KOLHAPUR INSTITUTE
OF TECHNOLOGY'S
COLLEGE OF
ENGINEERING
(AUTONOMOUS),
KOLHAPUR

Structure for

B.Tech in

Computer Science & Engineering (Data Science)
(To be Implemented w.e.f. Academic Year 2022-23)

Department of Computer Science & Engineering (Data Science)

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

Dr. U. P. Gurav
Head, Department of CSE(Data Science)

Prof. A. S. Patil
Dean Academics

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Kolhapur Institute of Technology's
College of Engineering (Autonomous), Kolhapur
Teaching and Evaluation scheme for

Second Year B. Tech. Program in Computer Science & Engineering (DS) Semester-III

Course Code	Course Name	Curriculum Component	L	T	P	Credits	Component	Max	Min for Passing	
			Hours/Week				Evaluation Scheme			
									Marks	
UDSC0301	Linear Algebra	BS	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0302	Discrete Mathematics	ES	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0303	Data Structures	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0304	Principles of Data Science	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0305	Object Oriented Programming	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0306	Software Engineering	ES	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10	20	
							ESE	50		
UDSC0331	Data Structures-Lab	PC	-	-	2	1	ISE	25	10	30
							ESE (POE)	50	20	
UDSC0332	Object Oriented Programming-Lab	PC	-	-	2	1	ISE	25	10	30
							ESE (POE)	50	20	
UDSA0361	Constitution of India	Audit Course	2	-	-	-	ESE	100	40	
								750		
			20	2	4	22	600 + 150 = 750 + Audit Course			

Total Credits - 22, Total Contact hours – 26

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Teaching and Evaluation scheme for

Second Year B. Tech. Program in Computer Science & Engineering (DS) Semester-IV

Course Code	Course Name	Curriculum Component	L	T	P	Credits	Component	Max	Min for Passing	
UDSC0401	Statistical and Probability Theory	BS	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0402	Automata Theory	ES	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0403	Computer Networks	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE*	50	20	
UDSC0404	Computer Organization and Digital Logic	PC	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0405	Principles of AIML	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0431	Computer Networks-Lab	PC	-	-	2	1	ISE	25	10	20
							ESE(OE)	25	10	
UDSC0432	Data Analytics and Visualization-Lab	PC	-	-	2	1	ISE	25	10	30
							ESE (POE)	50	20	
UDSC0433	AI and DS Tools- Lab	PC	-	-	2	1	ISE	25	10	30
							ESE (POE)	50	20	
UDSC0451	Mini Project – I	PW	-	-	2	1	ISE-I	25	20	
							ISE-II	25		
UDSA0461	Environmental Studies	Audit Course	2	-	-	-	ESE	100	40	
								750		
			17	3	8	22	500 + 250 = 750 + Audit Course			

Total Credits - 22, Total Contact hours – 28

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Teaching and Evaluation scheme for

Third Year B. Tech. Program in Computer Science & Engineering (DS) Semester–V

Course Code	Course Name	Curriculum Component	L	T	P	Credits	Component	Max	Min for Passing	
UDSC0501	Operating System	PC	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0502	Database Management System	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0503	Exploratory Data Analysis	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSE05**	Program Elective - I	PE	3		-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSO05**	Open Elective - I	OE	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0531	Database Management System lab	PC	-	-	2	1	ISE	25	10	30
							ESE(POE)	50	20	
UDSC0532	Exploratory Data Analysis Lab	PC	-	-	2	1	ISE	25	10	20
							ESE (OE)	25	10	
UDSC0533	Web Technology Lab	PC	2	-	2	3	ISE	25	10	30
							ESE (POE)	50	20	
UDSC0551	Mini Project-II	PW	-	-	2	1	ISE-I	25	20	
							ISE-II	25		
UDSA0561	Software Systems Tools	Audit Course	2	-	-	-	ISE-I	50	40	
							ISE-II	50		
								750		
			19	1	8	22	500 + 250 = 750 + Audit Course			

Total Credits - 22, Total Contact hours – 28

Program Elective – I (PE-I)		Open Elective – I (OE-I)	
UDSE0521	Information Security System	UDSO0511	Introduction to Data Science
UDSE0522	Project Management	UDSO0512	Python for Data Science
UDSE0523	Internet of Things		

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Teaching and Evaluation scheme for

Third Year B. Tech. Program in Computer Science & Engineering (DS) Semester–VI

Course Code	Course Name	Curriculum Component	L	T	P	Credits	Components	Max	Min for Passing	
UDSC0601	Optimization for Data Science	PC	3	1	-	4	ISE-I	10	20	40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UDSC0602	Design and Analysis of Algorithms	PC	3	1	-	4	ISE-I	10	20	40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UDSC0603	Machine Learning	PC	3	-	-	3	ISE-I	10	20	40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UDSE06**	Program Elective - II	PE	3	-	-	3	ISE-I	10	20	40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UDSO06**	Open Elective - II	OE	3	-	-	3	ISE-I	10	20	40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UDSC0631	Advanced Program ming Lab.	PC	1	-	2	2	ISE	25	10	30
							ESE(POE)	50	20	
UDSE063*	Program Elective Lab-II	PC	-	-	2	1	ISE	25	10	30
							ESE (POE)	50	20	
UDSC0632	Machine Learning Lab	PC	-	-	2	1	ISE	25	10	20
							ESE (OE)	25	10	
UDSC0651	Mini Project - III	PW	-	-	2	1	ISE-I	25	20	
							ISE-II	25		
UDSA0661	Intellectual Property Rights	Audit Course	2	-	-	-	ESE	100	40	
								750		
			18	2	8	22	500 + 250 = 750 + Audit Course			

