University of Information Technology and Sciences (UITS)
Faculty of Science and Engineering
Department of Information Technology
Program: Bachelor of Science in Information Technology (B.Sc. in IT)

LIST OF COURSES			
General Education Compulsory Courses			
Course Code	**Course Title**	**Credit**	**Class Hr/Week**
GED04111101	Communicative English	3	3
GED04111102	Communicative English Lab	1	2
GED02233201	Ethics for Engineers	2	2
	Total	**06**	**07**

General Education Elective Courses (Any Three Course: Total 6 Credits)			
Course Code	**Course Title**	**Credit**	**Class Hr/Week**
GED02221201	History of the Emergence of Bangladesh	2	2
GED02321203	Bangla	2	2
GED04112205	Financial & Managerial Accounting	2	2
GED04212207	Business Law	2	2
GED04133101	Industrial and Operation Management	2	2
GED03113103	Engineering Economics	2	2

Basic Science and Mathematics			
Course Code	**Course Title**	**Credit**	**Class Hr/Week**
CHEM05311101	Engineering Chemistry	3	3
PHY05331201	Engineering Physics	3	3
MATH05411101	Differential and Integral Calculus	3	3
MATH05411201	Ordinary and Partial Differential Equations	3	3
MATH05412101	Coordinate Geometry, Linear Algebra, and Vector Analysis	3	3
MATH05412201	Complex Variables, Fourier Analysis and Laplace Transform	3	3
MATH05423101	Probability and Statistics for Engineers	3	3
	Total	**21**	**21**

Other Engineering			
Course Code	**Course Title**	**Credit**	**Class Hr/Week**
EEE07131101	Fundamental of Electrical Engineering	3	3
EEE07131102	Fundamental of Electrical Engineering Lab	1	2
ME07151201	Engineering Drawing	1	2
	Total	**5**	**7**

Core Courses			
Course Code	**Course Title**	**Credit**	**Class Hr/Week**
IT06131101	Structured Programming Language	3	3
IT06131102	Structured Programming Language Lab	1.5	3
IT06131201	Object Oriented Programming Language	3	3
IT06131202	Object Oriented Programming Language Lab	1.5	3
IT06131203	Software Engineering and System Analysis	2	2
IT06131204	Software Engineering and System Analysis Lab	1	2
IT05411205	Discrete Mathematics	3	3
IT06112101	Data Structures and Algorithm I	3	3
IT06112102	Data Structures and Algorithm I Lab	1.5	3
IT06112103	Digital Logic Design	3	3
IT06112104	Digital Logic Design Lab	1	2
IT06132105	Software Requirement Analysis and Specification	2	2
IT06132106	Software Requirement Analysis and Specification Lab	1	2
IT06122107	Database Management System	3	3
IT06122108	Database Management System Lab	1.5	3
IT06112201	Data Structures and Algorithm II	3	3
IT06112202	Data Structures and Algorithm II Lab	1.5	3
IT06132203	Software Architecture and Design	2	2
IT06132204	Software Architecture and Design Lab	1	2
IT05412205	Numerical Methods and Analysis	3	3
IT06112207	Computer Architecture	3	3
IT06133101	Software Testing & Quality Assurance	2	2
IT06133102	Software Testing & Quality Assurance Lab	1	2
IT06123103	Data Communication and Computer Networks	3	3

IT06123104	Data Communication and Computer Networks Lab	1	2
IT06133201	Software Security and Maintenance	2	2
IT06133202	Software Security and Maintenance Lab	1	2
IT06193203	Artificial Intelligence	3	3
IT06193204	Artificial Intelligence Lab	1	2
IT06113205	Theory of Computation	2	2
IT06114101	Microprocessors, Microcontroller and Assembly Language	3	3
IT06134102	Microprocessors, Microcontroller and Assembly Language Lab	1	2
IT06134103	Operating System	3	3
IT06134104	Operating System Lab	1	2
IT06134105	Cloud Computing and Distributed System	3	3
IT06134106	Scientific Research & Methodologies Lab	1	2
IT06134107	Emerging Trends and Technologies	2	2
IT06134201	Software Project Management	2	2
IT06134202	Software Project Management Lab	1	2
IT06134204	Industrial Attachment	3	6
	Total	**80.5**	**103**

