

**Kolhapur Institute of Technology's
College of Engineering (Autonomous),
Kolhapur**



**Department of Computer Science and Engineering (Data Science)
Curriculum and Syllabus
for
B. Tech. Computer Science and Engineering (Data Science)
Scheme: 2024-25 (As Per NEP)**

ABOUT THE DEPARTMENT

Welcome to the department of Computer science and engineering (Artificial Intelligence and Machine learning). The department is established in 2021-22. The adoption of artificial intelligence/ Machine Learning (AI/ML) is growing worldwide. Artificial Intelligence and Machine Learning has become one of the fastest-growing engineering streams due to the tremendous rise of computer intelligent systems and their integration into all aspects of our life. Whether it's a basic cell phone or a complex space shuttle, computing systems are present everywhere and play a very important role in all aspects of our life.

AI attempts to artificially instill intelligence in robots by simulating human intellect. Machine learning (ML) is an AI application that aims to give machines the ability to learn on their own. AI and machine learning are key drivers of digital transformation and have resulted in a slew of new career opportunities. Engineers who are well versed in these technologies are in high demand.

DEPARTMENT VISION

To emerge as a leading department in Technical Education and Research in Computer Science and Engineering, especially in the Artificial Intelligence and Machine Learning domain with focus to produce professionally competent and socially sensitive engineers capable of working in a global environment.

DEPARTMENT MISSION

M1	To impart necessary technical and professional skills in the field of Computer Science and Engineering with specialization of Artificial Intelligence and Machine Learning amongst students to make them competent enough from an employability, higher education & entrepreneurship point of view with commitment towards lifelong learning.
M2	To produce the socially sensitive engineers capable of working in a global IT environment who will be competent technocrats to meet current industrial challenges
M3	To establish effective institute-industry interaction where students will be adapting to current industrial tools and techniques.
M4	To enable the graduates to use modern tools, to design and develop Artificial Intelligence and Machine Learning enabled products and communicate effectively with professional ethics.

PROGRAMME EDUCATIONAL OBJECTIVES (PEO)

PEO1	Graduate will gain knowledge in core computer science and engineering fields such as networks, data management and application development.
PEO2	Graduate will gain knowledge in Artificial Intelligence, Machine Learning, Deep learning, and Computer vision.
PEO3	Graduate will demonstrate technical skills, competency in AI & ML and exhibit team management capability with proper communication in a job environment.
PEO4	Graduate will carry out research in the advanced areas of AI & ML and address the basic needs of the society.

PROGRAMME OUTCOMES (PO)	
PO1	Engineering Knowledge: Apply the knowledge of mathematics, basic science and in-depth technical competence in computer science and engineering discipline to meet the solution of complex engineering problems.
PO2	Problem Analysis: Identify, formulate, review various computer science research literature, and analyze complex engineering problems using basic principles of mathematics, natural sciences, and engineering sciences to reach substantiated conclusions
PO3	Design/development of Solutions: Design software solutions for complex computer science and engineering problems and design system processes that meet the specified needs with appropriate consideration for the public health and safety, and the cultural, societal, and environmental considerations.
PO4	Conduct Investigations of Complex Problems: Use research-based knowledge and research methods in the field of computer science and engineering including design of experiments, analysis and interpretation of data, and synthesis of the information to provide valid conclusions
PO5	Modern Tool Usage: Create, select, and apply appropriate techniques, resources, and software tools including prediction and modeling to complex engineering activities with an understanding of the limitations
PO6	The engineer and society: Apply reasoning obtained from the contextual knowledge of computer science to assess societal, health, safety, legal and cultural issues, and the consequent responsibilities relevant to the professional engineering practice
PO7	Environment and sustainability: Understand the impact of the software solutions in societal and environmental contexts, and demonstrate the knowledge of, and need for sustainable development.
PO8	Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the computer science and engineering practice
PO9	Individual and team work: Function effectively as an individual, and as a member or Leader in diverse teams, and in multidisciplinary settings.
PO10	Communication: Communicate effectively on complex computer engineering activities with the engineering community and with society at large, such as being able to make effective presentations, write effective reports and design documentation.
PO11	Project management and finance: Demonstrate knowledge and understanding of the software 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.
PO12	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 computer engineering and technological change.

