



DAYANANDA SAGAR UNIVERSITY

SCHOOL OF ENGINEERING



**SCHEME FOR
BACHELOR OF TECHNOLOGY (B.Tech)**

**COMPUTER SCIENCE & ENGINEERING
(Artificial Intelligence & Machine Learning)
(1st to 8th Semester)**

Graduation Batch: 2024-2028

(With effect from 2024-25)



Dayananda Sagar University
School of Engineering

Devarakagalahalli, Harohalli, Kanakapura Road, Ramanagara Dt., Bengaluru- 562112

DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
(Artificial Intelligence & Machine Learning)

Total Credits

Sl. No	Semester	Credits
1	1 st semester	21
2	2 nd semester	21
3	3 rd semester	23
4	4 th semester	23
5	5 th semester	22
6	6 th semester	22
7	7 th semester	13
8	8 th semester	15
Total		160



SCHEME - B.TECH – 2024-25 ONWARDS

I SEM - CHEMISTRY CYCLE

SL	COURSE CODE	COURSE TITLE	SCHEME OF TEACHING					Duration in Hrs Exam	Examination (Maximum Marks)		
			L	T	P	J	C		CIE	SEE	TM
1	24EN1101	LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS	3	0	0	0	3	3	60	40	100
2	24EN1102	OBJECT ORIENTED PROGRAMMING	2	1	2	0	4	3	60	40	100
3	24EN1103	COGNITIVE AND TECHNICAL SKILLS – I	0	0	4	0	2	1	100	-	100
4	24EN1104	ENGINEERING CHEMISTRY	2	0	2	0	3	3	60	40	100
5	24EN1105	INTRODUCTION TO MECHANICAL ENGINEERING	2	0	2	0	3	3	60	40	100
6	24EN1106	INTRODUCTION TO ELECTRICAL ENGINEERING	2	0	0	0	2	3	60	40	100
7	24EN1107	ENGINEERING MECHANICS	2	0	0	0	2	3	60	40	100
8	24EN1108	TECHNICAL ENGLISH	2	0	0	0	2	1	100	-	100
9	24EN1109	ENVIRONMENTAL SCIENCE	1	0	0	0	0	1	50	-	50
10	24EN1110	KANNADA KALI / MANASU	1	0	0	0	0	1	50	-	50
			17	1	10	0	21		660	240	900

L – Lecture, T – Tutorial, P – Practical, J – Project, C – No. of Credits, CIE – Continuous Internal Evaluation,
SEE- Semester End Examinations, TM – Total Marks.



SCHEME - B.TECH – 2024-25 ONWARDS

I SEM - PHYSICS CYCLE

SL	COURSE CODE	COURSE TITLE	SCHEME OF TEACHING					Duration in Hrs Exam	Examination (Maximum Marks)		
			L	T	P	J	C		CIE	SEE	TM
1	24EN1101	LINEAR ALGEBRA AND DIFFERENTIAL EQUATIONS	3	0	0	0	3	3	60	40	100
2	24EN1102	OBJECT ORIENTED PROGRAMMING	2	1	2	0	4	3	60	40	100
3	24EN1103	COGNITIVE AND TECHNICAL SKILLS – I	0	0	4	0	2	1	100	-	100
4	24EN1111	ENGINEERING PHYSICS	3	0	2	0	4	3	60	40	100
5	24EN1112	INTRODUCTION TO ELECTRONICS ENGINEERING	3	0	0	0	3	3	60	40	100
6	24EN1113	ENGINEERING GRAPHICS AND DESIGN THINKING	2	0	2	0	3	2	60	40	100
7	24EN1114	BIOLOGY FOR ENGINEERS	2	0	0	0	2	1	100	-	100
8	24EN1115	CONSTITUTION OF INDIA AND PROFESSIONAL ETHICS	1	0	0	0	0	1	50	-	50
			16	1	10	0	21		550	200	750

L – Lecture, T – Tutorial, P – Practical, J – Project, C – No. of Credits, CIE – Continuous Internal Evaluation,
SEE- Semester End Examinations, TM – Total Marks.



