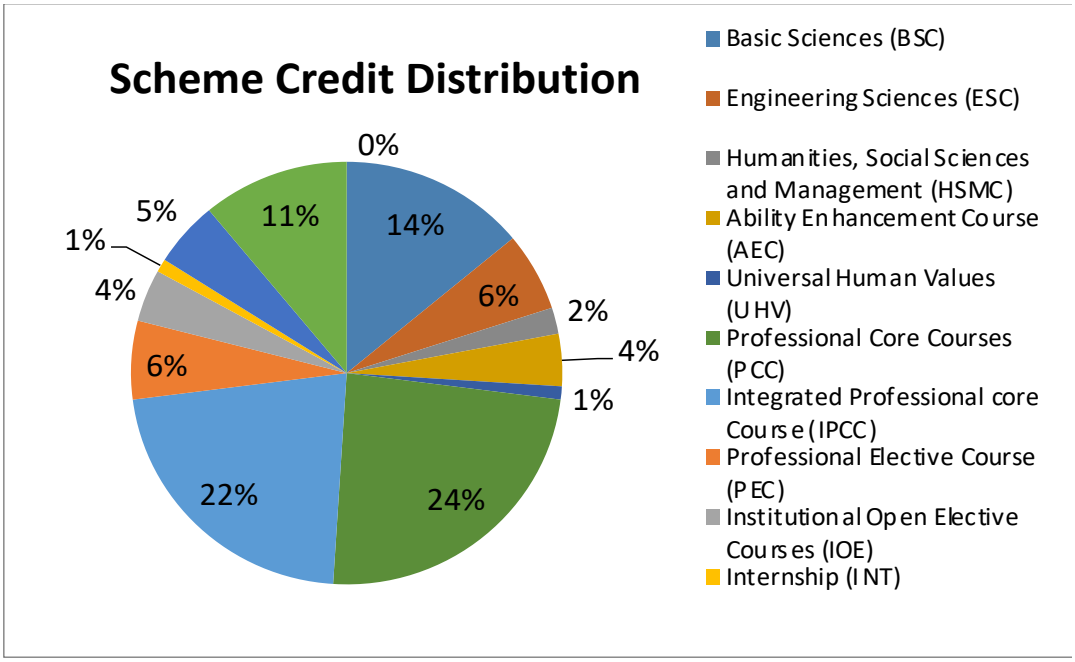
3rd Sem & 4th Sem

Sl. No	Course Category	Component			
		Theory	Practical	Outreach	YOGA/SPORTS
1	BSC	100%	--	--	--
2	IPCC-1	60%	40%	--	--
3	IPCC-2	60%	40%	--	--
4	PCC-1	100%	--	--	--
5	PCC-2	100%	--	--	--
6	PBL	--	100%	--	--
7	AEC	--	100%	--	--
8	SCR	--	--	100%	--
9	NCMC	--	--	--	100%
	Total Percentage	**53%**	**47%**	**13%**	**13%**

Scheme Distribution

Department of Computer Science & Engineering

Course Component	Credits	%of Credits
Basic Sciences (BSC)	22	14
Engineering Sciences (ESC)	9	6
Humanities, Social Sciences and Management (HSMC)	3	2
Ability Enhancement Course (AEC)	7	4
Universal Human Values (UHV)	2	1
Professional Core Courses (PCC)	39	24
Integrated Professional core Course (IPCC)	36	22
Professional Elective Course (PEC)	9	6
Institutional Open Elective Courses (IOE)	6	4
Internship (INT)	1	1
Project based Learning / Mini Project	8	5
Project Work (PW)	18	11
Non-credit Mandatory Courses (NCMC)	0	0
Total Credits	**160**	**100**