Total Credits - 22, Total Contact hours – 28

Program Elective – II (PE-II)		Open Elective – II (OE-II)	
UDSE0621	Advanced Database System	UDSO0613	Data Analytics
UDSE0633	Advanced Database System-Lab	UDSO0614	Introduction to Database Management System
UDSE0622	STQA		
UDSE0634	STQA-Lab		
UDSE0623	Business Intelligence System		
UDSE0635	Business Intelligence System-Lab		

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Teaching and Evaluation scheme for

Final Year B. Tech. Program in Computer Science & Engineering(DS) Semester-VII

Course Code	Course Name	Curriculum Component	Teaching Scheme				Evaluation Scheme			
			L	T	P	Credits	Components	Max	Min for Passing	
UDSC0701	Image Processing & Video Analytics	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0702	Big Data Analytics	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0703	Deep Learning	PC	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE *	50	20	
UDSC0704	Cloud Computing	PC	3	1	-	4	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSE07**	Program Elective - III	PE	3	-	-	3	ISE I	10	20	40
							MSE	30		
							ISE II	10		
							ESE	50	20	
UDSC0731	Mobile App Development-lab	PC	-	-	2	1	ISE	25	10	30
							ESE(POE)	50	20	
UDSC0732	Image Processing & Video Analytics - Lab	PC	-	-	2	1	ISE	25	10	30
							ESE (OE)	50	20	
UDSC0751	Project Phase - I	PW	-	-	4	2	ISE-I	50	20	40
							ISE-II	50	20	
UDSA0761	Project Management Tools	Audit Course	2	-	-	-	ISE-I	50	40	
							ISE-II	50		
			15	1	8	20	500 + 250 = 750 + Audit Course			

Total Credits – 20, Total Contact hours – 24

Sr. No.	Program Elective III (PE-III)
UDSE0721	Computer Vision
UDSE0722	Time Series Analysis
UDSE0723	Soft Computing
UDSE0724	BlockChain

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Teaching and Evaluation scheme for
Final Year B. Tech. Program in Computer Science & Engineering(DS) Semester-VIII

Course Code	Course Name	Curriculum Component	Teaching Scheme				Evaluation Scheme			
			L	T	P	Credits	Components	Max	Min for Passing	
UDSC0851	Project Phase - II	PW	-	-	8	4	ISE I	50	40	40
							ISE II	50		
							ESE(OE)	100	40	
UDSC0852	Internship	PW	-	-	4	2	ISE-I	50	20	40
							ISE-II	50	20	
UDSE08**	Program Elective - IV	PE	3	-	-	3	ISE-I	10	20	40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
UDSE08**	Program Elective - V	PE	3	-	-	3	ISE-I	10	20	40
							ISE-II	10		
							MSE	30		
							ESE	50	20	
			6	-	12	12	200 + 100 + 200 = 500			

Total Credits-12, Total Contact hours – 18

Program Elective – IV (PE-IV)		Program Elective – V (PE-V)	
UDSE0821	Security Scripting and Analysis	UDSE0823	Text Analytics
UDSE0822	Social Media and Digital Marketing Analysis	UDSE0824	Web Analytics

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B. Tech. Program in Computer Science and Engineering(Data Science)