SCHEME - B.TECH – 2024-25 ONWARDS

II SEM - CHEMISTRY CYCLE

SL	COURSE CODE	COURSE TITLE	SCHEME OF TEACHING					Duration in Hrs Exam	Examination (Maximum Marks)		
			L	T	P	J	C		CIE	SEE	TM
1	24EN1201	SINGLE AND MULTIVARIATE CALCULUS	3	0	0	0	3	3	60	40	100
2	24EN1202	C PROGRAMMING FOR PROBLEM SOLVING	2	1	2	0	4	3	60	40	100
3	24EN1203	COGNITIVE AND TECHNICAL SKILLS – II	0	0	4	0	2	1	100	-	100
4	24EN1104	ENGINEERING CHEMISTRY	2	0	2	0	3	3	60	40	100
5	24EN1105	INTRODUCTION TO MECHANICAL ENGINEERING	2	0	2	0	3	3	60	40	100
6	24EN1106	INTRODUCTION TO ELECTRICAL ENGINEERING	2	0	0	0	2	3	60	40	100
7	24EN1107	ENGINEERING MECHANICS	2	0	0	0	2	3	60	40	100
8	24EN1108	TECHNICAL ENGLISH	2	0	0	0	2	1	100	-	100
9	24EN1109	ENVIRONMENTAL SCIENCE	1	0	0	0	0	1	50	-	50
10	24EN1110	KANNADA KALI / MANASU	1	0	0	0	0	1	50	-	50
			17	1	10	0	21		660	240	900

L – Lecture, T – Tutorial, P – Practical, J – Project, C – No. of Credits, CIE – Continuous Internal Evaluation,
SEE- Semester End Examinations, TM – Total Marks.



SCHEME - B.TECH – 2024-25 ONWARDS

II SEM - PHYSICS CYCLE

SL	COURSE CODE	COURSE TITLE	SCHEME OF TEACHING					Duration in Hrs Exam	Examination (Maximum Marks)		
			L	T	P	J	C		CIE	SEE	TM
1	24EN1201	SINGLE AND MULTIVARIATE CALCULUS	3	0	0	0	3	3	60	40	100
2	24EN1202	C PROGRAMMING FOR PROBLEM SOLVING	2	1	2	0	4	3	60	40	100
3	24EN1203	COGNITIVE AND TECHNICAL SKILLS – II	0	0	4	0	2	1	100	-	100
4	24EN1111	ENGINEERING PHYSICS	3	0	2	0	4	3	60	40	100
5	24EN1112	INTRODUCTION TO ELECTRONICS ENGINEERING	3	0	0	0	3	3	60	40	100
6	24EN1113	ENGINEERING GRAPHICS AND DESIGN THINKING	2	0	2	0	3	2	60	40	100
7	24EN1114	BIOLOGY FOR ENGINEERS	2	0	0	0	2	1	100	-	100
8	24EN1115	CONSTITUTION OF INDIA AND PROFESSIONAL ETHICS	1	0	0	0	0	1	50	-	50
			16	1	10	0	21		550	200	750

L – Lecture, T – Tutorial, P – Practical, J – Project, C – No. of Credits, CIE – Continuous Internal Evaluation,
SEE- Semester End Examinations, TM – Total Marks.



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
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III SEM – CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

SL. NO	Course Type	Course Code	Course Name	Teaching Hours / Week				Examination			
				Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	Credit
				L	T	P	J				
1	BSC	24AM2301	Probability & Statistics	3	0	0	0	60	40	100	03
2	IPCC	24AM2302	Data Structures	3	0	2	0	60	40	100	04
3	IPCC	24AM2303	Computer Networks	3	0	2	0	60	40	100	04
4	PCC	24AM2304	Discrete Mathematics and Graph Theory	3	0	0	0	60	40	100	03
5	PCC	24AM2305	Computer Organization and Architecture	3	0	0	0	60	40	100	03
6	PCC	24AM2306	Embedded Systems Design	3	0	0	0	60	40	100	03
7	SEC	24AM2307	Skill Enhancement Course – I (Java Programming)	1	0	2	0	100	--	100	02
8	PCC	24AM2308	AI for Renewable Energy Systems	1	0	0	0	100	--	100	01
9	AEC	24AM2309	Cognitive and Technical Skills-III	--	--	--	--	--	--	--	Pass/Fail
			Total	20	0	06	0				23

IPCC-Integrated Professional Core Course, PCC-Professional Core Courses, SEC-Skill Enhancement Courses, BSC-Basic Science, L – Lecture, T – Tutorial, P – Practical, J –Project, C – No. Of Credits, AEC-Ability Enhancement Course