PROGRAMME SPECIFIC OUTCOMES (PSO)	
PSO1	Academic competence: Apply the concepts of Mathematics, Data Structure, Database System, Operating System, Programming, Networking, and Intelligence System in core areas of Artificial Intelligence and Machine Learning to solve industry and societal problems.
PSO2	Personal and Professional Competence: Develop models in Data Science, Machine learning, Deep learning and Bigdata technologies, using acquired AI & ML knowledge and modern tools. Also apply the skills in Health Care, Education, Agriculture, Intelligent Transport, Environment, Smart System and in the multi-disciplinary area of Artificial Intelligence and Machine Learning.

MAPPING OF PEOs TO POs												
	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10	PO11	PO12
PEO1	3		1		3			1				1
PEO2	1	2	3	1	2			3				3
PEO3	1		1					2	3		3	2
PEO4	1	1		3		3	1	2		1		2

MAPPING OF PEOs TO PSOs		
	PSO1	PSO2
PEO1	2	2
PEO2	-	3
PEO3	1	2
PEO4	2	3

As per NEP Guidelines											
Proposed Scheme of Credit Distribution											
	Year	FY		SY		TY		B. Tech.			
Sr. No.	Type of Course	I	II	III	IV	V	VI	VII	VIII	Actual	NEP Guidelines
1	BS: Basic Science	8	8							16	14-18
2	ES: Engineering Science	7	6							13	12-16
3	PC: Programme Core	3		16	15	10	11	11		66	44-56
4	PE: Programme Elective					3	3	3	6	15	20
5	MM: Multi Minor			2	3	3	3	3		14	14
6	OE: Open Elective					3	3	2		8	8
7	VS: Vocational and Skill Enhancement course	1	3		1	1				6	8
8	AE: Ability Enhancement		3			1				4	4
9	EM: Entrepreneurship /Economics/ Management courses (Mgt/Economics/Mkt/Finance)			2			2			4	4
10	IK: Indian Knowledge System	2								2	2
11	VE: Value Education			2	2					4	4
12	IL: Research Methodology (Project)							4		4	4
13	IL: Comm. Engg Project/Field Project (PBL/Seminar/Mini Project)					1	1			2	2
14	IL: Project								4	4	4
15	IL: Internship/OJT (PBL/Seminar/Mini Project/Virtual Internship/Physical)			1	1				6	8	12
16	CC: Co-curricular Courses		1		1		1		1	4	4
		20-22	20-22	20-22	20-22	20-22	20-22	20-22	20-22	174	
		21	21	23	23	22	2	23	17	174	

SEMESTER III												
Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs/ Week	Credits	Evaluation Scheme (Components)			
1	PC	UDSPC0301	Discrete Mathematics and Graph Theory	3	1	-	4	4	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
2	PC	UDSPC0302	Linear Algebra	3	-	-	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
3	PC	UDSPC0303	Advanced Data Structures	3	-	-	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
4	PC	UDSPC0304	Database Management System	3	-	-	3	3	ISE1	10	20	40
									MSE	30		
									ISE2	10		
									ESE	50		
5	VEC	UDSVE0305	Constitution of India	2	-	-	2	2	ISE	50	20	20
6	HSSM	UDSEM0306	Principles of AIDS	2	-	-	2	2	ESE	50	20	20
7	PC	UDSPC0331	Advanced Data Structures Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	50	20	
8	PC	UDSPC0332	Database Management System Laboratory			2	2	1	ISE	25	10	
									ESE (POE)	25	10	
9	PC	UDSPC0333	Software System Tools Laboratory			2	2	1	ISE	25	10	
10	OJT	UDSIL0371	Mini Project-I			2	2	1	ISE	50	20	
11	MM	UDSMM03**	MM-1	2			2	2	ESE	100	40	
			Total:				27	23	Total Marks: 800 Total Credit: 23			

