SCMS SCHOOL OF ENGINEERING AND TECHNOLOGY (AUTONOMOUS)

VIDYA NAGAR, PALISSERY, KARUKUTTY - 683576

DEPARTMENT OF ARTIFICIAL INTELLIGENCE AND DATA SCIENCE

Curriculum for B.Tech. in Computer Science and Engineering (Data Science)

Branch Code - CD

(Group A)

2026 Scheme • Semesters S1 – S8

Vision

To shape the future of Artificial Intelligence and Data Science through innovative research, setting benchmarks and driving transformative societal impact.

Mission

- Impart a strong foundation in AI and Data Science for developing competent professionals in analytical and cognitive computing.
- Foster an inclusive, industry-driven environment that promotes ethical, professional, and personal growth.
- Develop innovative and socially responsible AI and Data Science graduates committed to service and lifelong learning

Program Outcomes(POs)

- PO1: Engineering Knowledge: Apply math, science, computing, and engineering fundamentals to complex problems.
- PO2: Problem Analysis: Formulate and analyse complex engineering research and literature.
- PO3: Design/Development of Solutions: Design solutions considering public safety, cost, and net-zero carbon goals.
- PO4: Conduct Investigations: Use research methods, experiment design, and data analysis for valid conclusions.
- PO5: Engineering Tool Usage: Select and apply modern engineering and IT tools with an understanding of limits.
- PO6: The Engineer and the World: Evaluate societal, health, legal, and environmental sustainability impacts
- PO7: Ethics: Apply professional ethics, human values, inclusivity, and legal compliance.
- PO8: Individual and Collaborative Teamwork: Function effectively as an individual or team leader.
- PO9: Communication: Communicate and write effectively across diverse cultural and technical communities.
- PO10: Project Management and Finance: Apply management and economic principles in multidisciplinary settings.
- PO11: Life-Long Learning: Adapt to emerging technologies and engage in independent critical thinking.

Program Specific Outcomes(PSOs)

- PSO1: Apply data science techniques to analyse, model, and solve community-centred data challenges.
- PSO2: Apply machine learning and cognitive computing to build data-driven intelligent systems.
- PSO3: Develop and implement data-driven solutions for complex, interdisciplinary problems across multiple sectors.

Program Educational Objectives(PEOs)

- PEO1: Graduates will apply core and cognitive computing principles to develop intelligent systems and build successful careers.
- PEO2: Graduates will create ethical, data-driven AI solutions to advance research and benefit society.
- PEO3: Graduates will exhibit professionalism and leadership while continuously learning to adapt to emerging AI technologies.

ABBREVIATIONS & COURSE CATEGORIES

L – Lecture (hours)	T – Tutorial (hours)	P – Practical (hours)
SL – Self-Learning (hours)	MC – MOOC Course	Cr. - Credits
IAT1 / IAT2 – Internal Assessment Test 1/2	CIA – Continuous Internal Assessment	SEE – Semester End Examination
BSC – Basic Science Course	ESC – Engineering Science Course	PC / PCL – Programme Core / Programme Core Lab
PC-PBL – Programme Core – Project Based Learning	PE – Programme Elective	OE / ILE – Open Elective / Industry Linked Elective
HMC – Humanities Management Course	SEC – Skill Enhancement Course	HWP – Health & Wellness Programme
PWS – Project Work / Seminar	GC / UC / UE – Group Course / Universal Course/ Universal Elective	MOOC – Massive Open Online Course