AIML-SCHEME (2024-2028 (1ST - 8TH SEMESTER))



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IV SEM – CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

SL	Course Type	Course Code	Course Name	Teaching Hours / Week				Examination			
				Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	Credit
				L	T	P	J				
1	BSC	24AM2401	Transform and Numerical Techniques	3	0	0	0	60	40	100	03
2	IPCC	24AM2402	Design and Analysis of Algorithms	3	0	2	0	60	40	100	04
3	IPCC	24AM2403	Database Management System	3	0	2	0	60	40	100	04
4	PCC	24AM2404	Theory of Computation and System Software	3	1	0	0	60	40	100	04
5	PCC	24AM2405	Artificial Intelligence	3	0	0	0	60	40	100	03
6	PCC	24AM2406	Full Stack Development	3	0	0	0	60	40	100	03
7	SEC	24AM2407	Skill Enhancement Course –II (Unix and Shell Programming)	1	0	2	0	100	--	100	02
8	AEC	24AM2408	Cognitive and Technical Skills-IV	--	--	--	-	--	--	--	Pass/Fail
			Total	19	1	06	0				23

IPCC-Integrated Professional Core Course, PCC-Professional Core Courses, SEC-Skill Enhancement Courses, PEC-Professional Elective Courses, BSC-Basic Science, L – Lecture, T – Tutorial, P – Practical, J– Project, C – No. Of Credits, AEC-Ability Enhancement Course

AIML-SCHEME (2024-2028 (1ST - 8TH SEMESTER))



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V SEM – CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

SL	Course Type	Course Code	Course Name	Teaching Hours / Week				Examination			
				Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	Credit
				L	T	P	J				
1	IPCC	24AM3501	Machine Learning	3	0	2	0	60	40	100	04
2	IPCC	24AM3502	Operating Systems	3	0	2	0	60	40	100	04
3	PCC	24AM3503	Natural Language Models	3	1	0	0	60	40	100	04
4	PCC	24AM3504	Image Processing and Computer Vision	3	0	0	0	60	40	100	03
5	HSMC	24AM3505	Innovation and Entrepreneurship	2	0	0	0	60	40	100	02
6	SEC	24AM3506	Skill Enhancement Course -III (Cloud Computing)	1	0	2	0	100	--	100	02
7	PEC	24AM35X X	Professional Elective Course -I	2	0	0	2	100	--	100	03
8	AEC	24AM3507	Cognitive and Technical Skills-V	-	-	-	-	--	--	--	Pass/Fail
			Total	17	1	6	2				22

HSMC- Humanities and Social Sciences including Management Courses, IPCC-Integrated Professional Core Course, PCC-Professional Core Courses, SEC-Skill Enhancement Courses, PEC-Professional Elective Courses, L – Lecture, T – Tutorial, P – Practical, J-Project, C – No. Of Credits, AEC-Ability Enhancement Course

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VI SEM – CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

SL	Course Type	Course Code	Course Name	Teaching Hours / Week				Examination			
				Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	Credit
				L	T	P	J				
1	IPCC	24AM3601	Deep Learning	3	0	2	0	60	40	100	04
2	IPCC	24AM3602	Generative AI	3	0	2	0	60	40	100	04
3	PCC	24AM3603	Designing MLOps for Enterprises	3	0	0	0	60	40	100	03
4	PEC	24AM36XX	Professional Elective Course – II	2	0	0	2	100	--	100	03
5	PEC	24AM36XX	Professional Elective Course – III	2	0	0	2	100	--	100	03
6	OEC	24OEXXXX	Open Elective – I	3	0	0	0	60	40	100	03
7	PROJ	24AM3604	Minor Project	0	0	0	4	--	100	100	02
8	AEC	24AM3605	Cognitive and Technical Skills-VI	-	-	-	-	--	--	--	P/F
			Total	15	0	6	8				22

IPCC-Integrated Professional Core Course, PCC-Professional Core Courses, PEC-Professional Elective Courses, OEC-Open Elective Courses, PROJ-Project Work, L – Lecture, T – Tutorial, P – Practical, J– Project, C – No. Of Credits, AEC-Ability Enhancement Course

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VII SEM –CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