SEMESTER IV

SEMESTER IV												
Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs/ Week	Credits	Evaluation Scheme (Components)			
1	PC	UDSPC0401	Computer Networks	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	PC	UDSPC0402	Automata Theory	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	PC	UDSPC0403	Design And Analysis of Algorithms	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	PC	UDSPC0404	Statistics and Probability	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	PC	UDSPC0405	Object Oriented Programming in Java	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
6	VEC	UDSVE0406	Environmental Studies	2	-	-	2	2	ISE	50	20	20
7	PC	UDSPC0431	Object Oriented Programming Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
8	PC	UDSPC0432	Data Analytics & Visualization Tools Laboratory	-	-	2	2	1	ISE	25	10	
9	OJT	UDSIL0471	Mini Project-II	-	-	2	2	1	ISE	25	10	
10	VSEC	UDSVS0433	AI DS Tools Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
11	CC	UDSCC0434	Co-curricular Activities-II	-	-	2	2	1	ISE	50	20	
12	MM	UDSMM04**	MM-2	3	-		3	3	ESE	100	40	
			Total:				28	23	Total Marks: 850 Total Credit: 23			

SEMESTER V

SEMESTER V												
Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs/ Week	Credits	Evaluation Scheme (Components)			
1	PC	UDSPC0501	Machine Learning	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	PC	UDSPC0502	Computer Organization and Operating System	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	PC	UDSPC0503	Exploratory Data Analytics	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	PE	UDSPE05**	Program Elective-I	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	OE	UDSOE0521	Open Elective-I	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
6	HSSM	UDSAE0534	Business Communication and Value Science	-	-	2	2	1	ISE	50	20	20
7	PC	UDSPC0531	Machine Learning Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
8	PC	UDSPC0532	Advanced Java Programming Laboratory	-	-	2	2	1	ISE	25	10	
10	VSEC	UDSVS0533	Exploratory Data Analytics Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
11	CEP	UDSIL0571	Mini Project (Android)-III	-	-	2	2	1	ISE	25	10	
12	MM	UDSMM05**	MM-3	3	-	-	3	3	ESE	100	40	
			Total:				27	22	Total Marks: 800 Total Credit: 22			

SEMESTER VI												
Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs/ Week	Credits	Evaluation Scheme (Components)			
1	PC	UDSPC0601	Deep Learning	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	PC	UDSPC0602	Natural Language Processing	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	PC	UDSPC0603	Image Processing & Computer Vision	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	PE	UDSPE06**	Program Elective-II	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	OE	UDSOE0621	Open Elective-II	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
6	HSSM	UDSEM0604	Software Engineering & Project Management	2	-	-	2	2	ESE	50	20	20
7	PC	UDSPC0631	Deep Learning Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
8	PC	UDSPC0632	Image Processing & Computer Vision Laboratory	-	-	2	2	1	ISE	25	10	
9	PC	UDSPC0633	Advanced Web Development Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
10	CEP	UDSIL0671	Mini Project -IV	-	-	2	2	1	ISE	25	10	
11	CC	UDSCC0634	Co-curricular Activities-III	-	-	2	2	1	ISE	50	20	
12	MM	UDSMM06**	MM-4	3	-	-	3	3	ESE	100	40	
			Total:				29	24	Total Marks: 850 Total Credit: 24			

SEMESTER VII

Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs/ Week	Credits	Evaluation Scheme (Components)			
1	PC	UDSPC0701	Cyber and Blockchain Security	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	PC	UDSPC0702	Generative and Agentic AI	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	PC	UDSPC0703	ML DevOps	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
4	PE	UDSPE07**	Program Elective-III	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
5	OE	UDSOE0721	Open Elective-III	2	-	-	2	2	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
6	PC	UDSPC0731	Generative and Agentic AI Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
7	PC	UDSPC0732	ML DevOps Laboratory	-	-	2	2	1	ISE	25	10	
									ESE (POE)	25	10	
8	RM	UDSIL0771	Project-I	-	-	2	2	4	ISE I	50		40
									ESE (OE)	50		
12	MM	UDSMM07**	MM-5	3	-	-	3	3	ESE	100	40	
			Total:				23	23	Total Marks: 800 Total Credit: 23			