SEMESTER WISE CREDIT BREAKDOWN FOR B.E. DEGREE CURRICULUM

BATCH 2023-2027

Course Category	Semester								Total Credits
	1st	2nd	3rd	4th	5th	6th	7th	8th	
Basic Sciences (BSC)	8	8	3	3	0	0	0	0	**22**
Engineering Sciences (ESC)	3	6	0	0	0	0	0	0	**9**
Humanities, Social Sciences and Management (HSMC)	1	2	0	0	0	0	0	0	**3**
Ability Enhancement Course (AEC)	2	1	1	1	0	0	0	2	**7**
Universal Human Values (UHV)	0	0	1	1	0	0	0	0	**2**
Professional Core Courses (PCC)	6	3	6	6	6	6	6	0	**39**
Integrated Professional core Course (IPCC)	0	0	8	8	8	8	4	0	**36**
Professional Elective Course (PEC)	0	0	0	0	6	3	0	0	**9**
Institutional Open Elective Courses (IOE)	0	0	0	0	0	3	3	0	**6**
Internship (INT)	0	0	0	0	0	0	1	0	**1**
Project based Learning / mini-Project	0	0	2	2	2	2	0	0	**8**
Project Work (PW)	0	0	0	0	0	0	6	12	**18**
Non-credit Mandatory Courses (NCMC)	0	0	0	0	0	0	0	0	**0**
Total Credits	**20**	**20**	**21**	**21**	**22**	**22**	**20**	**14**	**160**

Scheme of Teaching and Examinations – 2026-27

Outcome Based Education (OBE) and Choice Based Credit System (CBCS) (Effective from 2026-27)

1st SEMESTER: PHYSICS CYCLE (Computer Science Stream) – Computer Science & Engineering (CSE)

Sl. No	Course Code	Course Title	Course Category	BOS	TD	Teaching Hours/Week					Credits	Examination			
						Lecture	Tutorial	Practical	Project	Total		SEE Duration (Hrs)	CIE Marks	SEE Marks	Total Marks
						L	T	P	S						
1	BMATS101	Engineering Mathematics-1	ASC	MAT	MAT	3	2	0	0	5	4	3	50	50	100
2	BPHYS101	Applied Physics for Computer Science Stream	ASC	PHY	PHY	2	2	2	0	6	4	3	50	50	100
3	BCECE105	Introduction to Electronics Engineering	CEC-1	ECE	ECE	3	0	0	0	3	3	3	50	50	100
4	BESCS101	Principles of Programming using C	ESC	ISE	CSE	2	0	2	0	4	3	3	50	50	100
5	BAIA103	Introduction to AI and Applications	ETC	CSE	CSE	2	0	0	2	4	3	3	50	50	100
6	BCENC106	Communicative English	HSSC	HSS	HSS	1	0	0	0	1	1	2	50	50	100
7	BICNC107	Indian Constitution	HSSC	MED	MED	1	0	0	0	1	1	2	50	50	100
8	BIDTC108	Innovation and Design Thinking	AEC/SDC	ALD	ALD	1	0	0	0	1	1	2	50	50	100
Total						**15**	**4**	**4**	**2**	**25**	**20**	**21**	**400**	**400**	**800**

2nd SEMESTER: CHEMISTRTY CYCLE (Computer Science Stream) – Computer Science & Engineering (CSE)

Sl. No	Course Code	Course Title	Course Category	BOS	TD	Teaching Hours/Week					Credits	Examination			
						Lecture	Tutorial	Practical	Project	Total		SEE Duration (Hrs)	CIE Marks	SEE Marks	Total Marks
						L	T	P	S						
1	BMATS201	Engineering Mathematics-2	ASC	MAT	MAT	3	2	0	0	5	4	3	50	50	100
2	BCHE202	Applied Chemistry for Computer Science Stream	ASC	CHE	CHE	2	2	2	0	6	4	3	50	50	100
3	BCECE203	Introduction to Electrical Engineering	CEC-2	EEE	EEE	2	2	0	0	4	3	3	50	50	100
4	BESCM202	Computer Aided Engineering Drawing	ESC	MED	MED	2	0	2	0	4	3	3	50	50	100
5	BPLCS205	Python Programming	PLC	CSE	CSE	2	0	2	0	4	3	3	50	50	100
6	BCENC206	Professional writing skills in English	HSSC	HSS	HSS	1	0	0	0	1	1	2	50	50	100
7	BSBKC207	Samskruthika Kannada	HSSC	HSS	HSS	1	0	0	0	1	1	2	50	50	100
8	BEEXC208	Engineering Exploration	AEC/SDC	ALD	ALD	0	0	0	2	2	1	2	50	50	100
Total						**13**	**6**	**6**	**2**	**27**	**20**	**21**	**400**	**400**	**800**

IPCC: Integrated Professional Core Course,

PCC: Professional Core Course

PBL: Project Based Learning

AEC: Ability Enhancement Course,

NCMC: Non-Credit Mandatory Course

L: Lecture,

T: Tutorial,

P: Practical

S= SDA: Skill Development Activity,

CIE: Continuous Internal Evaluation,

SEE: Semester End Evaluation.

