

Curriculum of B.Sc. Engineering Honours Degree Programme
Department of Computer Science and 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		15.0		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
EE1013	Electrical Engineering	C	2.0	3/4	2.0				20	80
EL1012	Language Skill Enhancement I	C	-	3/1	1.0				20	80
MN1012	Engineering in Context	C	1.0	-		1.0		1.0	30	70
Total for Semester 1					15.0	1.0	15.0	1.0		
Semester 2										
CS2012	Principles of Object Oriented Programming	C	2.0	3/1	3.0		16.0		40	60
CS2022	Data Structures and Algorithms	C	2.0	3/2	2.5				40	60
CS2052	Computer Architecture	C	2.0	3/2	2.5				40	60
EN1012	Electronic Devices and Circuits	C	2.0	-	2.0				40	60
MA1032	Numerical Analysis	C	3.0	-	3.0				30	70
EE1023	Theory of Electricity	C	2.0	-	2.0				30	70
CS2952	Communication Skills	C	-	3/1	1.0				80	20
CS1962	Engineering Skill Development	C	1.0	3/1		2.0		4.0	100	-
DE1xxx	Humanities Elective I ⁽¹⁾	E				2.0				
Total for Semester 2					16.0	4.0	16.0	4.0		
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

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CS2062	Object Oriented Software Development	C	2.0	3/1	3.0		19.0		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				30	70
CS2202	Programming Challenge I	C	-	3/1		1.0		2.0	100	-
CS2962	Presentation Skills	C	-	3/1		1.0			100	-
DE2xxx	Humanities Elective II ⁽¹⁾	E			2.0		2.0			
Total for Semester 3					21.0	2.0	21.0	2.0		
Semester 4										
CS3022	Software Engineering	C	2.0	3/1	3.0		21.0		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
CS3242	Micro-controllers and Applications	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	3/1	2.5				30	70
EN2062	Signals & Systems	C	2.0	3/1	2.5				30	70
CS2212	Programming Challenge II	C	-	3/1		1.0		2.0	100	-
CS3952	Technical Writing	C	-	3/1		1.0			100	-
Total for Semester 4					21.0	2.0	21.0	2.0		
Semester 5										
CS3202	Software Engineering Project	C		6/1	2.0				100	-

Effective for 2011 Intake onwards

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					GPA	NGPA	GPA	NGPA	CA	WE
CS3052	Computer Security	C	2.0	-	2.0		11.0		40	60
CS3062	Theory of Computing	C	2.0	-	2.0				40	60
MN3042	Business Economics & Financial Accounting	C	3.0	-	3.0				30	70
MA3013	Applied Statistics	C	2.0	-	2.0				30	70
CS3212	Software Architecture and Design	E	2.0	3/1	3.0				40	60
CS3312	Embedded System Design	E	2.0	3/1	3.0				30	70
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		9.0	0.0	40	60
Total for Semester 5					20.0	0.0	20.0	0.0		
Semester 6										
CS3992	Industrial Training	C	-	-		6.0		6.0	100	-
Semester 6					0.0	6.0	0.0	6.0		
Semester 7										
CS4202	Research and Development Project ⁽²⁾	C			5.0		7.0		100	-
MN4062	Organizational Behavior and Management	C	2.0	-	2.0				30	70
CS3962	Research and Report Writing	E	0.5	3/2	1.0				80	20
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
CS4342	Advanced Computer Architecture	E	2.0	3/1	3.0				40	60
CS4322	Digital System Design	E	2.0	3/1	3.0				40	60
CS4422	Wireless and Broadband Networking	E	2.0	3/1	3.0				40	60
CS4432	Network and System Administration	E	2.0	3/1	3.0				40	60

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CS4522	Advanced Algorithms	E	2.0	3/1	3.0		14.0 ⁽³⁾	0.0	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
CS4632	Database Internals	E	2.0	3/1	3.0				60	40
CS4642	Data Mining & Information Retrieval	E	2.0	3/1	3.0				60	40
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				40	60
Total for Semester 7					21.0	0.0	21.0	0.0		
Semester 8										
CS4202	Research and Development Project ⁽²⁾	C			5.0		9.0		100	-
CS4012	Professional Practice	C	2.0	-	2.0				30	70
MN4122	Human Resource Management & Industrial relations	C	2.0	-	2.0				30	70
CS4242	Human Computer Interaction	E	2.0	3/1	3.0				40	60
CS4452	Information Security & Cryptography ⁽⁴⁾	E	2.0	3/1	3.0				40	60
CS4462	Computer & Network Security ⁽⁴⁾	E	2.0	3/1	3.0				40	60
CS4332	Computer Aided Digital Design	E	2.0	3/1	3.0				40	60
CS4352	Robotics and Automation	E	2.0	3/1	3.0				50	50
CS4482	High Performance Networking	E	2.0	3/1	3.0				40	60
CS4442	Current Trends in Networking	E	2.0	3/1	3.0				50	50
CS4552	Scientific Computing	E	2.0	3/1	3.0				40	60
CS4622	Machine Learning	E	2.0	3/1	3.0				50	50
CS4472	Mobile Computing	E	2.0	3/1	3.0				50	50
CS4252	Advanced Operating Systems	E	2.0	3/1	3.0				50	50

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CS4262	Distributed Systems	E	2.0	3/1	3.0		9.0 ⁽³⁾	0.0	50	50
CS4272	Quality Engineering	E	2.0	3/1	3.0				50	50
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	0.0	30	70
Total for Semester 8					21.0	0.0	21.0	0.0		
Total for the Programme					135.0	15.0				

Notes:

- ⁽¹⁾ - Weekly load of lectures and lab/Assignment hrs vary among different Non-technical modules.
- ⁽²⁾ - A total of 10 credits for Research and Development Project over Semester 7 and Semester 8. The project must be relevant to the focus area as determined by the department.
- ⁽³⁾ - Students can complete these modules in either Semester 7 or Semester 8 based on the offering semester.
- ⁽⁴⁾ - Students can take either CS4452 or CS4462.

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
Semester 2										
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			60	40

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Semester 3										
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