SEMESTER 1 (S1)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT1	IAT 2			
1	A	26GAMAT101	BSC	GC	Calculus and Optimization	3	45	0	0	45	90	40	40	40	60	100
2	B	26GAPHT121/ 26GXCYT122	BSC	GC	Physics for Information Science/ Chemistry for Information Science and Electrical Science	4	45	0	30	45	120	40	40	40	60	100
3	C	26GXEST103	ESC	GC	Engineering Graphics	3	30	0	30	30	90	60	60	40	60	100
4	D	26GXEST104	ESC	GC	Introduction to Electrical and Electronics Engineering	4	60	0	0	60	120	40	40	40	60	100
5	E	26UCEST105	ESC	UC	Programming in C	4	45	0	30	45	120	40	40	40	60	100
6	F	26GXESL106	ESC	GC	Basic Electrical and Electronics Engineering Workshop	1	0	0	30	0	30	-	-	100	-	100
7	G	26UCHWT127	HWP	UC	Health and Wellness	1	0	0	30	0	30	-	-	50	-	50
		26UCHUT128	HMC		Life Skills and Professional Communication									100	-	100
8	H	26UCSEM129	SEC	UC	MOOC Course/Communicative English (8 Weeks)	0	0	0	0	0	0	-	-	-	-	-
TOTAL						**20**	**225**	**0**	**150**	**225**	**600**					
Bridge Course : Total 15 Hours																

SEMESTER 2 (S2)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT 1	IAT 2			
1	A	26GAMAT201	BSC	GC	Linear Algebra and Its Applications	3	45	0	0	45	90	40	40	40	60	100
2	B	26GAPHT121/ 26GXCYT122	BSC	GC	Physics for Information Science / Chemistry for Information Science and Electrical Science	4	45	0	30	45	120	40	40	40	60	100
3	C	26GAEST203	ESC	GC	Discrete Mathematics	3	45	15	0	30	90	40	40	40	60	100
4	D	26PCCST204	PC	PC	Introduction to Python Programming	4	45	0	30	45	120	40	40	40	60	100
5	E	26UCEST205	ESC	UC	Engineering Entrepreneurship & IPR	3	45	0	0	45	90	40	40	60	40	100
6	F	26GAESL208	ESC	GC	Computing Practices Workshop	1	0	0	30	0	30	-	-	100	-	100
7	G	26UCHWT127	HWP	UC	Health and Wellness	1	0	0	30	0	30	-	-	50	0	50
		26UCHUT128	HMC		Life Skills and Professional Communication									100	0	100
8	H	26UCSEM129	SEC	UC	MOOC Course/Communicative English (8 Weeks)	1	0	0	0	30	30	-	-	-	-	-
TOTAL						**20**	**225**	**15**	**120**	**240**	**600**					

SEMESTER 3 (S3)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT1	IAT2			
1	A	26GAMAT301	BSC	GC	Probability Distribution and Random Process	3	45	0	0	45	90	40	40	40	60	100
2	B	26PCCST302	PC	PC	Theory of Computation	3	45	0	0	45	90	40	40	40	60	100
3	C	26PCCST303	PC	PC	Data Structures and Algorithms	4	45	15	0	60	120	40	40	40	60	100
4	D	26PBCST304	PC-PBL	PB	Object Oriented Programming	4	60	0	0	60	120	40	40	60	40	100
5	E	26GAEST305	ESC	GC	Fundamentals of Digital Electronics & Logic Design	3	45	0	0	45	90	40	40	40	60	100
6	F	26UCHUT346	HMC	UC	Economics for Engineers	2	30	0	0	30	60	40	40	50	50	100
		26UCHUT347			Engineering Ethics and Sustainable Development							-	-	50	50	100
7	G	26PCCSL307	PCL	PC	Data Structures Lab	2	0	0	45	15	60	-	-	50	50	100
8	H	26PCCSL308	PCL	PC	Python and Statistical Modelling Lab	2	0	0	45	15	60	-	-	50	50	100
9			SEC	MC	MOOC Course (8/12 Weeks)	0	0	0	0	0	0	-	-	-	-	-
TOTAL						**23**	**270**	**15**	**90**	**315**	**690**					
Bridge Course for Lateral Entry Students: Total 15 Hrs.																