SEMESTER VIII												
Sr. No.	Category	Course Code	Course Name	L	T	P	Hrs/Week	Credits	Evaluation Scheme (Components)			
1	PE	UDSPE08**	Program Elective-IV	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
2	OE	UDSPE08**	Program Elective-V	3	-	-	3	3	ISE1	10		40
									MSE	30		
									ISE2	10		
									ESE	50	20	
3	RM	UDSIL0871	Project-II	-	-	8	8	4	ISE I	50		40
									ESE (OE)	50		
4	OJT	UDSIL0872	Internship	-	-	12	12	6	ISE I	75		75
									ISE II	75		
5	CC	UDSCC0831	Co-curricular Activities-IV	-	-	2	2	1	ISE	50		20
			Total:				28	17	Total Marks: 500 Total Credit: 17			

PC: PROGRAM CORE							
Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSPC0301	Discrete Mathematics and Graph Theory	3	1	-	4	4
2	UDSPC0302	Linear Algebra	3	-	-	3	3
3	UDSPC0303	Advanced Data Structures	3	-	-	3	3
4	UDSPC0304	Database Management System	3	-	-	3	3
5	UDSPC0331	Advanced Data Structures Laboratory	-	-	2	2	1
6	UDSPC0332	Database Management System Laboratory	-	-	2	2	1
7	UDSPC0333	Software System Tools Laboratory	-	-	2	2	1
8	UDSPC0401	Computer Networks	2	-	-	2	2
9	UDSPC0402	Automata Theory	3	-	-	3	3
10	UDSPC0403	Design And Analysis of Algorithms	3	-	-	3	3
11	UDSPC0404	Statistics and Probability	3	-	-	3	3
12	UDSPC0405	Object Oriented Programming in Java	2	-	-	2	2
13	UDSPC0431	Object Oriented Programming Laboratory	-	-	2	2	1
14	UDSPC0432	Data Analytics & Visualization Tools Laboratory	-	-	2	2	1
15	UDSPC0501	Machine Learning	3	-	-	3	3
16	UDSPC0502	Computer Organization and Operating System	2	-	-	2	2
17	UDSPC0503	Exploratory Data Analytics	3	-	-	3	3
18	UDSPC0531	Machine Learning Laboratory	-	-	2	2	1
19	UDSPC0532	Advanced Java Programming Laboratory	-	-	2	2	1
20	UDSPC0601	Deep Learning	3	-	-	3	3
21	UDSPC0602	Natural Language Processing	2	-	-	2	2
22	UDSPC0603	Image processing & Computer Vision	3	-	-	3	3
23	UDSPC0631	Deep Learning Laboratory	-	-	2	2	1
24	UDSPC0632	Image processing & Computer Vision Laboratory	-	-	2	2	1
25	UDSPC0633	Advanced Web Development Laboratory	-	-	2	2	1
26	UDSPC0701	Information Security	3	-	-	3	3
27	UDSPC0702	Generative AI	3	-	-	3	3
28	UDSPC0703	Internet of Things & Cloud Computing	3	-	-	3	3
29	UDSPC0731	Advanced Deep Learning Laboratory	-	-	2	2	1
30	UDSPC0732	ML DevOps Laboratory	-	-	2	2	1
		Total:				75	63

PE: PROGRAM ELECTIVE– I							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSPE0511	Human Computer Interaction (UI/UX) (PE-I)	3	-	-	3	3
2	UDSPE0512	Intelligent Robot (PE-I)	3	-	-	3	3
3	UDSPE0513	Storage Area Networks (PE-I)	3	-	-	3	3

PE: PROGRAM ELECTIVE - II							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSPE0611	Business Intelligence (PE-II)	3	-	-	3	3
2	UDSPE0612	Introduction to Augmented Reality Virtual Reality (ARVR) (PE-II)	3	-	-	3	3
3	UDSPE0613	Robotics Process Automation (PE-II)	3	-	-	3	3

PE: PROGRAM ELECTIVE - III							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSPE0711	Data and Storytelling (PE-III)	3	-	-	3	3
2	UDSPE0712	Time Series Analysis (PE-III)	3	-	-	3	3
3	UDSPE0713	Big Data Analytics (PE-III)	3	-	-	3	3

