Department of Information Technology

B.Sc. Information Technology

S.No.	Course Code	Course Name	Course Outcomes
		SEMESTER- I	
1.	21UITC11	Core Course - I: Programming in C	**CO1[K1]:** identify the basic concepts of high level programming language **CO2[K2]:** classify the operations of input , output and decision making statements **CO3[K3]:** apply the concepts of functions and arrays for efficient execution of task **CO4[K4]:** analyze the methods of the pointers, structures and unions **C05[K4]:** examine the importance and usage of various concepts of file
2.	21UITC1P	Core Course - II: Practical: Programming in C	**CO1[K2]:** express the basic concepts and features of procedural oriented programming language **CO2[K3]:** compute the basic mathematical operations using operators **CO3[K3]:** determine the techniques of functions and structures to perform the task **CO4[K4]:**examine the ideas about the pointers to compute arithmetic operation **CO5[K4]:** inspect the concept of file by examining the various file operations

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3.	21UITS1P	Skill Enhancement Course – I: Practical: Office Automation and HTML	**CO1[K2]:** explain the different options and features of word document **CO2[K3]:** organize the data in excel by using the built-in formulas and graphs **CO3[K3]:** utilize the features of PowerPoint to develop slide presentation **CO4[K4]:**examine the basic of Office package and HTML tags for designing the attractive web pages **CO5[K6]:** design and create a simple web page using the basic HTML tags
SEMESTER- II			
4.	21UITC21	Core Course – III: Data Structures and Algorithms with C++	**CO1[K1]:** state the basic knowledge and the features of object oriented programming language **CO2[K2]:** explain the various techniques to perform the concept of class **CO3[K3]:** apply the data structure techniques to organize the data **CO4[K4]:** classify the data representation techniques to present the data **CO5[K4]:**analyse the efficiency of various algorithms to structure the data

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5.	21UITC2P	Core Course – IV: Practical: Data Structures and Algorithms using C++	**CO1[K3]**: utilize the features of OOPS to perform the basic operations **CO2[K3]**: apply the techniques of inheritance to implement the payroll system **CO3[K4]:** examine the various forms of linked list to perform data traversal **CO4[K4]:** analyse the various methods of sorting and organizing data **CO5[K5]:** evaluate the processing method of depth-first search algorithm to perform data traversal using graph
6.	21UITS2P	Skill Enhancement Course – II: Practical: Advanced Web Programming	**CO1[K2]:** interpret the concept of HTML to execute the form elements **CO2[K3]:** apply the different methods to use CSS for the web pages **CO3[K4]:** examine the different ways to incorporate the validation techniques **CO4[K4]:** analyse the concept of content loading in the web page using AJAX **CO5[K6]:** design and create a new professional web site
SEMESTER- III			

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7.	21UITC31	Core Course – V: Programming in Java	**CO1[K1]**: state the basic concepts and features of JAVA programming **CO2[K2]**:explain the methodology to implement class, objects, methods and JAVA packages **CO3[K3]**: implement the mechanism of multi-threading and exception handling to perform robustness task **CO4[K4]**: examine the usage of applets and AWT components to interpret the GUI interface. **CO5[K4]**: analyze the simple java applet application and formulate the database
8.	21UITC3P	Core Course – VI: Practical: Programming in Java	**CO1[K2]**: demonstrate the usage of classes, objects and interfaces in performing basic mathematical operations **CO2[K3]**: apply the concept of inheritance, overloading and overriding to perform the real-world task **CO3[K4]**: examine the different methodologies of implementing the constructor **CO4[K4]**: analyse the various mechanisms of exception and thread **CO5[K6]**: design and create interactive applications using applet, AWT components and JDBC

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9.	21UITA31	Allied Course – III: Digital Principles and Computer Organization	**CO1[K1]:** state the working flow of logic gates and boolean laws **CO2[K2]:** explain the functionality of data processing circuits, flip–flops to perform the binary operations **CO3[K3]:** apply the different methods of computer structures and instructions **CO4[K4]:** examine the I/O device accessing ,basic concepts of memories and its types **CO5[K4]:** classify the concept of pipelining and embedded systems
10.	21UITN31	Non Major Elective Course – I: Office Automation and E-Governance	**CO1[K1]**: state the usage of office package to implement the features of word **CO2[K2]**: explain the built-in formulas to prepare a data entry sheet **CO3[K3]**: utilize the components of power point to design a professional slide **CO4[K4]**: classify the various strategies in World Wide Web and E - Marketing **CO5[K4]**: examine the various methods of e-Payment systems