SEMESTER 4 (S4)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT 1	IAT 2			
1	A	26GAMAT401	BSC	GC	Graph Theory	3	45	0	0	45	90	40	40	40	60	100
2	B	26PCCST402	PC	PC	Database Management Systems	3	45	0	0	45	90	40	40	40	60	100
3	C	26PCCST403	PC	PC	Operating Systems	4	45	15	0	60	120	40	40	40	60	100
4	D	26PCCST404	PC-PBL	PB	Computer Organisation and Architecture	4	60	0	0	60	120	40	40	60	40	100
5	E	26PECDT41N	PE	PE	Program Elective -1	3/5	45	0	0	45/105	90/150	40	40	40	60	100
6	F	26UCHUT346	HMC	UC	Economics for Engineers	2	30	0	0	30	60	40	40	50	50	100
		26UCHUT347			Engineering Ethics and Sustainable Development							-	-	50	50	100
7	G	26PCCSL407	PCL	PC	Operating Systems Lab	2	0	0	45	15	60	-	-	50	50	100
8	H	26PCCSL408	PCL	PC	DBMS Lab	2	0	0	45	15	60	-	-	50	50	100
9			SEC	MC	MOOC Course (8WEEKS)	1	0	0	0	30	30	-	-	-	-	-
TOTAL						**24/26**	**270**	**15**	**90**	**345/405**	**720/780**					

SEMESTER 5 (S5)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT1	IAT 2			
1	A	26PCCST501	PC	PC	Computer Networks	3	45	0	0	45	90	40	40	40	60	100
2	B	26PCCST502	PC	PC	Design and Analysis of Algorithms	3	45	0	0	45	90	40	40	40	60	100
3	C	26PCCDT503	PC	PC	Data Analytics	4	45	15	0	60	120	40	40	40	60	100
4	D	26PBCDT504	PC-PBL	PB	Big Data Processing	4	60	0	0	60	120	40	40	60	40	100
5	E	26PECDT52N	PE	PE	Program Elective-2	3/5	45	0	0	45/ 105	90/ 150	40	40	40	60	100
6	F	26GAEST605	ESC	GC	Design Thinking and Product Development (Group specific)	2	30	0	0	30	60	40	40	40	60	100
		26UCHUM506	HMC	UC	Constitution of India											
7	G	26PCCDL508	PCL	PC	Data Analytics Lab	2	0	0	45	15	60	-	-	50	50	100
8	H	26PCCDL508	PWS	PC	Mini Project	2	0	0	45	15	60	-	-	50	50	100
9			SEC	MC	MOOC (8 weeks)	0	0	0	0	0	0	-	-	-	-	-
					TOTAL	**23/25**	**270**	**15**	**90**	**315/375**	**690/750**					

Industrial Visit: Maximum 12 days are permitted in S5/S6, not exceeding more than 6 working days.
Industrial Training: Students who are not participating in the industrial visit must attend industrial training during that period.

SEMESTER 6 (S6)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT 1	IAT 2			
1	A	26PCCST601	PC	PC	Compiler Design	3	45	0	0	45	90	40	40	40	60	100
2	B	26PCCDT602	PC	PC	Machine Learning	4	45	15	0	60	120	40	40	40	60	100
3	C	26PCCDT604	PC-PBL	PB	Data Visualization and Programming with R	4	60	0	0	60	120	40	40	60	40	100
4	D	26PECDT63N	PE	PE	Program Elective-3	3/5	45	0	0	45/ 105	90/150	40	40	40	60	100
5	E	26OECDT61N	OE	OE	Open Elective-1	3	45	0	0	45	90	40	40	40	60	100
6	F	26GAEST605	ESC	GC	Design Thinking and Product Development (Group specific)	2	30	0	0	30	60	40	40	40	60	100
		26UCHUM506	HMC	UC	Constitution of India											
7	G	26PCCDL607	PCL	PC	Big Data Processing Lab	2	0	0	45	15	60	-	-	50	50	100
8	H	26PCCDL608	PCL	PC	Networking Lab	2	0	0	45	15	60	-	-	50	50	100
9			SEC	MC	MOOC (8 weeks)	1	0	0	0	30	30	-	-	-	-	-
					TOTAL	**24/26**	**270**	**15**	**90**	**345/405**	**720/780**					

Industrial Visit: Maximum 12 days are permitted in S5/S6, not exceeding more than 6 working days.
Industrial Training: Students who are not participating in the industrial visit must attend industrial training during that period.

Note: Open Electives are such courses which will be offered by other departments.

