

M.Sc.(C.S.)

Semester	I	Total Credit	4
Course Code	CC 101	Credit Pattern	L-45, T-8, P-7
Course Title	Computer Organization and Architecture		
Course Outcomes			
After completion of this course the student will be able to:			
1	To build understanding and problem-solving skills required for digital circuit design		
2	Learn the basic concepts used in the digital domain like number systems, logic gates, Boolean algebra and K-maps etc		
3	Present hardware operation and circuit designs used in digital computers.		

Semester	I	Total Credit	4
Course Code	CC 102	Credit Pattern	L-45, T-8, P-7
Course Title	Software Engineering And Project Management		
Course Outcomes			
After completion of course student shall be able to			
1	Understand the principles of Software Engineering		
2	Apply Software Development Life Cycle		
3	Design and Testing S/W project		
4	Tasks tasks and concepts in project management.		
5	Use various metrics.		

Semester	I	Total Credit	4
Course Code	CC 103	Credit Pattern	L-45, T-8, P-7
Course Title	Object Oriented Programming with C++		
Course Outcomes			
After completion of this course the student will be able to:			
1	To write C++ programs using object oriented language features		
2	Utilize Object Oriented Programming concepts to design C++ programs.		
3	Develop industrial-strength, high-performance computer applications.		
4	To learn other object oriented programming languages		

Semester	I	Total Credit	4
Course Code	CC 104	Credit Pattern	L-45, T-8, P-7
Course Title	Web Design and Development		
Course Outcomes			
After completion of this course the student will be able to:			
1	Design and develop internet applications.		
2	Do JavaScript APIs.		
3	Use various tools for web services.		
4	Design and develop web application using PHP and MySQL		

Semester	I	Total Credit	4
Course Code	DSE-101	Credit Pattern	L-45, T-8, P-7
Course Title	A. Theoretical Computer Science		
Course Outcomes			
After completion of this course the student will be able to:			
1	Understand how compilers and programming languages are built		
2	Demonstrate knowledge of basic mathematical models of computation and describe how they relate to formal languages		
3	Apply knowledge of computing and mathematics appropriate to the discipline		

Semester	I	Total Credit	4
Course Code	DSE-101	Credit Pattern	L-45, T-8, P-7
Course Title	B. Cloud Computing		
Course Outcomes			
After completion of this course the student will be able to:			
1	Able to identify the architecture and delivery models of cloud computing.		
2	Able to identify infrastructure.		
3	Helps to understand security, privacy and interoperability issues.		
4	Enable to select suitable cloud player		
5	Enable to apply suitable virtualization concept		
6	Enable to implement cloud services and set a private cloud		

Semester	I	Total Credit	4
Course Code	DSE-101	Credit Pattern	L-45, T-8, P-7
Course Title	C. Information Security and Cryptography		
Course Outcomes			
After completion of this course the student will be able to:			
1	Provide security of the data over the network.		
2	Do research in the emerging areas of cryptography and Information security.		

Semester	I	Total Credit	4
Course Code	GE 101	Credit Pattern	L-45, T-8, P-7
Course Title	A. FUNDAMENTALS OF MANAGEMENT		
Course Outcomes: Students will be able to;			
1.	Discuss management evolution and how it can affect future managers		
2.	Analyze and attain elementary level of skills in management process and functions: planning, organizing, leading, deciding, motivating and controlling.		
3.	Evaluate leadership styles to anticipate the consequences of each leadership style		
4.	Describe concept of CSR.		

Semester	I	Total Credit	4
Course Code	GE 101	Credit Pattern	L-45, T-8, P-7
Course Title	B.ENVIRONMENT AND DEVELOPMENT		
Course Outcomes: The students will able to			
1.	Differentiate biotic and abiotic components of ecosystem & able to understand concept of habitat, interactions in between different components & their Interrelationships.		
2.	Develop ability of identification of local issues related with natural resources.		
3.	Adopt various pollution control techniques.		
4.	Students will know the protocol & prepare for EIA & EMS Reports.		
5.	Students will know various environmental policies as well as National & International Organizations involved.		

Semester	I	Total Credit	4
Course Code	GE-101	Credit Pattern	L-45, T-8, P-7
Course Title	C. Indian Social Problems and Social Services		
After completion of this course the student will be able to:			
1	Understand the application of various social/welfare services provided by GO's & NGO's in respect of Social Problems and Social Services.		
2	Identify the social economic factors and their implications in the implementation of social welfare schemes.		

Semester	I	Total Credit	4
Course Code	GE-101	Credit Pattern	L-44, T-08, P-08
Course Title	D. Principles of Economics		
Course Outcomes: Students will be able to			
1	The student will understand the application of economics an his personal and professional life.		
2	Identify the economic factors and their implications in the working of different organisations		

Semester	I	Total Credit	4
Course Code	AEC-101	Credit Pattern	L-45, T-8, P-7
Course Title	A. Design and Analysis of Algorithm		
Course Outcomes			
After completion of this course the student will be able to:			
1	Learn good principles of algorithm design.		
2	To analyze worst-case running times of algorithms using asymptotic analysis.		
3	Describe the Divide-and-Conquer, Bound and Branch-programming, greedy paradigm and explain when an algorithmic design situation calls for it.		
4	Explain the major graph algorithms and their analyses. Employ graphs to model problems.		