PE: PROGRAM ELECTIVE - IV							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSPE0811	Ethics in AI (PE-IV)	3	-	-	3	3
2	UDSPE0812	Introduction to Quantum Computing (PE-IV)	3	-	-	3	3
3	UDSPE0813	Edge and Fog Computing (PE-IV)	3	-	-	3	3

PE: PROGRAM ELECTIVE - V							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSPE0814	AI in Healthcare (PE-V)	3	-	-	3	3
2	UDSPE0815	Reinforcement Learning (PE- V)	3	-	-	3	3

MM: Multi-Disciplinary Minor Courses - Biomedical Engineering (Basket 1)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSMM0341	Basics of Biomedical Engineering (MM-I)	2	-	-	2	2
2	UDSMM0441	Biostatistics and Algorithms (MM-II)	3	-	-	3	3
3	UDSMM0541	Soft Computing (MM-III)	3	-	-	3	3
4	UDSMM0641	Medical Image Analysis (MM-IV)	3	-	-	3	3
5	UDSMM0741	AI based Medical Automation (MM-V)	3	-	-	3	3
Total:						14	14

MM: Multi-Disciplinary Minor Courses - Finance Engineering (Basket 2)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSMM0342	Fundamentals of Finance for Engineering (MM-I)	2	-	-	2	2
2	UDSMM0442	Blockchain Technologies and FinTech (MM-II)	3	-	-	3	3
3	UDSMM0542	Time Series Analysis (MM-III)	3	-	-	3	3
4	UDSMM0642	Machine Learning for Finance (MM-IV)	3	-	-	3	3
5	UDSMM0742	Deep Learning for Finance (MM-V)	3	-	-	3	3
Total:						14	14

MM: Multi-Disciplinary Minor Courses - Embedded Systems (Basket 3)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSMM0343	Digital Electronics (MM-I)	2	-	-	2	2
2	UDSMM0443	Microprocessor and Microcontrollers (MM-II)	3	-	-	3	3
3	UDSMM0543	Embedded Systems (MM-III)	3	-	-	3	3
4	UDSMN0643	IoT with Arduino and Raspberry Pi (MM-IV)	3	-	-	3	3
5	UDSMM0743	AI in Embedded Systems (MM-V)	3	-	-	3	3
Total:						14	14

VS: VOCATIONAL AND SKILL ENHANCEMENT COURSE							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSVS0433	AI DS Tools Laboratory	-	-	2	2	1
2	UDSVS0533	Exploratory Data Analytics Laboratory	-	-	2	2	1

AE: ABILITY ENHANCEMENT COURSE							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSAE0534	Business Communication and Value Science	-	-	2	2	1

EM: ENTREPRENEURSHIP /ECONOMICS/ MANAGEMENT COURSES							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSEM0306	Principles of AIML	2	-	-	2	2
2	UDSEM0604	Software Engineering & Project Management	2	-	-	2	2

VE: VALUE EDUCATION COURSE							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSVE0305	Constitution of India	2	-	-	2	2
2	UDSVE0406	Environmental Studies	2	-	-	2	2

IL: RESEARCH METHODOLOGY (PROJECT)							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSIL0771	Project-I	-	-	2	2	4

IL: COMMUNITY ENGINEERING PROJECT / FIELD PROJECT (PBL/SEMINAR/MINI-PROJECT)							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSIL0571	Mini Project (Android)-III	-	-	2	2	1
2	UDSIL0671	Mini Project -IV	-	-	2	2	1

IL: PROJECT							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSIL0871	Project-II	-	-	2	2	4

IL: INTERNSHIP/ON JOB TRAINING							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSIL0371	Mini Project-I	-	-	2	2	1
2	UDSIL0471	Mini Project-II	-	-	2	2	1
3	UDSIL0872	Internship	-	-	12	12	6

CC: CO-CURRICULAR COURSES							
Sr. No.	Course Code	Course Name	L	T	P	Hrs./ Week	Credits
1	UDSCC0434	Co-curricular Activities-II	-	-	2	2	1
2	UDSCC0634	Co-curricular Activities-III	-	-	2	2	1
3	UDSCC0831	Co-curricular Activities-IV			2	2	1