Integrated Professional Core Course (IPCC): Refers to Integrated Professional Core Course Theory Integrated with practical's of the same course. Credit for IPCC can be 04 and its Teaching Learning hours (L : T : P) can be considered as (3 : 0 : 2) or (2 : 2 : 2). The theory part of the IPCC shall be evaluated both by CIE and SEE. The practical part shall be evaluated by only CIE (no SEE). However, questions from the practical part of IPCC shall be included in the SEE question paper.

Non Credit Mandatory Course (NCMC) - National Service Scheme /Physical Education/Yoga: All students have to register for any one of the courses namely National Service Scheme (NSS), Physical Education (PE)(Sports and Athletics), and Yoga(YOG) with the concerned coordinator of the course during the first week of III semesters. Activities shall be carried out between III semester to the VI semester (for 4 semesters). Successful completion of the registered course and requisite CIE score is mandatory for the award of the degree. The events shall be appropriately scheduled by the colleges and the same shall be reflected in the calendar prepared for the NSS, PE, and Yoga activities. These courses shall not be considered for vertical progression as well as for the calculation of SGPA and CGPA, but completion of the course is mandatory for the award of degree.

1st SEMESTER

PROFESSIONAL CORE COURSE (PCC)

PCC Course - Professional Core Course

Teaching Hours/Week (L: T:P: S)	3:0:0:0
Total Hours of Pedagogy	40 hours
Credits:	03
Each Module	8 Hrs
CIE Marks	50
SEE Marks	50
Total Marks	100
Exam Hours	3
Examination nature (SEE)	Theory

3 Credit Course – Professional Core Course (PCC)

Assessment Details (both CIE and SEE)

- The weightage of Continuous Internal Evaluation (CIE) is 50% and for Semester End Exam (SEE) is 50%.
- The minimum passing mark for the CIE is 40% of the maximum marks (20 marks out of 50) and for the SEE minimum passing mark is 40% of the maximum marks (20 out of 50 marks).
- A student shall be deemed to have satisfied the academic requirements and earned the credits allotted to each subject/ course if the student secures a minimum of 40% (40 marks out of 100) in the sum total of the CIE (Continuous Internal Evaluation) and SEE (Semester End Examination) taken together.

Continuous Internal Evaluation:

Internal Assessment Test (IAT):

- For the Internal Assessment Test component of CIE, there are 25 marks and for Assignment component of the CIE, there are 25 marks. Two Tests, each of 50 Marks with 01-hour 30 minutes' duration, are to be conducted and average of two tests to be reduced to 25 marks
  - The first test will be administered after 40-50% of the syllabus has been covered, and
  - The second test will be administered after 85-90% of the syllabus has been covered
- Any two assignment methods, if an assignment is project-based then only one assignment for the course shall be planned. The teacher should not conduct two assignments at the end of the semester if two assignments are planned.
- For the course, CIE marks will be based on a scaled-down sum of two tests and other methods

of assessment.

- Internal Assessment Test question paper is designed to attain the different levels of Bloom's taxonomy as per the outcome defined for the course.

The IA test questions are to be framed to map the Course Outcomes (COs), Program Outcomes (POs) and the Blooms RBT Levels. Emphasis to be given for higher order RBT levels

Semester-End Examination:

Theory SEE will be conducted as per the scheduled timetable (duration 03 hours).

- The question paper will have ten questions. Each question is set for 20 marks.
- There will be 2 questions from each module. Each of the two questions under a module (with a maximum of 3 sub-questions), should have a mix of topics under that module.
- The students must answer 5 full questions, selecting one full question from each module.
- Marks scored shall be proportionally reduced to 50 marks.

Continuous and Comprehensive Assessment (CCA):

Two of continuous and comprehensive assessment (CCA) to be conducted to attain COs and POs, evaluated each for **50 Marks**. Total Marks scored will be CCA1+CCA2 and scaled down to **10 Marks**.

