Revised Curriculum of B.Sc. Engineering Honours Degree Programme
Computer Science and Engineering Specialization
Department of Computer Science and Engineering

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 1									
MA1012	Mathematics	C	3.0	1/1	3.0				
CS1032	Programming Fundamentals	C	2.0	3/1	3.0				
ME1032	Mechanics	C	2.0	3/4	2.0				
MT1022	Properties of Materials	C	2.0	3/4	2.0				
CE1022	Fluid Mechanics	C	2.0	3/4	2.0				
EE1012	Electrical Engineering	C	2.0	3/4	2.0				
EL1012	Language Skill Enhancement I	C	-	3/1	1.0		15.0	0.0	15.0
				Total for Semester 1	15.0	0.0	**15.0**	**0.0**	**15.0**
Term A									
EL1022	Language Skill Enhancement II	C	-	6/1	1.0				
MN1012	Engineering in Context	C	2.0	-		1.0			
CS1952	Engineering Design	C	2.0	3/1		1.5			
CS1962	Engineering Skill Development	C	1.0	6/1		1.5	1.0	4.0	5.0
DE1xx2	Non-Technical Elective I[(1)]	E			2.0		2.0	0.0	2.0
				Total for Term A	3.0	4.0	**3.0**	**4.0**	**7.0**
Semester 2									
CS2012	Principles of Object Oriented Programming	C	2.0	3/1	3.0				
CS2022	Data Structures and Algorithms	C	2.0	3/2	2.5				
CS2052	Computer Architecture	C	2.0	3/1	3.0				
EN1012	Electronic Devices and Circuits	C	2.0	-	2.0				
MA1032	Numerical Methods for Computer Science	C	3.0	-	3.0				
EE2092	Theory of Electricity	C	2.0	-	2.0				
CS2952	Communication Skills	C	0.5	3/1	1.5		17.0	0.0	17.0
				Total for Semester 2	17.0	0.0	**17.0**	**0.0**	**17.0**

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Computer Science and Engineering Specialization
Department of Computer Science and Engineering

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					GPA	NGPA	GPA	NGPA	Total
Semester 3									
CS2032	Principles of Computer Communication	C	2.0	3/1	3.0				
CS2042	Operating Systems	C	2.0	3/2	2.5				
CS2062	Object Oriented Software Development	C	2.0	3/1	3.0				
EN2022	Digital Electronics	C	2.0	3/1	3.0				
CE1822	Aspects of Civil Engineering	C	2.0	-	2.0				
ME1822	Basic Engineering Thermodynamics	C	1.5	3/2	2.0				
MA2042	Discrete Mathematics	C	2.0	-	2.0				
MA2022	Calculus	C	2.0	-	2.0				
CS2202	Programming Challenge I	C		3/1		1.0			
CS2962	Presentation Skills	C	0.5	3/1		1.5	19.5	2.5	22.0
				Total for Semester 3	19.5	2.5	**19.5**	**2.5**	**22.0**
Semester 4									
CS3022	Software Engineering	C	2.0	3/1	3.0				
CS3032	Computer Networks	C	2.0	3/1	3.0				
CS3042	Database Systems	C	2.0	3/1	3.0				
CS3242	Micro-controllers and Applications	C	2.0	3/1	3.0				
MA2032	Linear Algebra	C	2.0	-	2.0				
MA2012	Differential Equations	C	2.0	-	2.0				
ME1802	Introduction to Manufacturing Engineering	C	1.0	3/1	2.5				
EN2062	Signals & Systems	C	2.0	3/1	2.5				
CS2212	Programming Challenge II	C	-	3/1		1.0			
CS3952	Technical Writing	C	0.5	3/2		1.0	21.0	2.0	23.0
				Total for Semester 4	21.0	2.0	**21.0**	**2.0**	**23.0**

Revised Curriculum of B.Sc. Engineering Honours Degree Programme
Computer Science and Engineering Specialization
Department of Computer Science and Engineering

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 5									
CS3202	Software Engineering Project	C		6/1	2.0				
CS3962	Research and Report Writing	C	0.5	3/2	1.0				
CS3052	Computer Security	C	2.0	-	2.0				
CS3062	Theory of Computing	C	2.0	-	2.0				
MN3042	Business Economics & Financial Accounting	C	3.0	-	3.0				
MA3012	Applied Statistics	C	2.0	-	2.0		12.0	0.0	12.0
CS3212	Software Architecture and Design[7]	E	2.0	3/1	3.0				
CS3312	Embedded System Design[7]	E	2.0	3/1	3.0				
CS3412	Advanced Networking[7]	E	2.0	3/1	3.0				
CS3512	Programming Languages[7]	E	2.0	3/1	3.0				
CS3612	Intelligent Systems[7]	E	2.0	3/1	3.0				
CS3712	Image Processing[7]	E	2.0	3/1	3.0				
							6.0	0.0	6.0
				Total for Semester 5	27.0	0.0	**18.0**	**0.0**	**18.0**
Term B & Semester 6									
CS3992	Industrial Training	C	-	-		6.0	0.0	6.0	6.0
				Total for Term B & Semester 6	0.0	6.0	**0.0**	**6.0**	**6.0**