Semester	I	Total Credit	4
Course Code	AEC-101	Credit Pattern	L-45, T-8, P-7
Course Title	B. Mobile, Wireless and VoIP Security		
Course Outcomes			
After completion of this course the student will be able to:			
1	Interpret the impact of advancement in data transmission for wireless networks		

2	Outline the working of a real time wireless network
4	Analyse the evolution of risks and its impacts; give the recommendation
5	Analyse the security vulnerabilities that affect OS and how they can be controlled
6	Reproduce the data acquisition phase and illustrate with examples
7	Interpret the threats and security holes with VoIP call protocols H.323,SIP and MGCP
8	Interpret VoIP best practices to support risk mitigation
9	Outline and state the various steps involved in data extraction

Semester	II	Total Credit	4
Course Code	CC 201	Credit Pattern	L-45, T-8, P-7
Course Title	Operating System		
Course Outcomes			
After completion of this course the student will be able to:			
1	Capable of explaining the basic structure and functioning of operating system.		
2	Able to point the problems related to process management and synchronization as well as is able to apply learned methods to solve basic problems.		
3	Capable of explaining the cause and effect related to deadlocks and is able to analyze them related to common circumstances in operating systems.		
4	Able to explain the basics of memory management, the use of virtual memory in modern operating systems as well as the structure of the most common file-systems.		

Semester	II	Total Credit	4
Course Code	CC202	Credit Pattern	L-45, T-8, P-7
Course Title	Unix Internal and Linux		
Course Outcomes			
After completion of this course the student will be able to:			
1	Write shell script programs in Linux.		
2	Use various Filters and editors		
3	Create and manager file access permissions		
4	Use various system calls		
5	Administration of Linux system		

Semester	II	Total Credit	4
Course Code	CC 203	Credit Pattern	L-45, T-8, P-7
Course Title	.Net Programming		
Course Outcomes			
After completion of this course the student will be able to:			
1	The syntax and semantics of C# and procedural programming including variable definitions, arithmetic and boolean expressions, control structures, methods, subroutines, arrays, and references.		
2	Event-based programming and GUI design		
3	An idea of what objects are how to design programs using object-oriented design		
4	Database management using ADO.net and entity framework technologies		

Semester	II	Total Credit	4
Course Code	CC 204	Credit Pattern	L-45, T-8, P-7
Course Title	Data and File Structures		
Course Outcomes			
After completion of this course the student will be able to:			
1	Differentiate primitive and non-primitive structures		
2	Design and apply appropriate data structures for solving computing problems.		
3	Understand and use various file structures		

Semester	II	Total Credit	4
Course Code	DSE-201	Credit Pattern	L-45, T-8, P-7
Course Title	A. Big Data And Hadoop		

Course Outcomes			
After completion of this course the student will be able to:			
1	Master data loading techniques using Sqoop and Flume.		
2	Setup Hadoop Cluster and write Complex MapReduce programs		
3	Perform data analytics using Pig, Hive and YARN		
4	Implement best practices for Hadoop development		
5	Implement Advanced Usage and Indexing		
6	Schedule jobs using Oozie		
7	Work on a real life Project on Big Data Analytics		

Semester	II	Total Credit	4
Course Code	DSE-201	Credit Pattern	L-45, T-8, P-7
Course Title	B. Computer Graphics		
Course Outcomes			
After completion of this course the student will be able to:			
1	Present various aspects of computer graphics		
2	Design and develop graphics programming		
3	Build understanding and problem-solving skills required for graphics applications		

Semester	II	Total Credit	4
Course Code	DSE-201	Credit Pattern	L-45, T-8, P-7
Course Title	C. Ethical Hacking and Network Defense		
Course Outcomes			
After completion of this course the student will be able to:			
1	Will be able to identify the type of hacking attack		
2	Will be acquainted with ethical hacking skills		
3	Will be able to use various Protections of Network Security		
4	Will be able to handle DoS, Web and social engineering attacks And IPR		

Semester	II	Total Credit	4
Course Code	GE-201	Credit Pattern	L-45, T-9, P-6
Course Title	A. FUNDAMENTALS OF ACCOUNTING		
Course Outcomes			
	The students will able to learn:		
1.	How to exhibit the basic accounting concepts and its application.		
2.	To demonstrate basis of financial statements analysis.		
3.	To construct of working capital, ratio analysis and cost accounting.		

Semester	II	Total Credit	4
Course Code	GE-201	Credit Pattern	L-45, T-8, P-7
Course Title	B. DISASTER MANAGEMENT		
Course Outcomes: The students will able to			
1.	Know the fundamentals of Disaster Management		
2.	Do strategic Management for Natural Disasters.		
3.	Do strategic Management for Man Made & Technological Disasters.		
4.	Do Pre, Emergency & Post Disaster Management Plan.		

Semester	II	Total Credit	4
Course Code	GE-201	Credit Pattern	L-45, T-8, P-7
Course Title	C. Social Welfare and Administration		
Course Outcomes			
After completion of this course the student will be able to:			
1	Understand the application of various social/welfare services provided by GO's & NGO's in respect of systematic implementation of welfare policies		
2	Identify the administrative process and their implications in the implementation of social welfare schemes.		

Semester	II	Total Credit	4
Course Code	GE-201	Credit Pattern	L-45, T-8, P-7
Course Title	D. Principles of Microeconomics		
Course Outcomes			
After completion of this course the student will be able to:			
1	Understand the micro variables and approach for microeconomic issues		
2	Analyse the process of factor price determination at micro level		

Semester	II	Total Credit	4
Course Code	AEC-201	Credit Pattern	L-45, T-8, P-7
Course Title	A. Database Management system		
Course Outcomes			
After completion of this course the student will be able to:			
1	The learners will study how to do better database designing and which further enhances powerful and user friendly application development		

Semester	II	Total Credit	4
Course Code	AEC-201	Credit Pattern	L-45, T-8, P-7
Course Title	B. Cyber Forensics		
Course Outcomes			
After completion of this course the student will be able to:			
1	Understand security issues in a network.		
2	Understand computer forensics.		
3	Interpret forensics data.		