SEMESTER 7 (S7)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT1	IAT 2			
1	A	26PECDT74N/ 26PECDM74N	PE	PE	Program Elective-4 (Self Study)MOOC/ONLINE)	3/5	45	0	0	45/ 105	90/150	40	40	40	60	100
2	B	26PECDT75N/ 26PECDM75N	PE	PE	Program Elective-5 (Self Study)MOOC/ONLINE)	3/5	45	0	0	45/ 105	90/150	40	40	40	60	100
3	C	26UEHUT71N/26UEHUM71N	HMC	UE	HMC Elective-1 (Self Study)MOOC/ONLINE)	2	30	0	0	30	60	40	40	50	50	100
4	D	26OECDT72N/ 26OECDM72N	OE/IL E	OE	Open Elective-2 (Self Study)MOOC/ONLINE)	3	45	0	0	45	90	40	40	40	60	100
5	E	26PCCDS705	PWS	PC	Seminar	2	0	0	45	15	60	-	-	50	0	50
6	F	26PCCDP706/ 26PCCDI706	PWS	PC	Option 1: Major Project Option 2: Internship (4-6 Months)	5	0	0	150	0	150	-	-	100	-	100
					TOTAL	**18/ 20/ 22**	**165**	**0**	**195**	**180 / 240 / 300**	**540/ 600/ 660**					

SEMESTER 8 (S8)

Sl.	Slot	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
							L	T	P	SL		IAT1	IAT 2			
1	A	26PECDT86N/ 26PECDM86N	PE	PE	Program Elective-6 (Self Study)MOOC/ONLINE)	3/5	45	0	0	45/105	90/150	40	40	40	60	100
2	B	26UCHUT802/ 26UCHUM802	HMC	UC	Organizational Behavior and Business Communication (Self Study)MOOC/ONLINE)	2	30	0	0	30	60	40	40	50	50	100
3	C	26OECDT83N/ 26OECDM83N	OE	OE	Open Elective-2 (Self Study)MOOC/ONLINE)	3	45	0	0	45	90	40	40	40	60	100
4	D	26PCCDP804/ 26PCCDI804/ 26PCCDJ804	PWS	PC	Option 1: Major Project Option 2: Internship (4-6 Months)	5	0	0	150	0	150	-	-	100	-	100
					TOTAL	**13/ 15**	**120**	**0**	**150**	**120 / 180**	**390/ 450**					

TOTAL PROGRAMME CREDITS (S1 – S8):
165 + Additional Credits from level 5 courses (if awarded) + 3 Credits from Activity Points

PROGRAMME ELECTIVES, OPEN ELECTIVES & HMC ELECTIVES

***Note**: Level 5 courses in the B. Tech. curriculum carry a total of 5 credits, consisting of 3 credits for the Programme Elective and 2 additional credits. The additional 2 credits shall be awarded only if the student meets the eligibility conditions specified in the B. Tech. - 2026 regulations. If those conditions are not fulfilled, the student will receive only 3 credits for the course.*

PROGRAM ELECTIVE-1

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26PECDT411	PE	PE	Software Engineering	3	45	0	0	75	90	40	40	40	60	100
2	26PECDT412	PE	PE	Foundations of Security in Computing	3	45	0	0	75	90	40	40	40	60	100
3	26PECDT413	PE	PE	Functional Programming	3	45	0	0	75	90	40	40	40	60	100
4	26PECDT418	PE	PE	Microcontroller	3	45	0	0	75	90	40	40	40	60	100
5	26PECDT416	PE	PE	Signals and Systems	3	45	0	0	75	90	40	40	40	60	100
6	26PECDT417	PE	PE	Soft Computing	3	45	0	0	75	90	40	40	40	60	100
7	**26PECDT415**	**PE**	**PE**	**Foundations of Pattern Recognition**	**5/3**	**45**	**0**	**0**	**105**	**150**	**40**	**40**	**40**	**60**	**100**