SL	Course Type	Course Code	Course Name	Teaching Hours / Week				Examination			
				Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	Credit
				L	T	P	J				
1	PROJ	24AM4701	Capstone Project Phase-I	0	0	0	8	60	40	100	04
2	PEC	24AM47XX	Professional Elective Course – IV	2	0	0	2	100	--	100	03
3	PEC	24AM47XX	Professional Elective Course – V/ MOOC	2	0	0	2	100	--	100	03
4	OEC	24OEXXXX	Open Elective – II	3	0	0	0	60	40	100	03
			Total	7	0	0	12				13

CID* - NPTEL COURSE ID

IPCC-Integrated Professional Core Course, PCC-Professional Core Courses, SEC-Skill Enhancement Courses, PEC-Professional Elective Courses, OEC-Open Elective Courses, PROJ-Project Work, L – Lecture, T – Tutorial, P – Practical, J–Project, C – No. Of Credits

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VIII SEM –CSE (ARTIFICIAL INTELLIGENCE AND MACHINE LEARNING)

SL	Course Type	Course Code	Course Name	Teaching Hours / Week				Examination			
				Lecture	Tutorial	Practical	Project	CIE Marks	SEE Marks	Total Marks	Credit
				L	T	P	J				
1	PROJ	24AM4801	Capstone Project Phase-II	0	0	0	24	60	40	100	12
2	INT	24AM4802	Internship	0	0	0	6	100	--	100	03
			Total	0	0	0	30				15

PROJ-Project Work, INT-Internship, L – Lecture, T – Tutorial, P – Practical, J – Project, C – No. Of Credits



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PROFESSIONAL ELECTIVE COURSES DOMAIN-WISE

S. N	Domain-wise	Domain Clusters	PROFESSIONAL ELECTIVE COURSES									
			PEC-I		PEC-II		PEC-III		PEC-IV		PEC-V	
			5th Semester		6th Semester				7th Semester			
			Course Code	Course Name	Course Code	Course Name	Course Code	Course Name	Course Code	Course Name	Course Code	Course Name
1	Domain-1	Agentic AI	24AM3508	Ethics, Safety & Governance of Agentic AI	24AM3606	LLM based Agent Frameworks	24AM3611	Multi-Agent AI Systems	24AM4702	Autonomous Planning and Reasoning Agents	24AM4707	Operationalizing Agentic AI Systems
2	Domain-2	Vision, Speech and Multimodal Intelligence	24AM3509	Intelligent Speech Processing Systems	24AM3607	Visual Computing and Graphics	24AM3612	Intelligent Computational Imaging and Reconstruction	24AM4703	Intelligent Video Surveillance Systems	24AM4708	Multi-modal interaction and speech interfaces
3	Domain-3	Robotics and Automation	24AM3510	Foundations of Robotics and Intelligent Systems	24AM3608	Robot Operating Systems (ROS)	24AM3613	Autonomous Robotic Systems	24AM4704	Foundation Models for Robotics	24AM4709	Human-Centric Automation and Industry 5.0
4	Domain-4	Data Analytics and Applications	24AM3511	Explainable AI	24AM3609	AI for Autonomous Vehicles & Smart Mobility	24AM3614	AI for Healthcare	24AM4705	AI for Agriculture	24AM47010	Blockchain for Cybersecurity and Data Privacy
5	Domain-5	AI Language Intelligence	24AM3512	Cognitive Linguistics	24AM3610	Conversational AI and spoken Language Understanding	24AM3615	Building AI Applications with Large Language Models	24AM4706	Multi modal and Multi lingual Language Perception	24AM47011	Building Transformer-Based Natural Language Processing Applications
DLI INTEGRATED												
6	Domain-6	DLI/MOOC	Accelerated Computing		Deep Tech systems		Graphics and Simulation		AI and Data Science			

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OPEN ELECTIVE COURSES

Sl. No	Open Elective Courses		
	6 th Semester		7 th Semester
	OEC-I	OEC-I	OEC-II
1	Industrial Robotics 24OE0016	Machine Learning for Health Care 24OE0017	Responsible AI & Ethics 24OE0018
DLI INTEGRATED (6 CREDITS)			
2	Accelerated Computing		GenAI and LLM

AIML-SCHEME (2024-2028 (1ST - 8TH SEMESTER))