

Intake:		2020 onwards		Specialization:		Computer Science & Engineering					
Details of the Curriculum				Stream:		Cyber Security					
Module Code	Module Name	Category C/E/O	Time allocation [Hours/Week]		Credits offered		Norm		Evaluation %		
			Lecture	Lab / Tute	GPA	NGPA	GPA	NGPA	CA	WE	
Semester 1		Specialization requirement				15.0					
MA1014	Mathematics	C	5/2	1	3.0		15.0		20	80	
CS1033	Programming Fundamentals	C	2	2	3.0				20	80	
ME1033	Mechanics	C	2	2/4	2.0				20	80	
MT1023	Properties of Materials	C	2	2/4	2.0				20	80	
CE1023	Fluid Mechanics	C	2	2/4	2.0				20	80	
EE1040	Electrical Fundamentals	C	2	2/4	2.0				20	80	
EL1030	Language Skills Enhancement [S1 & S2]	C	0	2	1.0				100	0	
Total					15.0	0.0	15.0	0.0			
Semester 2		Specialization requirement				18.0					
MA1024	Methods of Mathematics	C	5/2	1	3.0		18.0		30	70	
EE2094	Theory of Electricity	C	2	2	3.0				30	70	
EL1030	Language Skills Enhancement [S1 & S2]	C	0	2	1.0				100	0	
CS2953	Communication Skills [S2 & S3]	C	1	2	2.0				80	20	
CS2023	Data Structures and Algorithms	C	2	2	3.0				40	60	
CS1040	Program Construction	C	2	2	3.0				60	40	
CS1050	Computer Organization and Digital Design	C	2	2	3.0				30	70	
Total					18.0	0.0	18.0	0.0			
Semester 3		Specialization requirement				23.0					
MA2014	Differential Equations	C	2	0	2.0		23		30	70	
MA3014	Applied Statistics	C	2	0	2.0				30	70	
ME1823	Fundamentals of Engineering Thermodynamics and Applications	C	5/2	2/2	3.0				30	70	
CS2953	Communication Skills [S2 & S3]	C	0	2	1.0				100		
CS2033	Data Communication and Networking	C	2	2	3.0				40	60	
CS2043	Operating Systems	C	2	2	3.0				40	60	
CS2053	Computer Architecture	C	2	2	3.0				40	60	
CS3043	Database Systems	C	2	2	3.0				50	50	
CS3613	Introduction to Artificial Intelligence	C	2	2	3.0			40	60		
Total					23.0	0	23	0			
Semester 4		Specialization requirement				20.0					
MA2034	Linear Algebra	C	2	0	2.0		18.0		30	70	
MA2054	Graph Theory	C	2	0	2.0				30	70	
CS3023	Software Engineering	C	2	2	3.0				50	50	
CS3033	Computer Networks	C	2	2	3.0				40	60	
CS3063	Theory of Computing	C	2	0	2.0				30	70	
CS3243	IoT Devices and Applications	C	2	2	3.0				30	70	
CS3460	Operating Systems Security	C	2	2	3.0				40	60	
HM-1	Humanities Elective I	E			2.0		2.0				
Total					20.0	0.0	20.0	0.0			