PROGRAM ELECTIVE-2

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26PECDT521	PE	PE	Software Project Management	3	45	0	0	75	90	40	40	40	60	100
2	26PECDT522	PE	PE	Artificial Intelligence	3	45	0	0	75	90	40	40	40	60	100
3	26PECDT523	PE	PE	Data Privacy and Security	3	45	0	0	75	90	40	40	40	60	100
4	26PECDT524	PE	PE	Data Compression	3	45	0	0	75	90	40	40	40	60	100
5	26PECDT527	PE	PE	Computer Graphics and Multimedia	3	45	0	0	75	90	40	40	40	60	100
6	26PECDT528	PE	PE	Advanced Computer Architecture	3	45	0	0	75	90	40	40	40	60	100
7	**26PECDT525**	**PE**	**PE**	**Data Mining**	**5/3**	**45**	**0**	**0**	**105**	**150**	**40**	**40**	**40**	**60**	**100**

PROGRAM ELECTIVE-3

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26PECDT631	PE	PE	Software Testing	3	45	0	0	75	90	40	40	40	60	100
2	26PECDT632	PE	PE	Data Warehousing	3	45	0	0	75	90	40	40	40	60	100
3	26PECDT633	PE	PE	Basics of Robotics and Automation	3	45	0	0	75	90	40	40	40	60	100
4	26PECDT634	PE	PE	Cloud Computing	3	45	0	0	75	90	40	40	40	60	100
5	26PECDT636	PE	PE	Digital Image Processing	3	45	0	0	75	90	40	40	40	60	100
6	26PECDT635	PE	PE	Web Mining	3	45	0	0	75	90	40	40	40	60	100
7	**26PECDT695**	**PE**	**PE**	**Deep Learning**	**5/3**	**45**	**0**	**0**	**105**	**150**	**40**	**40**	**40**	**60**	**100**

PROGRAM ELECTIVE-4

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26PECDT741	PE	PE	Recommendation Systems	3	45	0	0	75	90	40	40	40	60	100
2	26PECDT742	PE	PE	Financial Data Science	3	45	0	0	75	90	40	40	40	60	100
3	26PECDT743	PE	PE	Foundations of Computer Vision	3	45	0	0	75	90	40	40	40	60	100
4	26PECDT742	PE	PE	Web Programming	3	45	0	0	75	90	40	40	40	60	100
5	26PECDT743	PE	PE	Bioinformatics	3	45	0	0	75	90	40	40	40	60	100
6	26PECDT747	PE	PE	Blockchain and Cryptocurrencies	3	45	0	0	75	90	40	40	40	60	100
7	**26PECDT795**	**PE**	**PE**	**Information Retrieval**	**5/3**	**45**	**0**	**0**	**105**	**150**	**40**	**40**	**40**	**60**	**100**

PROGRAM ELECTIVE-5

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26PECDT751	PE	PE	Graph Databases and Analysis	3	45	0	0	75	90	40	40	40	60	100
2	26PECDT752	PE	PE	Introduction to Internet of Things	3	45	0	0	75	90	40	40	40	60	100
3	26PECDT753	PE	PE	Mobile Applications	3	45	0	0	75	90	40	40	40	60	100
4	26PECDT752	PE	PE	Responsible Artificial Intelligence	3	45	0	0	75	90	40	40	40	60	100
5	26PECDT754	PE	PE	Digital Forensics	3	45	0	0	75	90	40	40	40	60	100
6	26PECDT758	PE	PE	Parallel Algorithms	3	45	0	0	75	90	40	40	40	60	100
7	**26PECDT755**	**PE**	**PE**	**Reinforcement Learning**	**5/3**	**45**	**0**	**0**	**105**	**150**	**40**	**40**	**40**	**60**	**100**