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11.	21UITS3P	Skill Enhancement Course – III: Practical: Digital Design	**CO1[K1]:** identify the various forms of digital ICs to perform logic gate operations **CO2[K3]:** illustrate various mechanisms to implement the universal gates **CO3[K3]:** apply the techniques of Boolean laws to simplify the digital circuits **CO4[K4]:** examine the concept of combinational circuits by using adders and subtractors **CO5[K5]:** justify the data flow of digital circuits to make counters and flip flop
SEMESTER- IV			
12.	21UITC41	Core Course – VII: Relational Database Management System	**CO1[K1]:** identify the basic concepts of database systems and relational model **CO2[K2]:** classify design principles to design a database using E-R model **CO3[K3]:** formulate the techniques of other related calculus languages **CO4[K4]:** analyze the efficiency of different normal forms of a database **CO5[K4]:** examine the importance and usage of various concurrency controls

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13.	21UITC4P	Core Course – VIII: Practical: Relational Database Management System	**CO1[K2]:** express the basic concepts of database **CO2[K3]:** develop programs using the simple queries and built in functions. **CO3[K3]:** apply data Integrity constraints to design a secure database **CO4[K4]:** analyse the basic of PL/SQL to integrate the SQL queries **CO5[K4]:** inspect the concept of functions, packages, stored procedures and user - defined exception
14.	21UITA41	Allied Course – IV: Numerical Aptitude	**CO1[K1]:** state appropriate arithmetical methods to solve the problem **CO2[K2]:** explain the various mathematical concepts involved in solving the problems **CO3[K3]:** formulate the real life situations to analyze the key issues and factors **CO4[K4]:** classify the various mathematical shortcut techniques to solve problems **CO5[K4]:** examine the importance of comparative analysis of the data

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15.	21UITN41	Non Major Elective Course – II: System Administration and Maintenance	**CO1[K1]:** describe the components of computer system **CO2[K2]:** illustrate the installation mechanism to assemble the hardware components **CO3[K3]:** discover the operating system based on customer needs to maintain the hardware **CO4[K4]:** examine the components of desktop and the laptop **CO5[K4]:** analyse the efficiency of different network topologies and for to ensure the system security
16.	21UITS4P	Skill Enhancement Course – IV: Practical: Soft Skill Training	**CO1[K1]:** describe effectively the basic traits of soft skills **CO2[K2]:** explain the importance of goal setting and preparations to achieve the goals **CO3[K3]:** apply the interpersonal skills necessary for being a team leader **CO4[K4]:** analyse the qualities of effective team building and leadership **CO5[K4]:** develop essential soft skills required for group discussion and Interviews
17.	21UITM41	Self-Paced Learning (Swayam Course): Advanced Computer Architecure	**CO1[K1]:**identify the basic concepts of advanced computer architecture **CO2[K2]:** demonstrate independent and self-paced learning for clear understanding of the concept **CO3[K3]:**develop computer and communication skill to broaden their knowledge in the course **CO4[K3]:**use high quality reading resources, communication tools and technology to send assignments and to take up test **CO5[K4]:**analyse critically and apply technical skills to comprehend the ideas prescribed

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18.	21UITM42	Self-Paced Learning (Swayam Course): Introduction to Soft Computing	**CO1[K1]:**identify the basic concepts of introduction to soft computing **CO2[K2]:**demonstrate independent and self-paced learning for clear understanding of the concept **CO3[K3]:**develop computer and communication skill to broaden their knowledge in the course **CO4[K3]:**use high quality reading resources, communication tools and technology to send assignments and to take up test **CO5[K4]:**analyse critically and apply technical skills to comprehend the ideas prescribed
SEMESTER- V			
19.	21UITC51	Core Course – IX: Operating System	**CO1[K1]:** state the basic concept and features of operating system **CO2[K2]:** identify the performance of different algorithms for scheduling a task **CO3[K3]:** apply the prevention techniques to implement deadlock prevention **CO4[K4]:** classify the methodology involved in memory management **CO5[K4]:** examine the methods involved in organizing a file in a disk

