Name of the Department: Information Technology
Programme : UG

S.no	Course code	Course name	Course outcome
SEMESTER I			
1.	15UITC11	Core – I: Programming in C	• Gaining experience about structured programming • Helping students to understand the implementation of C language • Familiarizing the students with basic concepts of computer programming • Understanding the syntax and semantics of the "C" language as well as data types offered by the language • Allowing the students to write their own programs using standard language infrastructure regardless of the hardware or software platform • Providing ability to work with characters and strings. • Letting the students to know the power of Modular Programming through Functions • Providing skills to use Pointers for dynamic programming • Enhancing the knowledge on storage through using Files
2.	15UITC1P	Core – II: Programming in C Lab	• Letting the students to learn C programming language through practical experience • Providing students the ability to solve complex problems in a reasonable time • Learning problem solving techniques in C • Equipping the students to debug their own programs • Understanding how to implement Programs with pointers and arrays • Performing various operations on Strings • Providing ability to work with Functions • Providing knowledge on programming with Structures • Enabling students to learn File concept
3.	15UITN11	Non Major Elective Course – I : Principles of Information	• Introduce the importance of Information in IT • Understand the Evolution of computers • Explain a beginner how computer works • Understand the various software and hardware

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		Technology	components of computer • Understanding the networks concept • Creating awareness about Internet and its purpose • Learning various protocols on Internet • Allowing students to know about E-Mail and other internet accounts
4.	15UITE1P	Enrichment Course – I: DTP Lab	• Getting basic knowledge on Corel Draw • Understanding the local needs of learning a designing package • Improving the skills of graphics creation • Introducing text effects for various illustrations • Understanding graphic formats and conventions that gives publications a quality look • Writing and editing a basic shape to create a different figure • Learning how to design a certificate with transparent backgrounds • Developing logos and badges to improve own creativity • Providing skills to design invitations and banner • Learning how to design a Calendar • Learning zipper &twister effects of shapes
		SEMESTER II	
1.	15UITC21	Core – III: Object Oriented Programming With C++	• Understanding how C++ improves C with object-oriented features • Learning the syntax and semantics of the C++ programming language. • Learning how to write inline functions for efficiency and performance • Learning how to design C++ classes for code reusability • Learning how to implement copy constructors and class member functions • Learning how to overload functions and operators in C++. • Learning how containment and inheritance promote code reuse in C++. • Learning how inheritance and virtual functions

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			implement dynamic binding with polymorphism • Understanding the concept of data abstraction and encapsulation • Learning how to design and implement generic classes with C++ templates. • Learning how to use exception handling in C++ programs. • Learning how to work with strings in C++ programming language
2.	15UITC2P	Core – IV: Object Oriented Programming With C++ Lab	• Improving problem solving skills using C++ • Understanding the difference between C structures and C++ classes • Enabling the students to effectively use Constructors & Destructors • Implementing programs to obtain Overloading concept • Learning the concept of various Inheritance techniques • Implement Friend Functions to understand the code reusability in C++ • Learning exception handling mechanisms • Implement file concepts using C++
3.	15UITN21	Non Major Elective Course – II: Office Automation	• Giving knowledge of computer fundamentals • Introducing Windows OS and its Accessories • Achieving better typing and editing documents through Word that helps to improve quality of document • Learning the Mail Merge concept • Simplifying operations and minimizing manual errors by using Excel • Understanding how to present data for better communication through Excel • Helping Data management using Access • Gaining the presentation ability through Power point
4.	15UITE2P	Enrichment Course – II: PC Software Lab	• Giving knowledge on MS Office package • Learning to insert pictures to create advertisements • Designing newspaper with header & footer • Learning how to do Mail Merge practically

