• Computer Science Four Year Plan

First Semester		C. H.	Pre-requisites	Weekly Contact Hours			
				Lecture	Lab	Tutorial	Total
CS100	Introduction to Information Technology	3	None	3	1.5		4.5
CS101	Fundamentals of Computing I	3	None	3	1.5		4.5
ENG101	English for Academic Purposes	3	None	3		1.5	4.5
MTH101	Calculus I	3	None	3		1.5	4.5
MTH103	Discrete Mathematics	3	None	3		1.5	4.5
PHY103	Fundamentals of Electronics	3	None	3		1.5	4.5
		18		18	3	6	27
Second Semester		**C. H.**	**Pre-requisites**	**Weekly Contact Hours**			
				Lecture	Lab	Tutorial	Total
CS102	Fundamentals of Computing II	3	CS101	3	1.5		4.5
CS105	Principles of Information Systems	3	CS100	3		1.5	4.5
CS121	Digital Logic Design	3	MTH103	3	1.5		4.5
ENG102	English for Study Skills	3	ENG101	3		1.5	4.5
MTH102	Calculus II	3	MTH101	3		1.5	4.5
MTH106	Linear Algebra	3	MTH101	3	1.5		4.5
		18		18	4.5	4.5	27
Third Semester		**C. H.**	**Pre-requisites**	**Weekly Contact Hours**			
				Lecture	Lab	Tutorial	Total
CS213	Data Structures	3	CS102	3	1.5		4.5
CS223	Computer Organization	3	CS121	3	1.5		4.5
CS283	Web Programming	3	CS102	3	1.5		4.5
CS271	Fundamentals of Database Systems	3	CS105	3	1.5		4.5
ENG201	English for Research Purposes	3	ENG102	3		1.5	4.5
MTH204	Probability and Statistics	3	MTH101	3		1.5	4.5
		18		18	6	3	27
Fourth Semester		**C. H.**	**Pre-requisites**	**Weekly Contact Hours**			
				Lecture	Lab	Tutorial	Total
CS207	Professional Computing Ethics	3	CS102	3		1.5	4.5
CS232	Multimedia Programming	3	CS213	3	1.5		4.5
CS251	Operating Systems	3	CS213	3	1.5		4.5
CS244	Object Oriented Software Engineering	3	CS283	3	1.5		4.5
CS293	Operations Research	3	MTH106	3	1.5		4.5
MGT200	Introductory Management	3	ENG101	3		1.5	4.5
		18		18	6	3	27

Computer Science Pathway

Fifth Semester		C. H.	Pre-requisites	Weekly Contact Hours			
				Lecture	Lab	Tutorial	Total
CS301	Industrial Training	1	CS102		3		3
CS312	Analysis and Design of Algorithms	3	CS213	3	1.5		4.5
CS322	Computer Networks	3	CS213	3	1.5		4.5
CS373	Information Retrieval	3	CS271	3	1.5		4.5
H/S Elective I	Humanities and Social Sciences I	3	ENG101	3		1.5	4.5
FAC I	Pathway Elective I	3		3	1.5		4.5
		16		15	9	1.5	25.5
Sixth Semester		**C. H.**	**Pre-requisites**	**Weekly Contact Hours**			
				Lecture	**Lab**	**Tutorial**	**Total**
CS334	Compiler Design	3	CS213	3	1.5		4.5
CS381	Computer Graphics	3	CS232	3	1.5		4.5
CS389	Image Processing	3	MTH106	3	1,5		4.5
CS361	Artificial Intelligence	3	CS213	3	1.5		4.5
CS363	Machine Learning	3	MTH204	3	1.5		4.5
H/S Elective II	Humanities and Social Sciences II	3	ENG101	3		1.5	4.5
		18		18	7.5	1.5	27
Seventh Semester		**C. H.**	**Pre-requisites**	**Weekly Contact Hours**			
				Lecture	**Lab**	**Tutorial**	**Total**
CS481	Advanced Graphics	3	CS381	3	1.5		4.5
CS485	Pattern Recognition	3	CS361	3	1.5		4.5
CS484	Human Computer Interaction	3	CS232	3	1.5		4.5
CS487	Cloud Computing	3	CS251	3	1.5		4.5
FAC II	Pathway Elective II	3		3	1.5		4.5
CS405	Graduation Project I (In CS)	3	Senior Standing		3	3	6
		18		15	10.5	3	28.5
Eighth Semester		**C. H.**	**Pre-requisites**	**Weekly Contact Hours**			
				Lecture	**Lab**	**Tutorial**	**Total**
CS451	Advanced Operating Systems	3	CS251	3	1.5		4.5
CS401	Computer Security	3	CS322	3	1.5		4.5
FAC III	Pathway Elective III	3		3	1.5		4.5
FAC IV	Pathway Elective IV	3		3	1.5		4.5
CS406	Graduation Project II (in CS)	4	CS405		5	3	8
		16		12	11	3	26

University Requirements (12 C. Hrs.)		C. H.	Pre-requisites
ENG101	English for Academic Purposes	3	None
ENG102	English for Study Skills	3	ENG101
ENG201	English for Research Purposes	3	ENG102
MGT200	Introductory Management	3	ENG101

Elective Modules in Humanities & Social Sciences (6 C. Hrs.)		C. H.	Pre-requisites
Two Elective modules can be chosen from level 1 and/or 2 Humanities & Social Sciences Modules such as:			
BUS 102	Business and Society	3	ENG101
FAC 101	Essentials of Accounting I	3	ENG101
ECO 102	Introduction to Economics II	3	ENG101
MKT 201	Marketing I	3	ENG101

CS Pathway Electives (12 C. H.)		C. H.	Pre-requisites
CS326	Mobile Device Programming	3	CS232
CS343	Software Project Management	3	CS244
CS362	Knowledge Representation & Reasoning	3	CS361
CS374	Geographical Information Systems	3	CS271
CS384	Advanced Web Programming	3	CS283
CS391	Modelling and Simulation	3	MTH204
CS411	Theory of Computing	3	CS334
CS423	Parallel and Distributed Systems	3	CS487
CS424	Embedded Systems	3	CS223
CS463	Bioinformatics	3	CS363
CS464	Neural Networks	3	CS363
CS472	Advanced Database Systems	3	CS271
CS475	Data Mining	3	CS363
CS476	Big Data and Analytics	3	CS271
CS488	Robotic Interfacing	3	CS223
CS490	Selected Topics in CS	3	