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20.	21UITC52	Core Course – X: Open Source Technology	**CO1[K1]:** state the basic concepts and features of PHP **CO2[K2]:** explain the usage of PHP functions and form elements **CO3[K3]:** utilize the concepts of regular expressions, debugging and errors **CO4[K4]:** classify the implementation techniques of CodeIgniter framework **CO5[K4]:** examine the techniques for creating an optimized web page with database interaction
21.	21UITC5P	Core Course – XI: Practical: Operating System and Network	**CO1[K1]:** state the basic concepts of shell programming. **CO2[K2]:** explain the usage of simple directory operations and file commands **CO3[K3]:** apply the different methods of UNIQ, SED and GREP commands **CO4[K4]:** examine the different client server technologies involved in TCP and UDP sockets **CO5[K6]:** create a new chat environment using client server technology
22.	21UITC5Q	Core Course – XII: Practical: Mobile Application Development	**CO1[K2]:**illustrate the basic components of android **CO2[K3]:** apply the interactive tools to perform form actions **CO3[K4]:**analyse the different methodologies to integrate the map **CO4[K4]:** examine the various protocols to send group mails **CO5[K6]:** design and create new professional mobile applications

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23.	21UITO51	Major Elective Course – I: Wireless Networks	**CO1[K1]:** identify the basic concepts of wireless network **CO2[K2]:** illustrate the different concepts of IP and mobile IP protocols **CO3[K3]:** apply the usage of network protocols, topologies, ad hoc and sensor networks **CO4[K4]:** analyzes wireless channel and evolve the system design specifications **C05[K4]:** examine the 4G technologies and its protocols
24.	21UITO52	Major Elective Course – I: Computer Graphics and Multimedia	**CO1[K1]:** state the basic features of computer graphics **CO2[K2]:** explain the various primitives involved in drawing shapes **CO3[K3]:** apply the various techniques and properties of graphics primitives **CO4[K4]:** examine the different media elements to present the information **CO5[K4]:** classify the methods and devices used for signal transmission
25.	21UITO53	Major Elective Course – I: Cloud Computing	**CO1[K1]:** state the basic concepts of cloud computing and its architecture **CO2[K2]:** explain the applications of cloud and different types of cloud services **CO3[K3]:** apply the methods of the different cloud based storage **CO4[K4]:** analyze the cloud virtualization and cloud security concepts **CO5[K4]:** compare the different types of web services in the real time world

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26.	21UITO54	Major Elective Course – II: Computer Networks	**CO1[K1]:** identify the basic components of the network **CO2[K2]:**illustrate the usage of switching and data signal transmissions **CO3[K3]:** apply the techniques of data link protocol to detect and handle the error **CO4[K4]:**examine the deficiency of various network layer protocols and routing algorithms **CO5[K4]:** classify the methodologies involved in internet transport protocol and network security
27.	21UITO55	Major Elective Course – II: Neural Networks	**CO1[K1]:** state the basic terminology of neurons **CO2[K2]:** explain the techniques involved in simulating the signal **CO3[K3]:** apply the neural network models to handle uncertainty of data **CO4[K4]:** examine the CPN methods for image classification and data processing **CO5[K4]:** classify the various methodologies of SOM
28.	21UITO56	Major Elective Course – II: Ethical Hacking	**CO1[K1]:** state the basic terminology of hacking and Linux environment **CO2[K2]:** explain the different methodologies in gathering information **CO3[K3]:** utilize the various techniques for prevention of vulnerability **CO4[K4]:** examine the exploitation methods involved in network and documents **CO5[K4]:** classify the various attacks involved in web application

