

Faculty of Engineering, School of Information Technology
 Department of Data Science & Engineering
 Degree: B. Tech. Computer Science & Engineering (Data Science)
 Total Credit: 160

Third Semester						Fourth Semester					
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
MEE2201	Engineering Economics	3	0	0	3	MAS2101	Statistics & Probability	3	0	0	3
MBB2102	Management of Technology	3	0	0	3	DSE2201	Relational Database Management Systems	3	1	0	4
DSE2101	Data Structures & Algorithms	3	1	0	4	DSE2202	Computer Networks	3	1	0	4
DSE2102	Computer System Architecture	3	1	0	4	DSE2220 / DSE2221	Machine Learning / Data Analytics and Visualization	3	1	0	4
DSE2103	Data Mining	3	1	0	4	DSE2240 / DSE2241	Cloud Computing / Digital Image Processing	3	0	0	3
DSE2120 / DSE2121	Object Oriented Programming / Object Oriented Programming using Python	3	1	0	4	XXX00XX	Open Elective 1	3	0	0	3
DSE2130	Data Mining Lab	0	0	2	1	DSE2230	Relational Database Management Systems Lab	0	0	2	1
DSE2131	Data Structures & Algorithms Lab	0	0	2	1	DSE2231	Computer Networks Lab	0	0	2	1
DSE2170	Project-based Learning 1	0	0	2	1	DSE2270	Project-based Learning 2	0	0	2	1
		18	4	6	25			18	3	6	24
	Total Contact Hours (L+T+P)	28					Total Contact Hours (L+T+P)	27			

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Fifth Semester						Sixth Semester					
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
DSE3101	Design and Analysis of Algorithms	3	1	0	4	DSE3201	Software Engineering	3	1	0	4
DSE3102	Operating Systems	3	1	0	4	DSE3240 / DSE3241	Social Network Analysis / Data Forensics	3	0	0	3
DSE3120 / DSE3121	Deep Learning / Healthcare Data Analytics & Cognitive Intelligence	3	1	0	4	DSE3250 / DSE3251	Soft Computing Techniques / Web Technologies	3	0	0	3
DSE3140 / DSE3141	Computer Vision / NoSQL Database	3	0	0	3	DSE3260 / DSE3261	Big Data Analytics / Generative AI	3	0	0	3
DSE3150 / DSE3151	Theory of Computation / Graph Visualization	3	0	0	3	XXX00XX	Open Elective 3	3	0	0	3
XXX00XX	Open Elective 2	3	0	0	3	DSE3202	Professional Practice (Do the Coding as per the core course)	0	0	2	1
DSE3130	Design and Analysis of Algorithms Lab	0	0	2	1	DSE3230	Software Engineering Lab	0	0	2	1
DSE3131	Operating Systems Lab	0	0	2	1	DSE3231	Data Science Lab	0	0	2	1
DSE3170	Project-based Learning 3	0	0	2	1	DSE3270	Project-based Learning 4	0	0	2	3
		18	3	6	24			15	1	8	22
	Total Contact Hours (L+T+P)	27					Total Contact Hours (L+T+P)	24			

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Seventh Semester						Eighth Semester					
Code	Subject Name	L	T	P	C	Code	Subject Name	L	T	P	C
DSE4140 / DSE4141	Business Process Mining / Software Defined Networks	3	0	0	3	DSE4270	Major Project	0	0	0	12
DSE4150 / DSE4151	Natural Language Processing / Nature Inspired Optimization Algorithms	3	0	0	3						
XXX00XX	Open Elective 4	3	0	0	3						
XXX00XX	Open Elective 5	3	0	0	3						
DSE4170	Internship (Industry or Research)	0	0	2	1						
		12	0	2	13			0	0	0	12
	Total Contact Hours (L+T+P)	14					Total Contact Hours (L+T+P)	0			

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Flexi Core

Flexi Core 1	Flexi Core 2	Flexi Core 3
DSE2120 Object Oriented Programming DSE2121 Object Oriented Programming using Python	DSE2220 Machine Learning DSE2221 Data Analytics and Visualization	DSE3120 Deep Learning DSE3121 Healthcare Data Analytics & Cognitive Intelligence

Program Electives			
IV	V	VI	VII
PE1 <ul style="list-style-type: none"> DSE2240: Cloud Computing DSE2241: Digital Image Processing 	PE2 <ul style="list-style-type: none"> DSE3140: Computer Vision DSE3141: NoSQL Database PE3 <ul style="list-style-type: none"> DSE3150: Theory of Computation DSE3151: Graph Visualization 	PE4 <ul style="list-style-type: none"> DSE3240: Social Network Analysis DSE3241: Data Forensics PE5 <ul style="list-style-type: none"> DSE3250: Soft Computing Techniques DSE3251: Web Technologies PE6 <ul style="list-style-type: none"> DSE3260: Big Data Analytics DSE3261: Generative AI 	PE7 <ul style="list-style-type: none"> DSE4140: Business Process Mining DSE4141: Software Defined Networks PE8 <ul style="list-style-type: none"> DSE4150: Natural Language Processing DSE4151: Nature Inspired Optimization Algorithms

Open Electives

Graded OE	
OE1 DSE0001: Introduction to Data Analytics OE2 DSE0002: Introduction to Python Programming OE3 DSE0003: Introduction to Data Visualization Techniques OE4 DSE0004: Soft Computing Techniques OE5 DSE0005: Cyber Crimes and its Measures	