- CCA1 after 4th week and CCA2 after 9th week. The evaluation includes either through quiz or rubrics
- CCA as project-based learning,
    - CCA is evaluated for **50 Marks** with review 1 of **20 Marks** after and review 2 of **30 Marks** includes project demonstration/competition and report submission.
    - The evaluation of review 1 after 6th weeks of semester and review 2 after 12th week of semester with project demonstration and submission of the report

Total score for CCA is **10 Marks**

Total Marks scored for theory component of CIE (IAT+ CCA) is **25 Marks**

Possible Continuous and Comprehensive Assessment (CCA):

- Project based, Problem Based, Building Models, Lab-to-Land, Mobile Studio, Design and Programming Contest, Certification, Concept Map (Collage presentation/poster presentation), Case studies, Think-Pair-Share, Flipped classroom,
- The assessment of these techniques shall be in rubrics.
- The faculty can adopt any other CCA method of implementation and its assessment with prior approval of Program Assessment Committee (PAC).

Professional Core Course (PCC) – 3 Credit course – Theory

Assessment Method	Component	Type of Assessments	Syllabus Coverage	Maximum Marks	Average	Reduced Marks	Minimum Passing Marks	Evaluation Details
Total CIE Theory + Practical				**50**	----	----	**20**	
	Theory	Internal Assessment Test (IAT) - I	Module – 1 to 2.5	50	(50+50) / 2	**25**	10	Average of Two Internal test each of 50 Marks scale down the marks to 25 Marks
		Internal Assessment Test (IAT) - II	Module – 2.5 to 5	50				
	Continuous Comprehensive Assessment (CCA)	CCA-1- Pedagogical Initiatives / Activity Based learning	Considering all the Modules	50	(50+50) / 2	**25**	10	Two CCA methods as per VTU Clause 22OB4.2 of regulations to be adopted. If CCA chosen is Project Based Learning, then one assessment method may be adopted
		CCA-2- Pedagogical Initiatives / Activity Based learning		50				
	Total CIE Theory					**50**	20	Total Marks of IAT and CCA is 50

SEE		Theory exam	Entire theory syllabus including questions from lab Component in respective Modules	100	----	50	20	SEE Exam is theory Exam conducted for 100 Marks, scored Marks are scaled down to 50 Marks
			CIE + SEE	100	----	----	40	

Dayananda Sagar Academy of Technology & Management

(Autonomous Institute under VTU)

Semester	:	**I/II**				
Course Title	:	**Introduction to AI and Applications**				
Course Code	:	**BAIA103**				
Course Type (Theory/ Practical/ Integrated)	:	**Theory**				
Category	:	**ETC**				
Stream	:	**CSE**		**CIE**	:	**50 Marks**
Teaching hours/week (L: T:P:S)	:	**3:0:0:0**		**SEE**	:	**50 Marks**
Total Hours	:	**40**		**SEE Duration**	:	**3 Hours**
Credits	:	**3**				

Course Learning Objectives: Students will be able to:

Sl. No	Course Objectives
1	To provide fundamental knowledge of Artificial Intelligence, Machine Learning, Knowledge Representation, and Prompt Engineering concepts.
2	To enable students to apply AI and Machine Learning techniques and prompt engineering methods for solving real-world problems.
3	To develop analytical skills for evaluating different AI algorithms, models, and their performance across various applications.
4	To create awareness about current trends, ethical issues, and the impact of AI technologies in different domains.

Teaching-Learning Process

Pedagogical Initiatives:

Some sample strategies to accelerate the attainment of various course outcomes are listed below:

- Adopt different teaching methods to attain the course outcomes.
- Include videos to demonstrate various concepts in C.
- Encourage collaborative (Group) Learning to encourage team building.
- Ask at least three **HOTS (Higher-order Thinking Skills)** module-wise questions to promote critical thinking.
- Adopt **Problem-Based Learning (PBL),** which fosters students' analytical skills, and develops thinking skills such as evaluating, generalizing, and analyzing information rather than simply recalling it.
- Show different ways to solve a problem & encourage the students to come up with creative & optimal-solutions
- Discuss various case studies to map with real-world scenarios and improve the understanding.
- Devise innovative pedagogy to improve **Teaching-Learning Process (TLP)**.