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29.	21UITS5P	Skill Enhancement Course – V: Practical: Open Source Technology	**CO1[K2]:** demonstrate the basic HTML tags by embedding with PHP **CO2[K3]:** apply the concepts of array to organize the items and to perform string operations using string functions **CO3[K3]:** utilize the basic form libraries of CodeIgniter **CO4[K6]:** construct a secure database application with PHP and MySQL **CO5[K6]:** design and create a secure web application using CodeIgniter
SEMESTER- V			
30.	21UITJ51	Internship	**CO1[K2]**: demonstrate the project development tools used in IT industry **CO2[K3]**: apply the acquired technical skill to create professional applications **CO3[K3]**: utilize both software and hardware required for each applications **CO4[K4]**: classify the development cycles involved in developing a software **CO5[K6]**: design and create the real time software related to IT industry
SEMESTER- VI			

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31.	21UITC61	Core Course – XIII: Software Engineering	**CO1[K1]:** define the appropriate process model to develop a software **CO2[K2]:** explain the principles involved in gathering and validating software requirements and cost factors **CO3[K3]:**utilize the various software design models **CO4[K4]:** examine and compare the efficiency of different methods in testing **CO5[K4]:** simplify the methods involved in managing resources and software maintenance
32.	21UITC62	Core Course – XIV: Programming in Python	**CO1[K1]:** describe the basic features of Python programming **CO2[K2]:** explain the concept of modules, packages and OOPs **CO3[K3]:** apply the concepts of data types, control structures and functions **CO4[K4]:** classify the different methodologies of strings and data structures **CO5[K4]:** examine the usage of file handling, debugging, testing and profiling
33.	21UITC63	Core Course – XV: IOT and Big Data Computing	**CO1[K1]:** describe the different dimensions of digital data. **CO2[K2]:** explain the characteristics of different patterns of data **CO3[K3]:** apply the different classification techniques to organize the data **CO4[K4]:** classify the different scenarios of HADOOP framework **CO5[K4]:** examine the efficiency of algorithms involved in data clustering

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34.	21UITC6P	Core Course – XVI: Practical: Python Programming	**CO1[K2]:** express the basic terminologies involved in Python **CO2[K2]:** illustrate the usage of statements and expressions **CO3[K3]:** utilize the concept of sequences, string and built-in-function **CO4[K4]:** examine the different ways of debugging in python **CO5[K6]:** create a simple application by integrating the concept of database
35.	21UITJ61	Core Course – XVII: Project	**CO1[K1]:** identify the problems with the help of programming concepts in current scenario **CO2[K2]:** explain the working environment such as software applications. embedded systems and web services **CO3[K3]:** apply the entire project design based on the requirements of the domain **CO4[K5]:** justify and evaluating the various testing techniques to implement the project **CO5[K6]:** develop skills in report writing through data collection, data analysis, data extraction and presentation
36.	21UITO61	Major Elective Course – III: Data Mining and Data Warehousing	**CO1[K1]:** describe the data warehouse concepts and various OLAP operations **CO2[K2]:** interpret data mining problems and different types of data mining techniques **CO3[K3]:** develop data mining algorithms to build analytical applications. **CO4[K4]:** analyze large amount of data to extract patterns and to solve problems **CO5[K4]:** examine various mining techniques and the importance of the techniques

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37.	21UITO62	Major Elective Course – III: Cryptography and Network Security	**CO1[K1]:** state the basic functionality of hash functions **CO2[K2]:** explain the various methodologies involved in wireless security **CO3[K3]:** apply different algorithms to implement encryption and decryption **CO4[K4]:** examine the usage methodologies of block cipher **CO5[K4]:**analyse the efficiency of public key algorithm to secure data transfer
38.	21UITO63	Major Elective Course – III: System Software	**CO1[K1]:** describe the major tasks of the system software of a computer system **CO2[K2]:** illustrate the focusing on internal working of the hardware and software interface of a typical system **CO3[K3]:** apply the working mechanism of system software such as assemblers linkers, loaders. **CO4[K4]:** classify the dependent and independent macro processor **CO5[K4]:** analyze and demonstrate the editing and debugging tools
39.	21UITS6P	Skill Enhancement Course – VI: Practical: R Programming	**CO1[K1]:** describe the basic concept of R program **CO2[K2]:**explain the various methods of built in functions and operators **CO3[K3]:** apply the functions and control statements to perform mathematical operations **CO4[K4]:** analyse the efficiency of the built-in functions cbind() and rbind() **CO5[K4]:** examine the methodologies to organize the elements using vector and list