PROGRAM ELECTIVE-6

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26PECDT861	PE	PE	Time Series Modeling and Analysis	3	45	0	0	75	90	40	40	40	60	100
2	26PECDT862	PE	PE	Social Network Analysis	3	45	0	0	75	90	40	40	40	60	100
3	26PECDT863	PE	PE	Natural Language Processing	3	45	0	0	75	90	40	40	40	60	100
4	26PECDT864	PE	PE	Speech and Audio Processing	3	45	0	0	75	90	40	40	40	60	100
5	26PECDT865	PE	PE	Storage Systems	3	45	0	0	75	90	40	40	40	60	100
6	26PECDT866	PE	PE	Prompt Engineering	3	45	0	0	75	90	40	40	40	60	100
7	**26PECDT867**	**PE**	**PE**	**Next Generation Interaction Design**	**5/3**	**45**	**0**	**0**	**105**	**150**	**40**	**40**	**40**	**60**	**100**

OPEN ELECTIVE-1

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26OECST611	OE	OE	Data Structures	3	45	0	0	45	90	40	40	40	60	100
2	26OECST612	OE	OE	Data Communication	3	45	0	0	45	90	40	40	40	60	100
3	26OECST614	OE	OE	Machine Learning for Engineers	3	45	0	0	45	90	40	40	40	60	100

OPEN ELECTIVE-2

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26OECST721	OE	OE	Cyber Security	3	45	0	0	45	90	40	40	40	60	100
2	26OECST722	OE	OE	Cloud Computing	3	45	0	0	45	90	40	40	40	60	100
3	26OECST725	OE	OE	Mobile Application Development	3	45	0	0	45	90	40	40	40	60	100

OPEN ELECTIVE-3

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26OECST831	OE	OE	Introduction to Algorithms	3	45	0	0	45	90	40	40	40	60	100
2	26OECST832	OE	OE	Web Programming	3	45	0	0	45	90	40	40	40	60	100
3	26OECST834	OE	OE	Internet of Things	3	45	0	0	45	90	40	40	40	60	100

HMC ELECTIVE-1

Sl.	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Internal Test		CIA	SEE	Overall Marks
						L	T	P	SL		IAT 1	IAT 2			
1	26UEHUT711	HMC	UE	Project Management: Planning, Execution, Evaluation and Control	2	30	0	0	30	60	40	40	50	50	100
2	26UEHUM712	HMC	UE	Proficiency course in Foreign language (MOOC Only)	2	0	0	0	60	60	-	-	-	-	-

Minor Program - Intelligent Systems Design and Manufacturing															
Semester	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Marks Distribution				Overall Marks
						L	T	P	SL		IA-1	IA-2	CIA	SEE	
S3	26MNCST319	MN	MN	Python For Artificial Intelligence	4	45	15	0	60	120	40	40	40	60	100
S4	26MNCST419	MN	MN	Mathematics for Machine Learning	4	45	15	0	60	120	40	40	40	60	100
S5	26MNCST519	MN	MN	Essentials of Machine Learning	4	45	15	0	60	120	40	40	40	60	100
S6	26MNCST619	MN	MN	Deep Learning	3	45	0	0	45	90	40	40	40	60	100
				TOTAL	**15**										

Slot M is assigned to Minor Examinations in the respective semesters.

Honours Program															
Semester	Course Code	Type	Cat.	Course Title	Cr.	Hour Structure				Total Hrs.	Marks Distribution				Overall Marks
						L	T	P	SL		IA-1	IA-2	CIA	SEE	
S4	26HNAIT409	HN	HN	Mathematics for Intelligent Computing Systems	4	45	15	0	60	120	40	40	40	60	100
S5	26HNAIT509	HN	HN	Applied Natural Language Processing	4	45	15	0	60	120	40	40	40	60	100
S6	26HNAIT609	HN	HN	Algorithms for Computational Biology and Sequence Analysis	4	45	15	0	60	120	40	40	40	60	100
S7	26HNAIT709	HN	HN	Topics in Artificial Intelligence	3	45	0	0	45	90	40	40	40	60	100
				TOTAL	**15**										

Slot N is assigned to Honours Examinations in the respective semesters.