EX: EXIT COURSES - SY							
Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSEX0491	Certified Web Developer	3	-	-	3	3
2	UDSEX0492	Foundation Course in Machine Learning Using Python	3	-	-	3	3
3	UDSEX0493	Training	2	-	-	2	2
		Total:				8	8

EX: EXIT COURSES - TY							
Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSEX0691	Foundation Course in Artificial Intelligence Applications	3	-	-	3	3
2	UDSEX0692	Foundation Course in Information Security	3	-	-	3	3
3	UDSEX0693	Training	2	-	-	2	2
		Total:				8	8

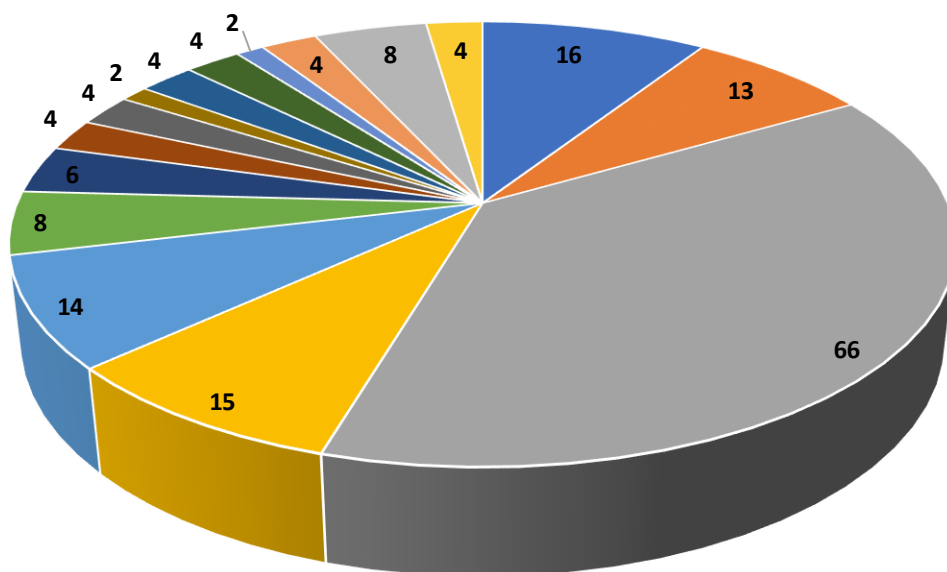
HN: B. TECH HONORS (CYBER SECURITY)

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSHN0351	Fundamentals of Cyber Security	3	1	-	4	4
2	UDSHN0451	Applied Cryptography	3	1	-	4	4
3	UDSHN0551	Ethical Hacking	3	1	-	4	4
4	UDSHN0651	Blockchain Technology	3	1	-	4	4
5	UDSHN0751	Mini Project	2	-	-	2	2
Total:						18	18

MN: Emerging Minor Specialization Courses

Sr. No.	Course Code	Course Name	L	T	P	Hrs. / Week	Credits
1	UDSMN0361	Learning Analytics	3	1	-	4	4
2	UDSMN0461	ML DevOps	3	1	-	4	4
3	UDSMN0561	Advanced Deep Learning	3	1	-	4	4
4	UDSMN0661	Generative AI	3	1	-	4	4
5	UDSMN0761	Vision Transformer	2	-	-	2	2
Total:						18	18

Credit Distribution



- Basic Science course
- Engineering Science course
- Programme Core Courses
- Programme Elective Course
- Multi Minor
- Open elective
- Vocational and Skill Enhancement course
- Ability enhancement course
- Entrepreneurship /Economics/ Management courses (Mgt/Economics/Mkt/Finance)
- Indian knowledge system
- Value Education course
- Research Methodology (Project)
- Comm. Engg Project/Field Project (PBL/Seminar/Mini Project)
- Project
- Internship/OJT (PBL/Seminar/Mini Project/Virtual Internship/Physical)
- Co-curricular courses

Pie chart showing the distribution of credits