Detail curriculum of B. Sc. in Computer Science & Engineering (CSE)

The duration of the program is four years divided into 12 semesters. To obtain the degree students are required to complete 150 credit hours with a minimum CGPA of 2.50.

Courses	**Credit Hours**
Mathematics + Statistics	18
Basic Science	11
Humanities (including English)	17
Basic + Major Engineering	104
Total	**150**

Semester 1					
Course Code.	**Course Title**	**Hours/Week**		**Credits**	**Prerequisite**
		Theory	**Lab**		
CSE 109	Computer Fundamentals	3.0		3.0	
CSE 110	Computer Fundamentals Laboratory		3.0	1.0	
ENG 103	Listening and Speaking	3.0		2.0	
MAT 101	Calculus I	3.0		3.0	
PHY 101	Physics I	3.0		3.0	
PHY 102	Physics I Laboratory		3.0	1.0	
Semester 2					
ENG 107	Reading and Grammar	3.0		2.0	
MAT 103	Calculus II	3.0		3.0	MAT 101
PHY 103	Physics II	3.0		3.0	PHY 101,102
CSE 103	Structured Programming	3.0		3.0	CSE 111,112
CSE 104	Structured Programming Laboratory		3.0	1.0	CSE 111,112
Semester 3					
SOC 101	Introduction to Sociology	3.0		3.0	
BUS 105	Introduction to Business	3.0		3.0	
ENG 111	Writing	3.0		2.0	
EEE 111	Basic Electrical Circuits	3.0		3.0	
EEE 112	Basic Electrical Circuits Laboratory		3.0	1.0	
CSE 106	Advanced Programming Laboratory		3.0	1.0	CSE 103,104
Semester 4					
EEE 231	Electronics I	3.0		3.0	EEE 111,112
EEE 232	Electronics I Laboratory		3.0	1.0	EEE 111,112
MAT 201	Differential Equations	3.0		3.0	
CHM 201	Chemistry	3.0		3.0	
CSE 211	Discrete Mathematics	3.0		3.0	

Semester 5					
MAT 205	Linear Algebra, Geometry and Complex Variables	3.0		3.0	
EEE 233	Electronics II	3.0		3.0	EEE 231,232
EEE 234	Electronics II Laboratory		3.0	1.0	EEE 231,232
CSE 223	Object Oriented Programming	3.0		3.0	CSE 103,104
CSE 224	Object Oriented Programming Laboratory		3.0	1.0	CSE 103,104
CSE 227	Logic Design and Digital Systems	3.0		3.0	
CSE 228	Logic Design and Digital Systems Laboratory		3.0	1.0	
Semester 6					
ACT 201	Principles of Accounting	3.0		2.0	
HUM 201	Values and Ethics	3.0		3.0	
MAT 209	Numerical Methods	3.0		3.0	MAT 201
CSE 231	Data Structures	3.0		3.0	CSE 103,104
CSE 232	Data Structures Laboratory		3.0	1.0	CSE 103,104
Semester 7					
STS 301	Fundamentals of Statistics	3.0		3.0	
CSE 327	Design and Analysis of Algorithm	3.0		3.0	CSE 231,232
CSE 328	Design and Analysis of Algorithm Laboratory		2.0	1.0	CSE 231,232
CSE 313	Microprocessor, Microcontrollers and Assembly Language Programming	3.0		3.0	CSE 103,104 CSE 227,228
CSE 314	Microprocessor, Microcontrollers and Assembly Language Programming Laboratory		2.0	1.0	CSE 103,104 CSE 227,228
CSE 315	Theory of Computation	3.0		3.0	
Semester 8					
CSE 321	Computer Arch. and Organization	3.0		3.0	CSE 313
CSE 325	Computer Peripherals and Interfacing	3.0		3.0	CSE 313,314
CSE 326	Computer Peripherals and Interfacing Laboratory		2.0	1.0	CSE 313,314
CSE 311	Operating System	3.0		3.0	CSE 231,232
CSE 312	Operating System Laboratory		2.0	1.0	CSE 231,232
Semester 9					
CSE 331	Data Communication	3.0		3.0	
CSE 333	Database Management Systems	3.0		3.0	
CSE 334	Database Management Laboratory		2.0	1.0	
CSE 335	Mathematical Analysis for Computer Science	3.0		3.0	

Semester 10					
CSE 411	Computer Graphics	3.0		3.0	CSE 103,104
CSE 412	Computer Graphics Laboratory		2.0	1.0	CSE 103,104
CSE 413	Compiler Design	3.0		3.0	CSE 315
CSE 414	Compiler Design Laboratory		2.0	1.0	CSE 315
CSE 415	Computer Networks	3.0		3.0	CSE 331
CSE 416	Computer Networks Laboratory		2.0	1.0	CSE 331
CSE 477	Thesis/Project		4.0	2.0	
Semester 11					
CSE 423	Software Engineering	3.0		3.0	
CSE 424	Software Engineering Laboratory		2.0	1.0	
CSE 431	Artificial Intelligence	3.0		3.0	
CSE 432	Artificial Intelligence Laboratory		2.0	1.0	
CSE ****	Elective I	3.0		3.0	
CSE 477	Thesis/Project		4.0	2.0	
Semester 12					
CSE 441	Information Security and Cyber Law	3.0		3.0	
CSE ****	Elective II	3.0		3.0	
CSE 434	Web Programming Laboratory		4.0	2.0	CSE 223, 224 CSE 333, 334
CSE 477	Thesis/Project		4.0	2.0	

Elective Courses

Elective I					
Course No.	Course Title	Hours/Week		Credits	Prerequisite
		Theory	Lab		
CSE 455	Digital Signal Processing	3.0		3.0	
CSE 457	Multimedia System	3.0		3.0	
CSE 471	Graph Theory	3.0		3.0	
CSE 481	Cryptography and Network Security	3.0		3.0	
CSE 485	Distributed Systems	3.0		3.0	
CSE 487	Machine Learning	3.0		3.0	
CSE 491	Pattern Recognition	3.0		3.0	
Elective II					
CSE 421	Wireless Networks	3.0		3.0	
CSE 451	Bioinformatics	3.0		3.0	
CSE 453	Simulation and Modeling	3.0		3.0	
CSE 493	Computer Vision	3.0		3.0	
CSE 495	Digital Image Processing	3.0		3.0	
CSE 497	VLSI Design	3.0		3.0	

Course waiver list for diploma holders

Diploma Engineers will be eligible for up to 13 credit hours exemptions having minimum GPA 3.00 in each subject.

Course Code	Course Title	Cr. Hrs.
CSE 109	Computer Fundamentals	3.0
CSE 110	Computer Fundamentals Laboratory	1.0
PHY 101	Physics I	3.0
SOC 101	Introduction to Sociology	3.0
BUS 105	Introduction to Business	3.0
Total		13.0*

*Diploma in engineering grade sheets are to be submitted for exemption.