Course classifications of the B. Tech Program and Overall Credit Structure			
S.No.	Code Type	Category	Credits
1	ESC	Engineering Science Courses	24
2	BSC	Basic Science Course	20
3	HMC/ HWP	Humanities Based Courses /Health and Wellness	12
4	PC	Program Core Courses	35
5	PC-PBL	Project Based Program Core Course	16
6	PCL	Program Core Laboratory Course	14
7	PE	Program Elective Courses	18
8	PWS	Project/Internship & Seminar	14
9	OE	Open Elective Courses	9
10	SEC	Skill Enhancement Courses	3
		Total Credits	164

Engineering Science Courses (ESC)				
Sl. No:	Semester	Course Category	Course Name	Credits
1	S1	GC	Engineering Graphics Drawing(A &B)/ Engineering Mechanics (C)	3
2		GC	Introduction to Electrical & Electronics Engineering(A & B)	4
3		UC	Programming in C	4
4		GC	Basic Electrical and Electronics Engineering Workshop	1
5	S2	GC	Foundations of Artificial Intelligence and Data Science	3
6		UC	Engineering Entrepreneurship & IPR	3
7		GC	IOT Workshop	1
8	S3	GC	Fundamentals of Computer Architecture	3
9	S5/S6	GC	Design Thinking and Product Development (Group specific)	2
			Total Credits	24

Basic Science Course (BSC)				
Sl. No:	Semester	Course Category	Course Name	Credits
1	S1	GC	Matrices, Ordinary Differential Equations and Transforms	3
2	S1/S2	GC	Physics for Electrical Science	4
3			Chemistry for Electrical Science	4
4	S2	GC	Partial Differential Equations and Vector Calculus	3
5	S3	GC	Complex Analysis and Integral Transforms	3
6	S4	GC	Probability Distributions, Statistical Inference and Random Process	3
			Total Credits	20

Humanities Based Courses (HMC)/Health and Wellness (HWP)				
Sl. No:	Semester	Course Category	Courses	Credits
1	S1/S2	UC	Health and Wellness	1
2	S1/S2	UC	Life Skills and Professional Communication	1
3	S3/S4	UC	Economics for Engineers	2
4	S3/S4	UC	Engineering Ethics and Sustainable Development	2
5	S5/S6	UC	Constitution of India	2
6	S7	UE	HMC Elective-1 (Self Study/MOOC/ONLINE)	2
7	S8	UC	Organizational Behavior and Business Communication (Self Study/MOOC/ONLINE)	2
			TOTAL	12

Program Core (PC) Courses				
Sl. No:	Semester	Course Category	Courses	Credits
1	S2	PC	Network theory	4
2	S3	PC	Solid state Devices	3
3	S3	PC	Logic circuit Design	4
4	S4	PC	Linear Integrated Circuits	3
5	S4	PC	Signals and Systems	4
6	S5	PC	Electromagnetics	3
7	S5	PC	VLSI Circuit Design	3
8	S5	PC	Control Systems	4
9	S6	PC	Microwaves and Antennas	3
10	S6	PC	Advanced Communication Theory	4
TOTAL				35
Project Based Program Core (PC-PBL) Course				
1	S3	PB	Analog Circuits	4
2	S4	PB	Microcontroller based System Design	4
3	S5	PB	Analog & Digital Communication	4
4	S6	PB	Digital Signal Processing	4
TOTAL				16
Program Core Laboratory (PCL) Course				
1	S3	PC	Logic Circuit Design Lab	2
2	S3	PC	Scientific Computing Lab	2
3	S4	PC	Analog Circuits Lab	2
4	S4	PC	Microcontroller Lab	2
5	S5	PC	Linear Integrated Circuits Lab	2
6	S6	PC	Communication Lab	2

7	S6	PC	DSP Lab	2
TOTAL				14
GRAND TOTAL for Program Core				65

Program Elective (PE) Courses				
Sl. No:	Semester	Course Category	Courses	Credits
1	S4	PE	Program Elective-1	3
2	S5	PE	Program Elective-2	3
3	S6	PE	Program Elective-3	3
4	S7	PE	Program Elective-4 (Self Study/ MOOC/ ONLINE)	3
5	S7	PE	Program Elective-5 (Self Study/ MOOC/ ONLINE)	3
6	S8	PE	Program Elective-6 (Self Study/ MOOC/ ONLINE)	3
			TOTAL	18