Undergraduate Projects		
Course Code	**Course Title**	**Credit**
IT06131000	Computer System Management Project	1
IT06112000	User Experience Design Project	1
IT06132001	Software Engineering Web Application Project	1
IT06133000	Mobile Application Development Project	1
IT06133001	Embedded System Management Project	1
IT06134000	Capstone Project	4.5
	Total	**9.5**

Specialized Courses (Any Four Courses with Lab: Total 16 Credits)

[Student can select any three courses from one group. The remaining course has to be taken from another group. Each course should be taken with Lab.]

Group I (Intelligent System Engineering)			
Course Code	**Course Title**	**Credit**	**Class Hr/Week**
IT06123003	Simulation and Modeling	3	3
IT06123004	Simulation and Modeling Lab	1	2
IT06123005	Internet of Things	3	3
IT06123006	Internet of Things Lab	1	2
IT06123007	Bioinformatics and Computational Biology	3	3
IT06123008	Bioinformatics and Computational Biology Lab	1	2
IT06123009	Machine Learning	3	3
IT06123010	Machine Learning Lab	1	2
IT06123011	Robotics	3	3
IT06123012	Robotics Lab	1	2
IT06123013	Data Mining and Data Warehouse	3	3
IT06123014	Data Mining and Data Warehouse Lab	1	2
IT06123015	Data Science	3	3
IT06123016	Data Science Lab	1	2
IT06123017	Geographical Information System (GIS) and its Applications	3	3
IT06123018	Geographical Information System (GIS) and its Applications Lab	1	2
IT06133019	E- commerce & M-commerce	3	3
IT06133020	E- commerce & M-commerce Lab	1	2
IT06133021	Human-Computer Interaction	3	3
IT06133022	Human-Computer Interaction Lab	1	2
IT06123023	Enterprise Resource Planning & Content Management System	3	3
IT06123024	Enterprise Resource Planning & Content Management System Lab	1	2

Group II (Network and Communication)			
Course Code	**Course Title**	**Credit**	**Class Hr/Week**
IT06123025	Network Management System	3	3
IT06123026	Network Management System Lab	1	2
IT06123027	Cryptanalysis and Crypto-currency	3	3
IT06123028	Cryptanalysis and Crypto-currency Lab	1	2
IT06123029	Information Retrieval	3	3
IT06123030	Information Retrieval Lab	1	2
IT06123031	Microwave Engineering	3	3
IT06123032	Microwave Engineering Lab	1	2
IT06123033	Very High-Speed Integrated Circuit Hardware Rationale Language (VHDL)	3	3
IT06123034	Very High-Speed Integrated Circuit Hardware Rationale Language (VHDL) Lab	1	2
IT06123035	Cyber Security	3	3
IT06123036	Cyber Security Lab	1	2
IT06123037	Optical Fiber Communications	3	3
IT06123038	Optical Fiber Communications Lab	1	2
IT06123039	Telecommunication Engineering	3	3
IT06123040	Telecommunication Engineering Lab	1	2
IT06133041	Wireless Sensor Networks	3	3
IT06133042	Wireless Sensor Networks Lab	1	2

Year/Level/Semester/Term wise distribution of courses

Semester wise Course list				
Semester 01				
Course Code	**Course Title**	**Theory Credit**	**Lab Credit**	**Total**
IT06131101	Structured Programming Language	3		
IT06131102	Structured Programming Language Lab		1.5	
GED04111101	Communicative English	3		
GED04111102	Communicative English Lab		1	
CHEM05311101	Engineering Chemistry	3		
EEE07131101	Fundamental of Electrical Engineering	3		
EEE07131102	Fundamental of Electrical Engineering Lab		1	
MATH05411101	Differential and Integral Calculus	3		
	Total	**15**	**3.5**	**18.5**