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			• Understanding the concept of Macros
			• Providing ability to understand Excel functions
			• Understanding the graphical representation of compact data using Excel charts
			• Providing better skill to effectively use Power point for presentation
			• Learning the main use of Access for storage and retrieval through queries
SEMESTER III			
1.	15UITC31	Core – V: Data Structures and Algorithms	• Understanding the basic concepts of data structures and algorithms • Understanding the concepts about searching and sorting techniques • Learning basics about dynamic data structure • Knowing about algorithm design paradigm based on multi-branched recursion • Understanding the concepts of Stack & Queue • Gaining knowledge on Trees • Learning different approaches like Divide & Conquer, Dynamic Programming, Greedy and Backtracking • Learning algorithms which are used to give optimal solutions to every problem
2.	15UITC3P	Core – VI: Data Structures and Algorithms lab	• Improving the ability of students to choose appropriate data structure as applied to specified problem definition • Getting knowledge on efficient storage mechanisms of data for an easy access • Knowing the different searching algorithms • Making the students to be able to use linear and non-linear data structures like stacks, queues • Understanding simple sorting algorithms that repeatedly sort • Learning complex sorting algorithms that produce less time complexity than other algorithms • Understanding various linked list concepts • Evaluating data through Trees
3.	15UITA31	Allied – III: Digital	• Applying the principles of Boolean algebra to

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		Principles and Computer Organization	manipulate and minimize logic expressions • Understanding the basic principles of Digital Systems • Designing logic functions with AND, OR, NAND, NOR and XOR gates with minimum number of gate delays or literals. • Understanding the use of K-maps to minimize and optimize two-level logic functions • Analyzing the operation of sequential circuits that built with various flip-flops • Understanding the operations of state-of-the-art components to design and build complex digital systems. • Understanding the concepts of data paths, control units, and micro-operations and building blocks of digital systems • Articulating how modern microelectronics has impacted society
4.	15UITS3P	Skill Based Course – I: Digital Principles Lab	• Getting good knowledge about the concepts of digital electronics • Exploring the process of all logic gates • Training students with all the equipments which will help in improving the basic knowledge on gates • Demonstrating circuit operation that can be implemented in properly constructed digital circuits • Gaining knowledge on applying theorems • Understanding the implementation of sequential digital logic circuits • Analyzing a circuit and compare its theoretical performance with actual performance
5.	15UITV31	Value Based Course – I: Management Information System	• Understanding the purpose of analytical and reflective skills in decision making • Improving communication effectively in both orally and in writing • Recognizing legal and ethical issues of a firm • Contributing to the performance of a group within a business setting • Knowing the differences among global economies,

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			institutions, business practices and cultures • Analyzing and gathering requirements and design systems • Understanding of develop, control and manage projects
SEMESTER IV			
1.	15UITC41	Core – VII: RDBMS	• Providing a sound introduction to the discipline of database management • Familiarizing the students with the uses of database environments towards an information-oriented data-processing framework • Giving an introduction to systematic database design approaches covering conceptual design, logical design and an overview of physical design • Giving a good formal foundation on the entity relationship model of data • Familiarizing with the process of organizing the attributes and relations of relational database to reduce data redundancy and improve data integrity • Presenting the concepts and techniques related to query processing by SQL engines • Getting familiar with procedural language as extension to standard SQL • Providing a way to execute procedural logic on the database • Learning to use PL/SQL program associated with specific database table to implement various concepts
2.	15UITC4P	Core – VIII: RDBMS Lab	• Familiarizing with query language • Giving a good formal foundation on the relational model of data • Having a good understanding of DML commands and DCL commands • Presenting the concepts and techniques related to query processing by SQL engines • Familiarizing advanced SQL queries • Letting student to define own exceptions according to the need of program

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			• Understanding cursor programming concept • Presenting the concepts and techniques relating to ODBC and its implementations • Enabling student to familiar with "business logic" • Learning to create own functions • Understanding of programming in PL/SQL using various concepts
3.	15UITA4P	Allied Course – IV: Unix Lab	• Learning basic Unix commands • Understanding the concept of C Programming with Unix • Getting knowledge on various shell commands used in files • Understanding the SED command and its purpose • Learning ideas about using the AWK and Grep commands • Getting knowledge on Directory structure commands • Understanding the difference between programming in Windows and Unix platforms • Enabling students to write their own shell scripts for various concepts • Demonstrating the Unix OS structure through wide variety of commands • Understanding the major difference between commands of same category and performance
4.	15UITO41	Optional / Elective Course – I: 1. Operating System	• Learning the fundamentals of Operating Systems • Understanding the structure and services of operating system • Learning the mechanisms to handle process and its communication • Knowing scheduling systems of CPU • Providing the knowledge of basic concepts towards process synchronization and related issues • Gaining knowledge on handling multi processor problems • Getting knowledge on distributed systems • Learning the memory management capabilities of OS • Studying about methods and data structures that are