DSATM

Scheme of Teaching and Examinations for BE Program -2024-25 Outcome Based Education and Choice Based Credit System (CBCS) (Effective from the Academic Year 2024-25)

COURSE CURRICULUM

Modul No.	Topics	Hours
1	**Introduction to Artificial Intelligence:** Artificial Intelligence, How Does AI Work?, Advantages and Disadvantages of Artificial Intelligence, History of Artificial Intelligence, Types of Artificial Intelligence, Weak AI, Strong AI, Reactive Machines, Limited Memory, Theory of Mind, Self-Awareness, Is Artificial Intelligence Same as Augmented Intelligence and Cognitive Computing, Machine Learning and Deep Learning. **Machine Intelligence:** Defining Intelligence, Components of Intelligence, Differences Between Human and Machine Intelligence, Agent and Environment, Search, Uninformed Search Algorithms, Informed Search Algorithms: Pure Heuristic Search, Best-First Search Algorithm (Greedy Search). **Knowledge Representation:** Introduction, Knowledge Representation, Knowledge-Based Agent, Types of Knowledge. **Textbook 1: Chapter 1 (1.1-1.5), Chapter 3 (3.1-3.7.2), Chapter 4 (4.1-4.4)**	**08**
Pedagogy	**Video Demonstration and Visualization.**	
2	**Introduction to Prompt Engineering,** Introduction to Prompt Engineering, The Evolution of Prompt Engineering, Types of Prompts, How Does Prompt Engineering Work?, Comprehending Prompt Engineering's Function in Communication, The Advantages of Prompt Engineering, The Future of LLM Communication. **Prompt Engineering Techniques for ChatGPT**, Introduction to Prompt Engineering Techniques, Instructions Prompt Technique, Zero, One, and Few Shot Prompting, Self-Consistency Prompt. **Prompts for Creative Thinking:** Introduction, Unlocking Imagination and Innovation. **Prompts for Effective Writing:** Introduction, Igniting the Writing Process with Prompts. **Textbook 2: Chapters 1, 3, 4 & 5**	**08**
Pedagogy	**Demonstration of Algorithms**	
3	**Machine Learning:** Techniques in AI, Machine Learning Model, Regression Analysis in Machine Learning, Classification Techniques, Clustering Techniques, Naïve Bayes Classification, Neural Network, Support Vector Machine (SVM). **Textbook 1: Chapter 2 (2.1-2.8)**	**08**
Pedagogy	**Presentation**	
4	**Trends in AI:** AI and Ethical Concerns, AI as a Service (AIaaS), Recent trends in AI, Expert System, Internet of Things, Artificial Intelligence of Things (AIoT). **Textbook 1: Chapter 8 (8.1, 8.2, 8.4), Chapter 9 (9.1- 9.3)**	**08**
Pedagogy	**Poster Presentation**	

5	Robotics, Robotics-an Application of AI, Drones Using AI, No Code AI, Low Code AI. **Textbook 1: Chapter 8 (8.3), Chapter 1 (1.7, 1.8, 1.10, 1.11)** **Industrial Applications of AI:** Application of AI in Healthcare, Application of AI in Finance, Application of AI in Retail, Application of AI in Agriculture, Application of AI in Education, Application of AI in Transportation, AI in Experimentation and Multi-disciplinary research. **Textbook 3: Chapter 3, Chapter 5 (5.1)**	**08**
Pedagogy	**Video demonstration and Simulation**	
	Pedagogical Initiatives (Not limited to): • **Think Pair and Share (Blended Learning):** provides an opportunity for students to learn from one another • **Problem Solving**: encourages cognitive thinking and enables creative problem solving • **Poster Presentation:** allows students to represent the concepts visually in order to understand the topics easily. • **Case studies:** maps different domains in real time applications • **Demonstration:** exhibits the implementation process	