Revised Curriculum of B.Sc. Engineering Honours Degree Programme
Computer Science and Engineering Specialization
Department of Computer Science and Engineering

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 7									
CS4202	Research and Development Project[2]	C			4.0				
MN4062	Organizational Behavior and Management	C	2.0	-	2.0		6.0	0.0	6.0
CS4222	Software Process and Management	C/E	2.0	3/1	3.0				
CS4232	Formal Methods in Software Engineering	C/E	2.0	3/1	3.0				
CS4342	Advanced Computer Architecture	C/E	2.0	3/1	3.0				
CS4322	Digital System Design	C/E	2.0	3/1	3.0				
CS4422	Wireless and Broadband Networking	C/E	2.0	3/1	3.0				
CS4432	Network and System Administration	C/E	2.0	3/1	3.0				
CS4522	Advanced Algorithms	C/E	2.0	3/1	3.0				
CS4532	Concurrent Programming	C/E	2.0	3/1	3.0				
CS4542	Compiler Design	C/E	2.0	3/1	3.0				
CS4632	Database Internals	C/E	2.0	3/1	3.0				
CS4642	Data Mining & Information Retrieval	C/E	2.0	3/1	3.0		9.0	0.0	9.0
CS4722	Computer Vision	E	2.0	3/1	3.0				
CS4732	Computer Graphics	E	2.0	3/1	3.0				
CS4742	Bioinformatics	E	2.0	3/1	3.0		3.0[3, 4]	0.0	3.0
				Total for Semester 7	51.0	0.0	**18.0**	**0.0**	**18.0**
Term C									
CS4202	Research and Development Project[2]	C	-	-	4.0		4.0	0.0	4.0
DE3xx2	Non-Technical Elective II[1]	E			2.0		2.0	0.0	2.0
				Total for Term C	6.0	0.0	**6.0**	**0.0**	**6.0**

Revised Curriculum of B.Sc. Engineering Honours Degree Programme
Computer Science and Engineering Specialization
Department of Computer Science and Engineering

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits		Norm		
					GPA	NGPA	GPA	NGPA	Total
Semester 8									
CS4202	Research and Development Project[1]	C			2.0				
CS4012	Professional Practice	C	2.0	-	2.0				
MN4122	Human Resource Management and Industrial Relations	C	2.0	-	2.0		6.0	0.0	6.0
CS4242	Human Computer Interaction	C/E	2.0	3/1	3.0				
CS4452	Information Security & Cryptography[5]	C/E	2.0	3/1	3.0				
CS4462	Computer & Network Security[5]	C/E	2.0	3/1	3.0				
CS4332	Computer Aided Digital Design	C/E	2.0	3/1	3.0				
CS4252	Robotics and Automation	C/E	2.0	3/1	3.0				
CS4432	High Performance Networking	C/E	2.0	3/1	3.0				
CS4442	Current Trends in Networking	C/E	2.0	3/1	3.0				
CS4552	Scientific Computing	C/E	2.0	3/1	3.0				
CS4622	Machine Learning	C/E	2.0	3/1	3.0		6.0	0.0	6.0
CS4472	Mobile Computing	E	2.0	3/1	3.0				
CS4252	Advanced Operating Systems	E	2.0	3/1	3.0				
CS4262	Distributed Systems	E	2.0	3/1	3.0				
CS4272	Quality Engineering	E	2.0	3/1	3.0		3.0[3, 4]	0.0	3.0
MA4012	Linear Models and Multivariate Statistics[6]	E	3.0	-	3.0				
MA4022	Operational Research[6]	E	3.0	-	3.0				
MA4032	Time Series & Stochastic Process[6]	E	3.0	-	3.0				
MA4052	Numerical Analysis for Scientific Computing	E	3.0	-	3.0		3.0	0.0	3.0
Total for Semester 8					54.0	0.0	**18.0**	**0.0**	**18.0**
Total for the Programme					214.5	14.5	**135.5**	**14.5**	**150.0**

(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, Term C and Semester 8.

(3) - Students can complete these modules in either Semester 7 or Semester 8
(4) - Field electives can be from the list of elective modules or other streams
(5) - Students can take either CS4452 and CS4462
(6) - Students must take at least one module out of the 4 MA modules
(7) - Depending on a sub-specialization, one or more of these may be compulsory modules.

Modules Offered to Other Fields of Specialization

Module Code	Module Name	Category	Lectures hrs/week	Lab/ Assignments hrs/weeks	Credits	
					GPA	NGPA
Semester 2						
CS2812	Visual Programming	C	2.0	-	2.0	
CS2842	Computer Systems	C	2.0	-	2.0	
Semester 3						
CS2832	Modular Software Development	C	1.0	6/1	3.0	
CS2812	Visual Programming	C	1.0	3/1	2.0	