

Curriculum of B.Sc. Engineering Honours Degree Programme
Computer Science & Engineering Specialization - Computer Science & Engineering (CSE) Stream
Department of Computer Science & Engineering

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignm hrs/weeks	Credits		Norm		Evaluation(%)	
					GPA	NGPA	GPA	NGPA	CA	WE
Semester 1										
MA1013	Mathematics	C	3.0	1/1	3.0				20	80
CS1032	Programming Fundamentals	C	2.0	3/1	3.0				20	80
ME1032	Mechanics	C	2.0	3/4	2.0				20	80
MT1022	Properties of Materials	C	2.0	3/4	2.0				20	80
CE1022	Fluid Mechanics	C	2.0	3/4	2.0				20	80
EE1012	Electrical Engineering	C	2.0	3/4	2.0				20	80
EL1012	Language Skill Enhancement I	C	-	3/1	1.0		15.0		20	80
MN1012	Engineering in Context	C	1.0	-		1.0		1.0	30	70
Total for Semester 1							15.0	1.0		
Semester 2										
CS2012	Principles of Object Oriented Programming	C	2.0	3/1	3.0				40	60
CS2022	Data Structures and Algorithms	C	2.0	3/2	2.5				40	60
CS2052	Computer Architecture	C	2.0	3/1	3.0				40	60
EN1012	Electronic Devices and Circuits	C	2.0	-	2.0				40	60
MA1032	Numerical Methods for Computer Science	C	3.0	-	3.0				30	70
EE2093	Theory of Electricity	C	2.0	-	2.0				30	70
CS2952	Communication Skills	C	0.5	3/1	1.5		17.0		80	20
CS1962	Engineering Skill Development	C	0.5	3/1		1.5		1.5	100	-
DE2xxx	Humanities Elective I	E			2.0		2.0			
Total for Semester 2							19.0	1.5		

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Semester 3										
CS2032	Principles of Computer Communication	C	2.0	3/1	3.0				40	60
CS2042	Operating Systems	C	2.0	3/2	2.5				40	60
CS2062	Object Oriented Software Development	C	2.0	3/1	3.0				40	60
EN2022	Digital Electronics	C	2.0	3/2	2.5				30	70
CE1822	Aspects of Civil Engineering	C	2.0	-	2.0				30	70
ME1822	Basic Engineering Thermodynamics	C	1.5	3/2	2.0				30	70
MA2053	Graph Theory	C	2.0	-	2.0				30	70
MA2073	Calculus for System Modelling	C	2.0	-	2.0		19.0		30	70
CS2202	Programming Challenge I	C	-	3/1		1.0			100	-
CS2963	Presentation Skills	C	-	3/1		1.0		2.0	100	-
Total for Semester 3							19.0	2.0		
Semester 4										
CS3022	Software Engineering	C	2.0	3/1	3.0				40	60
CS3032	Computer Networks	C	2.0	3/1	3.0				40	60
CS3042	Database Systems	C	2.0	3/1	3.0				40	60
MA2033	Linear Algebra	C	2.0	-	2.0				30	70
MA2063	Differential Equations and Applications	C	2.0	-	2.0				30	70
ME1802	Introduction to Manufacturing Engineering	C	2.0	3/2	2.5				30	70
EN2062	Signals & Systems	C	2.0	3/2	2.5		18.0		30	70
CS2212	Programming Challenge II	C	-	3/1		1.0			100	-
CS3953	Technical Writing	C	0.5	3/1		1.5		2.5	100	-
Total for Semester 4							18.0	2.5		

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					GPA	NGPA	GPA	NGPA	CA	WE
Semester 5										
CS3202	Software Engineering Project	C		6/1	2.0				100	-
CS3052	Computer Security	C	2.0	-	2.0				40	60
CS3062	Theory of Computing	C	2.0	-	2.0				40	60
CS3242	Micro-controllers and Applications	C	2.0	3/1	3.0				40	60
MN3042	Business Economics & Financial Accounting	C	3.0	-	3.0				30	70
MA3013	Applied Statistics	C	2.0	-	2.0		14.0		30	70
CS3212	Software Architecture and Design	E	2.0	3/1	3.0				40	60
CS3412	Advanced Networking	E	2.0	3/1	3.0				40	60
CS3512	Programming Languages	E	2.0	3/1	3.0				40	60
CS3612	Intelligent Systems	E	2.0	3/1	3.0				40	60
CS3712	Image Processing	E	2.0	3/1	3.0		6.0		40	60
Total for Semester 5							20.0	0.0		
Industrial Training										
CS3992	Industrial Training	C	-	-		6.0		6.0	100	-
Total for Industrial Training							0.0	6.0		
Semester 6										
CS4012	Professional Practice	C	2.0	-	2.0				30	70
CS3962	Research and Report Writing	C	0.5	3/2	1.0		3.0		80	20
CS3312	Embedded System Design	E	2.0	3/1	3.0				30	70
CS4232	Formal Methods in Software Engineering	E	2.0	3/1	3.0				50	50
CS4242	Human Computer Interaction	E	2.0	3/1	3.0				40	60
CS4532	Concurrent Programming	E	2.0	3/1	3.0				40	60
CS4742	Bioinformatics	E	2.0	3/1	3.0		3.0		40	60
DE2xxx	Humanities Elective II	E			2.0		2.0			
Total for Semester 6							8.0	0.0		