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Semester 5				Specialization requirement				22.0					
MA3030	Operational Research	C	2	0	2.0	19.0		30	70				
MA3024	Numerical Methods	C	2	0	2.0			30	70				
MA2024	Calculus	C	2	0	2.0			30	70				
CS3880	Engineer and Society [S5 & S6]	C	0	2	1.0			100					
MN3043	Business Economics and Financial Accounting	C	3	0	3.0			30	70				
CS3053	Computer Security	C	2	0	2.0			30	70				
CS3480	Principles of Secure Application Development	C	2	2	3.0			40	60				
CS3400	Cyber Security Project	C	2	4	4.0			100					
CS3213	Advanced Software Engineering	E	2	2	3.0		3.0	50	50				
CS3413	Advanced Networking	E	2	2	3.0			40	60				
CS3713	Image Processing	E	2	2	3.0	40		60					
				Total				28.0	0.0	22.0	0.0		
Industrial Training				Specialization requirement				6.0					
CS3993	Industrial Training	C			6.0		6.0	100					
				Total				0.0	6.0	0	6		
Semester 6				Specialization requirement				9.0					
CS3880	Engineer and Society [S5 & S6]	C	1	2	2.0	7.0	100						
CS3940	Professional Portfolio	C	1	2	2.0		100						
CS4243	Human Computer Interaction	C	2	2	3.0		50	50					
HM-2	Humanities Elective II	E			2.0	2.0							
				Total				9.0	0.0	9.0	0.0		
Semester 7				Specialization requirement				19.0					
MN4063	Organizational Behavior and Management	C	2		2.0	13.0	30	70					
CS4203	Research and Development Project [S7 & S8]	C			5.0		100						
CS4453	Information Security & Cryptography	C	2	2	3.0		50	50					
CS4463	Computer and Network Security	C	2	2	3.0		40	60					
CS4223	Software Process and Management	E	2	2	3.0		50	50					
CS4253	Advanced Operating Systems	E	2	2	3.0		50	50					
CS4273	Quality Engineering	E	2	2	3.0		50	50					
CS4343	Advanced Computer Architecture	E	2	2	3.0		40	60					
CS4363	Hardware Description Languages	E	2	2	3.0		40	60					
CS4373	Machine Vision	E	2	2	3.0		40	60					
CS4433	Network and System Administration	E	2	2	3.0	40	60						
CS4473	Mobile Computing	E	2	2	3.0	50	50						
CS4523	Advanced Algorithms	E	2	2	3.0	40	60						
CS4533	Parallel and Concurrent Programming	E	2	2	3.0	6.0	40	60					
CS4543	Compiler Design	E	2	2	3.0		40	60					
CS4553	Scientific Computing	E	2	2	3.0		40	60					
CS4580	Advanced Data Structures	E	2	2	3.0		40	60					
CS4633	Database Internals	E	2	2	3.0		50	50					
CS4743	Bioinformatics	E	2	2	3.0		40	60					
CS3340	Robotics and Automation	E	2	2	3.0		50	50					
CS3111	Introduction to Machine Learning	E	2	2	3.0		40	60					
CS3121	Introduction to Data Science	E	2	2	3.0		40	60					
CS3621	Data Mining	E	2	2	3.0		40	60					
CS3631	Deep Neural Networks	E	2	2	3.0	40	60						
				Total				73.0	0.0	19.0	0.0		

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Semester 8		Specialization requirement					19.0			
MN4123	Human Resource Management & Industrial Relations	C	2.0		2.0		13.0	30	70	
CS4203	Research and Development Project [S7 & S8]	C			5.0			100		
CS4263	Distributed Systems	C	2.0	2	3.0			40	60	
CS4560	Cyber Security and Cyber Warfare	C	2.0	2	3.0			40	60	
CS4223	Software Process and Management	E	2.0	2	3.0			50	50	
CS4253	Advanced Operating Systems	E	2.0	2	3.0			50	50	
CS4273	Quality Engineering	E	2.0	2	3.0			50	50	
CS4343	Advanced Computer Architecture	E	2.0	2	3.0			40	60	
CS4363	Hardware Description Languages	E	2.0	2	3.0			40	60	
CS4373	Machine Vision	E	2.0	2	3.0			40	60	
CS4433	Network and System Administration	E	2.0	2	3.0			40	60	
CS4473	Mobile Computing	E	2.0	2	3.0			50	50	
CS4523	Advanced Algorithms	E	2.0	2	3.0			40	60	
CS4543	Compiler Design	E	2.0	2	3.0		40	60		
CS4553	Scientific Computing	E	2.0	2	3.0		40	60		
CS4580	Advanced Data Structures	E	2.0	2	3.0		40	60		
CS4633	Database Internals	E	2.0	2	3.0		50	50		
CS4743	Bioinformatics	E	2.0	2	3.0		40	60		
CS3340	Robotics and Automation	E	2.0	2	3.0		50	50		
CS3111	Introduction to Machine Learning	E	2.0	2	3.0		40	60		
CS3121	Introduction to Data Science	E	2.0	2	3.0		40	60		
CS3621	Data Mining	E	2.0	2	3.0		40	60		
CS3631	Deep Neural Networks	E	2.0	2	3.0		40	60		
		Total					70	0	19.0	0.0
		Grand Total					256.0	6.0	145.0	6.0

Total credit requirement for the Specialization		151.0
Faculty/Specialization Electives beyond the specialization requirements [refer faculty electives table]*		0
TOTAL CREDIT REQUIREMENT FOR GRADUATION		151.0

Service modules									
Code	Module Name	Semester	Time allocation [Hours/Week]		Credits		Offered to	Evaluation %	
			Lecture	Lab / Tute	GPA	NGPA		CA	WE
CS1811	Fundamentals of Programming	4	2	2	3		TLM	100	
CS2813	Visual Programming	3	1	2	2		ER,TT,MT	60	40
CS2843	Computer systems	2	2	2	3		EE	40	60
CS2833	Modular Software Development	4	2	2	3		EN,EE	50	50
CS2023	Data Structures and Algorithms	4	2	2	3		EN	40	60
CS3033	Computer Networks	5	2	2	3		EN,EE	40	60
CS2883	Object Oriented Programming for Mechanical Engineers	3	2	2	3		ME	100	