Textbooks	
Sl. No.	**Title of the Book/Name of the author/Name of the publisher/Edition and Year**
1	Reema Thareja, Artificial Intelligence: Beyond Classical AI, Pearson Education, 2023.
2	Ajantha Devi Vairamani and Anand Nayyar, Prompt Engineering: Empowering Communication, 1st Edition, CRC Press, Taylor & Francis Group, 2024. (DOI: https://doi.org/10.1201/9781032692319).
3	Saptarsi Goswami, Amit Kumar Das and Amlan Chakrabarti, "AI for Everyone – A Beginner's Handbook for Artificial Intelligence", Pearson, 2024.
Reference Books	
1	Stuart Russell and Peter Norvig, Artificial Intelligence: A Modern Approach (4th Edition), Pearson Education, 2023.
2	Elaine Rich, Kevin Knight, and Shivashankar B. Nair, Artificial Intelligence, McGraw Hill Education.
3	Tom Taulli, Prompt Engineering for Generative AI: ChatGPT, LLMs, and Beyond, Apress, Springer Nature.
4	Nilakshi Jain, Artificial Intelligence: Making A System Intelligent, First Edition, Wiley.

Course Outcomes: At the end of the course, the student will be able to:

CO	Course Outcomes	RBT Level	RBT Level Indicator
CO1	Explain the fundamental concepts of Artificial Intelligence and Machine Learning including their principles, types, and real-world significance.	L2	U
CO2	Apply AI and ML techniques such as search algorithms, regression, classification, clustering, and prompt engineering methods to solve basic computational problems.	L3	AP
CO3	Analyze different AI models, algorithms, and techniques and compare their performance, advantages, and limitations in various scenarios.	L4	AN
CO4	Evaluate the impact of AI technologies, trends, and applications in diverse domains like healthcare, finance, education, and agriculture.	L5	E

Mapping of Course Outcomes to Program Outcomes:

CO/PO	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12	PSO1	PSO2	PSO3	PSO4
CO1																
CO2	3												2			
CO3		3														
CO4			3		2				2	2					2	

Weblinks and Video Lectures (e-Resources)	
1	Elements of AI – https://www.elementsofai.com
2	CS50's Introduction to Artificial Intelligence with Python – Harvard https://cs50.harvard.edu/ai/
3	Google Machine Learning Crash Course – https://developers.google.com/machine-learning/crash-course
4	Learn Prompting (Open-Source Guide) – https://learnprompting.org
5	Google AI – Learn with Google AI https://ai.google/education/
6	Coursera – Machine Learning by Andrew Ng (Stanford University) https://www.coursera.org/learn/machine-learning
7	OpenAI Prompt Engineering Guide (for ChatGPT) https://platform.openai.com/docs/guides/gpt-best-practices
8	Prompt Engineering for Developers – DeepLearning.AI + OpenAI https://www.deeplearning.ai/short-courses/chatgpt-prompt-engineering-for-developers/
9	Ethics in AI – Google Responsible AI Practices https://ai.google/responsibilities/responsible-ai-practices/

10	Google Teachable Machine (Train AI models visually without code) https://teachablemachine.withgoogle.com

CIE- Continuous Internal Evaluation (50 Marks)

Bloom's Category	Theory			
	Continuous Assessment Tests (IAT)		Continuous Comprehensive Assessment (CCA)	
	IAT-1	IAT-2	CCA-1	CCA-2
	50 Marks	50 Marks	50 Marks	50 Marks
Remember	20	10		
Understand	20	10	10	
Apply	10	20	10	
Analyze		10	10	
Evaluate				10
Create				10

CIE Course Assessment Plan

`	Marks Distribution						Total Marks	Weightage
	Test-1			Test-2				
	Module 1	Module 2	Module 2 to 2.5	Module-2.5 to 3	Module- 4	Module- 5		
CO1	10	5	5	5	5	5	35	25%
CO2	10	10	5	5	10	10	50	25%
CO3		5			5	5	15	35%
CO4								15%
CO5								--
Total	20	20	10	10	20	20	100	

SEE- Semester End Examination (50 Marks)

Bloom's Category	SEE Marks (90% Theory+10% Practical Questions)
Remember+ Understand	10% + 2%
Apply	20% + 2%
Analyze	40% + 4%
Evaluate	20% + 2%
Create	

SEE Marks Distribution

CO's	Marks Distribution					Total Marks	Weightage
	Module-1	Module-2	Module- 3	Module-4	Module-5		
CO1	20	10				30	30%
CO2		10	10	10	10	40	40%
CO3			10	10	10	30	30%
CO4							-
CO5							-
Total	20	20	20	20	20	100	100%