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			used by OS
			• Understanding the I/O devices used by system to communicate with OS
5.	15UITO42	Optional / Elective Course – I: 2. Artificial Intelligence	• Knowing of Artificial Intelligence techniques • Understanding the development of computer functions associated with human intelligence • Getting knowledge on AI techniques • Learning basics about knowledge representation and its issues • Understanding the well designed game playing systems • Understanding of syntactic processing, semantic analysis of Natural Language Processing • Learning the mental phenomena by interconnected networks of simple and uniform units • Providing ability to solve complex problems by reasoning about knowledge • Learning expert system and robot architecture
6.	15UITO43	Optional / Elective Course – I: 3. Compiler Design	• Introducing various phases of compiler design • Learning the basics of compiler which convert high level language into low level language • Understanding lexical analysis • Familiarizing with parsers which uses semantic analyzer • Identifying the similarities and differences among various parsing techniques • Providing knowledge on address codes • Understanding the exact compilation process • Knowing about optimizer used to reduce the size of program
SEMESTER V			
1.	15UITC51	Core – IX: Programming in Java	• Learning the basic concept of Java Programming • Understanding how to use Java in day to day applications • Learning basics like loops, arrays, input/output structures, events, exceptions, and threads. • Understanding various forms of data, control and object structures supported by the Java language

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			• Recognizing similarities and common characteristics between Java and other programming languages • Understanding the interaction with Files in Java • Learning the importance of AWT • Understanding the graphical user interface components. • Providing knowledge on developing and implementing applets • Gaining knowledge on Networking using Java
2.	15UITC5P	Core – X: Programming in Java Lab	• Understanding the basic fundamentals of Programming such as variables, conditional and iterative execution, methods etc. • Learning Java Programming with object-oriented concepts • Knowing how to use Java's API in applications. • Understanding abstract data types, encapsulation, inheritance and polymorphism • Understanding the concept file operations • Learning about the applet programs with thread implementation • Studying the concepts of AWT components • Learning how to use Threads • Introducing knowledge on testing, documenting and preparing a professional looking Package • Learning the implementation of Applets • Knowing about exception handling mechanisms and Networking through Java.
3.	15UITC52	Core – XI: Dot Net Programming	• Setting up a programming environment for VB.net programs. • Understanding of configuringanVB.net application. • Understanding the features of .Net frameworks • Creating ASP.Net applications using standard .net controls. • Developing a data driven web application. • Connecting to data sources and managing them. • Maintaining session and controls related information for user used in multi-user web applications • Understanding the fundamentals of developing

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			modular application by using object oriented methodologies • Improving proficiency in C# by building stand-alone applications in the .NET framework using C#. • Creating distributed data-driven applications using the .NET Framework, C# and ADO.NET • Creating web-based distributed applications using C#, ASP.NET and ADO.NET
4.	15UITC5Q	Core – XII: Dot Net Programming Lab	• Understanding .NET Framework and describing some of the major enhancements to the new version of Visual Basic. • Describing the basic structure of a Visual Basic.NET features of the integrated development environment (IDE) • Creating applications using Microsoft Windows Forms • Learning how to use Crystal Reports • Understanding and using the concepts of objects, primitive value, message, method, selection control structure, repetition control structures, object reference, container, and method parameter • Developing a working knowledge of C# programming constructs and the .NET Framework. • Building and debugging well-formed Web Forms with ASP. NET Controls. • Creating applications that use ADO. NET • Using ADO.NET in a web application to read, insert, and update data in a database
5.	15UITO51	Optional / Elective Course – II: 1. Computer Networks	• Explaining how communication works in computer networks and to understand the basic terminology of computer networks • Explaining the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack. • Providing students with an overview of the concepts and fundamentals of data communication and computer networks • Familiarizing with the basic taxonomy and