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					GPA	NGPA	GPA	NGPA	CA	WE
<i>Semester 7</i>										
CS4202	Research and Development Project	C			5.0				100	-
MN4062	Organizational Behavior and Management	C	2.0	-	2.0		7.0		30	70
CS4222	Software Process and Management	E	2.0	3/1	3.0				50	50
CS4232	Formal Methods in Software Engineering	E	2.0	3/1	3.0				50	50
CS4242	Human Computer Interaction	E	2.0	3/1	3.0				40	60
CS4252	Advanced Operating Systems	E	2.0	3/1	3.0				50	50
CS4262	Distributed Systems	E	2.0	3/1	3.0				50	50
CS4272	Quality Engineering	E	2.0	3/1	3.0				50	50
CS4322	Digital System Design	E	2.0	3/1	3.0				40	60
CS4332	Computer Aided Digital Design	E	2.0	3/1	3.0				40	60
CS4342	Advanced Computer Architecture	E	2.0	3/1	3.0				40	60
CS4352	Robotics and Automation	E	2.0	3/1	3.0				50	50
CS4432	Network and System Administration	E	2.0	3/1	3.0				40	60
CS4442	Current Trends in Networking	E	2.0	3/1	3.0				50	50
CS4462	Computer & Network Security	E	2.0	3/1	3.0				50	50
CS4472	Mobile Computing	E	2.0	3/1	3.0				50	50
CS4482	High Performance Networking	E	2.0	3/1	3.0				40	60
CS4492	Wireless and Broadband Networking	E	2.0	3/1	3.0				40	60
CS4522	Advanced Algorithms	E	2.0	3/1	3.0				40	60
CS4532	Concurrent Programming	E	2.0	3/1	3.0				40	60
CS4542	Compiler Design	E	2.0	3/1	3.0				40	60
CS4552	Scientific Computing	E	2.0	3/1	3.0				40	60
CS4622	Machine Learning	E	2.0	3/1	3.0				50	50
CS4632	Database Internals	E	2.0	3/1	3.0				40	60
CS4642	Data Mining & Information Retrieval	E	2.0	3/1	3.0				40	60

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CS4722	Computer Vision	E	2.0	3/1	3.0				40	60	
CS4732	Computer Graphics	E	2.0	3/1	3.0				40	60	
CS4742	Bioinformatics	E	2.0	3/1	3.0			12.0	40	60	
Total for Semester 7									19.0	0.0	
Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignm hrs/weeks	Credits		Norm		Evaluation(%)		
					GPA	NGPA	GPA	NGPA	CA	WE	
Semester 8											
CS4202	Research and Development Project	C			5.0				100	-	
MN4122	Human Resource Management & Industrial Relations	C	2.0	-	2.0		7.0		30	70	
CS4222	Software Process and Management	E	2.0	3/1	3.0				50	50	
CS4232	Formal Methods in Software Engineering	E	2.0	3/1	3.0				50	50	
CS4242	Human Computer Interaction	E	2.0	3/1	3.0				40	60	
CS4252	Advanced Operating Systems	E	2.0	3/1	3.0				50	50	
CS4262	Distributed Systems	E	2.0	3/1	3.0				50	50	
CS4272	Quality Engineering	E	2.0	3/1	3.0				50	50	
CS4322	Digital System Design	E	2.0	3/1	3.0				40	60	
CS4332	Computer Aided Digital Design	E	2.0	3/1	3.0				40	60	
CS4342	Advanced Computer Architecture	E	2.0	3/1	3.0				40	60	
CS4352	Robotics and Automation	E	2.0	3/1	3.0				50	50	
CS4432	Network and System Administration	E	2.0	3/1	3.0				40	60	
CS4442	Current Trends in Networking	E	2.0	3/1	3.0				50	50	
CS4452	Information Security & Cryptography	E	2.0	3/1	3.0				50	50	
CS4462	Computer & Network Security	E	2.0	3/1	3.0				50	50	
CS4472	Mobile Computing	E	2.0	3/1	3.0				50	50	
CS4482	High Performance Networking	E	2.0	3/1	3.0				40	60	
CS4492	Wireless and Broadband Networking	E	2.0	3/1	3.0				40	60	
CS4522	Advanced Algorithms	E	2.0	3/1	3.0				40	60	
CS4532	Concurrent Programming	E	2.0	3/1	3.0				40	60	

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CS4542	Compiler Design	E	2.0	3/1	3.0				40	60	
CS4552	Scientific Computing	E	2.0	3/1	3.0				40	60	
CS4622	Machine Learning	E	2.0	3/1	3.0				50	50	
CS4632	Database Internals	E	2.0	3/1	3.0				40	60	
CS4642	Data Mining & Information Retrieval	E	2.0	3/1	3.0				40	60	
CS4722	Computer Vision	E	2.0	3/1	3.0				40	60	
CS4732	Computer Graphics	E	2.0	3/1	3.0				40	60	
CS4742	Bioinformatics	E	2.0	3/1	3.0		9.0		40	60	
MA4013	Linear Models and Multivariate Statistics	E	3.0	-	3.0				30	70	
MA4023	Operational Research	E	3.0	-	3.0				30	70	
MA4033	Time Series & Stochastic Process	E	3.0	-	3.0				30	70	
MA4053	Numerical Analysis for Scientific Computing	E	3.0	-	3.0		3.0		30	70	
Total for Semester 8								19.0	0.0		
Total for the Programme								137.0	13.0		

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Modules Offered to Other Fields of Specialization

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignm hrs/weeks	Credits		Norm		Evaluation (%)	
					GPA	NGPA	GPA	NGPA	CA	WE
<i>Semester 2</i>										
CS2812	Visual Programming	-	1.0	3/1	2.0				60	40
CS2842	Computer Systems	-	2.0	-	2.0				40	60
CS2850	Visual Programming & Applications	-	1.0	3/1		2.0			100	-
<i>Semester 3</i>										
CS2832	Modular Software Development	-	1.0	6/1	3.0				50	50
CS2812	Visual Programming	-	1.0	3/1	2.0				60	40
CS2882	Object Oriented Programming using C++	-	2.0	3/1	3.0				30	70