Semester 02				
Course Code	**Course Title**	**Theory Credit**	**Lab Credit**	**Total**
IT06131201	Object Oriented Programming Language	3		
IT06131202	Object Oriented Programming Language Lab		1.5	
IT06131203	Software Engineering and System Analysis	2		
IT06131204	Software Engineering and System Analysis Lab		1	
IT05411205	Discrete Mathematics	3		
GED********	General Education (Any One)	2		
ME07151201	Engineering Drawing		1	
MATH05411201	Ordinary and Partial Differential Equations	3		
PHY05331201	Engineering Physics	3		
IT06131000	Computer System Management Project		1	
	Total	**16**	**4.5**	**20.5**

Semester 03				
Course Code	Course Title	Theory Credit	Lab Credit	Total
IT06112101	Data Structures and Algorithm I	3		
IT06112102	Data Structures and Algorithm I Lab		1.5	
IT06112103	Digital Logic Design	3		
IT06112104	Digital Logic Design Lab		1	
IT06132105	Software Requirement Analysis and Specification	2		
IT06132106	Software Requirement Analysis and Specification Lab		1	
IT06122107	Database Management System	3		
IT06122108	Database Management System Lab		1.5	
MATH05412101	Coordinate Geometry, Linear Algebra, and Vector Analysis	3		
IT06112000	User Experience Design Project		1	
	Total	14	6	20

Semester 04				
Course Code	Course Title	Theory Credit	Lab Credit	Total
IT06112201	Data Structures and Algorithm II	3		
IT06112202	Data Structures and Algorithm II Lab		1.5	
IT06132203	Software Architecture and Design	2		
IT06132204	Software Architecture and Design Lab		1	
IT05412205	Numerical Methods and Analysis	3		
IT06112207	Computer Architecture	3		
GED********	General Education Any One	2		
MATH05412201	Complex Variables, Fourier Analysis and Laplace Transform	3		
IT06132001	Software Engineering Web Application Project		1	
	Total	16	3.5	19.5

Semester 05				
Course Code	**Course Title**	**Theory Credit**	**Lab Credit**	**Total**
IT06133101	Software Testing & Quality Assurance	2		
IT06133102	Software Testing & Quality Assurance Lab		1	
IT06123103	Data Communication and Computer Networks	3		
IT06123104	Data Communication and Computer Networks Lab		1	
MATH05423101	Probability and Statistics for Engineers	3		
GED********	General Education Any One	2		
IT061*****	Specialized I	3		
IT061*****	Specialized I Lab		1	
IT061*****	Specialized II	3		
IT061*****	Specialized II Lab		1	
IT06133000	Mobile Application Development Project		1	
	Total	**16**	**5**	**21**

Semester 06				
Course Code	**Course Title**	**Theory Credit**	**Lab Credit**	**Total**
IT06133201	Software Security and Maintenance	2		
IT06133202	Software Security and Maintenance Lab		1	
IT06193203	Artificial Intelligence	3		
IT06193204	Artificial Intelligence Lab		1	
IT06113205	Theory of Computation	2		
IT061*****	Specialized III	3		
IT061*****	Specialized III Lab		1	
IT061*****	Specialized IV	3		
IT061*****	Specialized IV Lab		1	
GED02233201	Ethics for Engineers	2		
IT06133001	Embedded System Management Project		1	
	Total	**15**	**5**	**20**

Semester 07				
Course Code	**Course Title**	**Theory Credit**	**Lab Credit**	**Total**
IT06114101	Microprocessors, Microcontroller and Assembly Language	3		
IT06134102	Microprocessors, Microcontroller and Assembly Language Lab		1	
IT06134103	Operating System	3		
IT06134104	Operating System Lab		1	
IT06134105	Cloud Computing and Distributed System	3		
IT06134106	Scientific Research & Methodologies Lab		1	
IT06134107	Emerging Trends and Technologies	2		
IT06134000	Capstone Project		4.5	
	Total	**11**	**7.5**	**18.5**

Semester 08				
Course Code	**Course Title**	**Theory Credit**	**Lab Credit**	**Total**
IT06134201	Software Project Management	2		
IT06134202	Software Project Management Lab		1	
IT06134204	Industrial Attachment		3	
	Total	**2**	**4**	**6**
Total (All Semesters)		**105**	**39**	**144**