Open Elective (OE) Courses				
Sl. No:	Semester	Course Category	Courses	Credits
1	S6	OE	Open Elective-1	3
2	S7	OE	Open Elective-2 (Self Study/ MOOC/ ONLINE)	3
3	S8	OE	Open Elective-3 (Self Study/ MOOC/ ONLINE)	3
			TOTAL	9

Skill Enhancement (SEC) Courses

Sl. No:	Semester	Course Category	Courses	Credits
1	S1/S2	UC	MOOC (8 Weeks)	1
1	S3/S4	MC	MOOC (8 Weeks)	1
1	S5/S6	MC	MOOC (8 Weeks)	1
			TOTAL	3

Project/Internship & Seminar (PWS)				
Sl. No:	Semester	Course Category	Course Name	Credits
1	S5	PC	Lab/Mini Project	2
2	S7	PC	Seminar	2
3		PC	Option 1: Major Project Option 2: Internship (4-6 Months)	5
4	S8	PC	Option 1: Major Project Option 2: Internship (4-6 Months) Option 3: Major Project Phase-2 (For the students who have not opted for internship in either S7 or S8)	5
			Total Credits	14

Activity Points					
Sl. No.	**Group**	**Activities**	**Point**	**Credit**	**Minimum Credit Requirements**
Participation					**3 Credits (One credit from each Group)**
1	I	Short Term Internship (Minimum 2 weeks)	10 points	1 Credit for 40 Points	
2		Industrial Training (Minimum 2 weeks)	10 points		
3		Attending Conference (Within Institute or outside)	5 points		
4		Attended Conference with Paper Presentation (Within Institute or outside)	10 points		
5		Attended Workshops/STTP (Totaling 5 days of all programs per semester)	5 points per semester		
6		Professional Body member	5 points		
7		Participation in Club activity within institutions	2 points		
8		Participation in Inter/Intra college Hackathons/project competitions/ Technical festivals/Technical Events	5 points per event		
9		Participation in Industrial Visit	10 points		
10		Participation in GATE/National Exams	10 points		
11		Participation in IEDC Activities (minimum 2 activities per year)	10 points per year		
12		MOOC certification on Indian knowledge systems (IKS)	10 points		
Technical/ Academic/Cocurricular ACHIEVEMENTS					
1	II	Journal/Conference Publication.	40 points per publication	1 Credit for 40 Points	
2		Patent Publishing.	40 points per publication		
3		Department/College owned Magazine/newsletter publication.	5 points per year		
4		Winners in Inter/Intra college Hackathons/ project competitions/ Technical festivals/Technical Events.	20 points per win		
5		Winners of Club Activities (college level).	10 points per win		
6		Academic achievement (Above 9 SGPA in any semester).	20 points		
7		Silver or above certification in any NPTEL/SWAYAM MOOCs.	20 points for each MOOC		
8		Aptitude Proficiency Certification (GRE, CAT, GMAT etc.)/ Valid Gate Score.	40 points for every single score		
9		Funded Projects.	40 points per funded project		
10		Individual Start-up/Entrepreneurship activity validated by the department.	20 points (per year)		
11		Elected Student Representatives of Club/University/National/International Technical Bodies.	20 points		
12		Foreign Language Skill (TOEFL/IELTS/BEC exams).	20 points per score		
13		International Internship.	40 points		
14		Coordinators of Editorial board/Club/University/National Technical events.	10 points per year		
Extracurricular					
1	III	NSS, NCC, NSO (National Sports Organization) (minimum 2 years of activity done as member)	40 points	1 Credit for 40 Points	
2		Arts/Sports/Games: (Multiply by 2 for University level, Multiply by 3 for state level, Multiply by 4 for national level)	5 points for Participation per year		
			10 points for winning in any event per year		
			10 points for coordinating any event per year		

3		Union Activities	5 points for Participation in Election as a voter per year		
			10 points for Standing in Election as a candidate per year (must have come in top 5 in election result within the category)		
			15 points for Elected members		
4		Participation Social outreach program (initiated or approved by Department/College/NSS/Government bodies/professional bodies)	5 points per certificate		