Total Credits Distribution from F.Y.B.Tech to Final Year B.Tech in Computer Science & Engineering (DS)
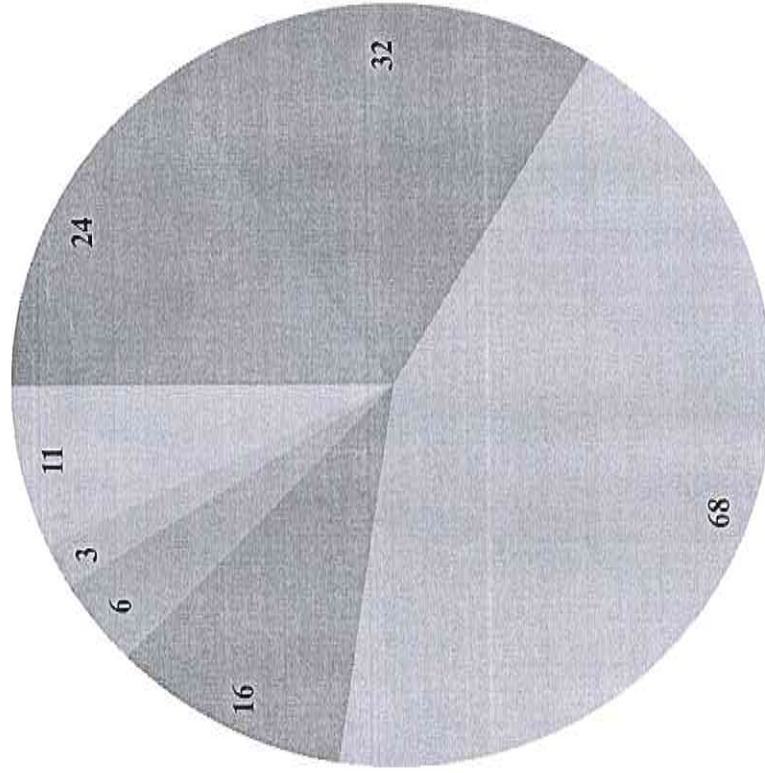
Component	F.Y.B.Tech		S.Y.B.Tech		T.Y.B.Tech		Final Year B.Tech		Total Credits	Percentage Distribution
	Sem I	Sem II	Sem III	Sem IV	Sem V	Sem VI	Sem VII	Sem VIII		
Basic Sciences (BS)	8	8	4	4	-	-	-	-	24	15.00
Engineering Sciences (ES)	9	12	7	4	-	-	-	-	32	20.00
Program Core (PC)	-	-	11	13	15	14	15	-	68	42.50
Program Elective (PE)	-	-	-	-	3	4	3	6	16	10.00
Open Elective (OE)	-	-	-	-	3	3	-	-	6	3.75
Mandatory Audit Course (MAC)	UHV	ED	CI	EVS	SS	IPR	PMT	-	Non-Credit Courses	-
Humanities (HS)	3	-	-	-	-	-	-	-	3	1.88
Project Work (PW)	-	-	-	1	1	1	2	4+2	11	6.88
Total Credits	20	20	22	22	22	22	20	12	160	100.00

Note for Mandatory Audit Courses (MAC):

UHV: Universal Human Values (HS), ED: Entrepreneurship Development (HS), EVS: Environmental Studies (BS), CI: Constitution of India (HS),

SS: Software Systems (PC), IPR: Intellactual Property Rights (HS), PMT: Project Management Tools (PC)

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Total Credits Distribution from F.Y.B.Tech to Final Year B.Tech in Computer Science & Engineering(DS)
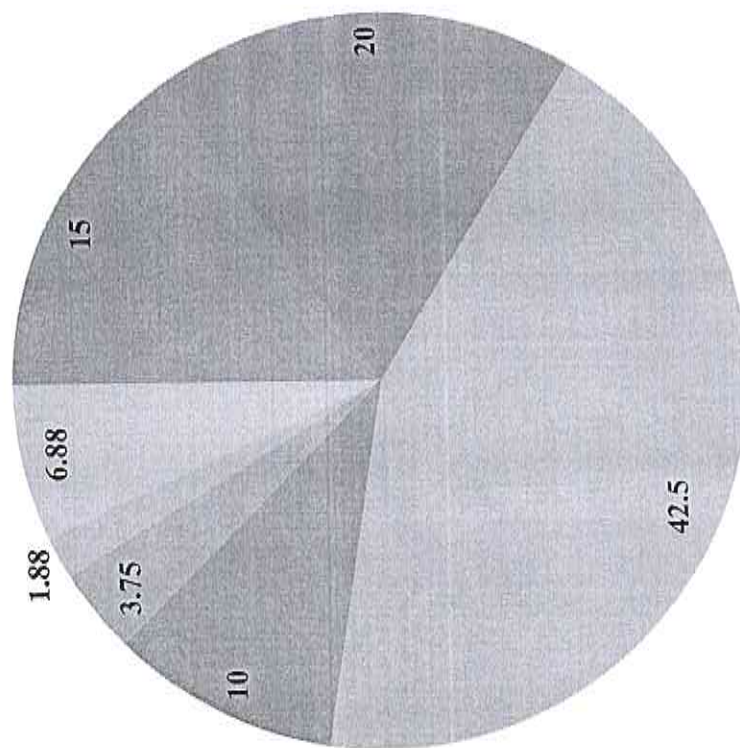

Legend:
- Basic Sciences (BS)
- Engineering Sciences (ES)
- Program Core (PC)
- Program Elective (PE)
- Open Elective (OE)
- Humanities (HS)
- Project Work (PW)

Pie chart values: 32, 24, 11, 3, 6, 16, 68

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Total Credits (%) Distribution from F.Y.B.Tech to Final Year B.Tech in Computer Science & Engineering(DS)

Legend:
- Basic Sciences (BS)
- Engineering Sciences (ES)
- Program Core (PC)
- Program Elective (PE)
- Open Elective (OE)
- Humanities (HS)
- Project Work (PW)

Pie chart values: 20, 15, 6.88, 1.88, 3.75, 10, 42.5

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