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			terminology of computer networking area.
			• Experiencing the designing and managing of communication protocols while getting a good exposure to the TCP/IP protocol suite
			• Understanding Routing mechanisms
			• Becoming familiar with mechanisms and protocols for reliable data communications in various computer network architectures.
			• Studying about the Network architecture OSI, TCP/IP etc.
			• Learning about the Protocols HTTP and FTP and protocol designs.
			• Knowing about the Network applications in each layer.
6.	15UITO52	Optional / Elective Course – II: 2. Client/Server Computing	• Defining a client/server network.
			• Describing how the hardware and software are combined to implement Client/server computing.
			• Implementing the current client/server standards.
			• Describing the basic client/server models.
			• Demonstrating the concepts of a typical client operating system.
			• Implementing typical client software.
			• Demonstrating the difference between client and server hardware technology.
			• Demonstrating the uses of client/server software and hardware.
			• Understanding the different Server OS
			• Defining the role of Backup & recovery mechanisms
7.	15UITO53	Optional / Elective Course – II: 3. Neural Networks	• Understanding the role of neural networks in engineering, artificial intelligence, and cognitive modeling.
			• Providing knowledge of supervised learning in neural networks
			• Providing knowledge of computation and dynamical systems using neural networks
			• Providing knowledge of reinforcement learning using neural networks.
			• Learning about different memory definitions

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			• Knowing about the concepts of hands-on experience in selected application • Understanding the basic signal processing. • Realizing the basic neural network models • Studying about counter propagation networks • Knowing about Self Organizing Maps
8.	15UITS5P	Skill Based Course – III: Soft Skill Training	• Helping the students to understand interpersonal skills. • Enhancing holistic development of students and improve their employability skills. • Supporting students in building interpersonal skills. • Giving better the ability to work with others. • Developing inter personal skills to be an effective goal oriented team player. • Developing professionals with idealistic, practical and moral values. • Developing communication and problem solving skills. • Understand Re-engineering attitude and its influence on behavior. • Developing effective communication skills • Developing effective presentation skills.
9.	15UITS5Q	Skill Based Course – IV: Network Programming Lab	• Mastering the terminology and concepts of the OSI reference model and the TCP- IP Reference model. • Mastering the concepts of UDP & TCP protocols, • Understanding network interfaces and design/performance issues in networks • Familiarizing with client/server concept • Familiarizing with contemporary issues in networking technologies • Introducing network tools and network programming through sockets • Providing knowledge on connection less and connection oriented services • Introducing the layer concept through C Programming • Understanding a single client/server and multi client/server technologies

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10.	15UITJ5P	On Job Training	• Providing self confidence to handle a major project • Allowing students to have a pre experience of writing an abstract • Introducing recent techniques to do a project easily and usefully • Helping students to understand the company environment • Analyzing students performance through their Record submission • Making students to have different ideas over different projects • Giving exposure to new hardware / software • Understanding the capabilities of a developer • Making the students more vigilance in selecting their major project
		SEMESTER VI	
1.	15UITC61	Core – XIII: Web Technology	• Demonstrating competency in the use of common HTML code. • Understanding XML and its purpose • Creating web pages using DHTML. • Constructing pages that meet the needs of an identified audience. • Understanding various Script languages like VBScript, Javascript • Demonstrating proficiency in the use of a WYSIWYG design software. • Learning how to embed scripts within a HTML code • Creating web pages using PHP and Java script • Understanding how CSS affects web page creation.
2.	15UITC6P	Core – XIV: Web Technology Lab	• Designing and implementing dynamic websites with good aesthetic sense • Getting a good grounding of Web Application Terminologies, Internet Tools, E – Commerce and other web services. • Designing web pages through code using HTML and DHTML. • Understanding how to use Dream Weaver IDE • Familiarizing the concept Scripting.

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			• Understanding the usage of JavaScript and VBScript • Providing knowledge on Event Handling and Validation • Learning PHP syntax, variables, loops and constructs. • Learning XML Technologies • Understanding CSS with HTML.
3.	15UITC62	Core – XV: Software Engineering	• Providing an ability to apply knowledge of mathematics, science, and engineering. • Creating an ability to design and conduct experiments, as well as to analyze and interpret data. • Learning different stages in software development • Giving an ability to design a system, component, or process to meet desired needs within realistic constraints • Introducing an ability to function on multi-disciplinary teams. • Providing an ability to identify, formulate, and solve engineering problems. • Understanding of professional and ethical responsibility. • Giving an ability to design software effectively. • Providing the broad education necessary to understand the impact of engineering solutions • Educating the techniques on software testing • Giving knowledge of software maintenance.
4.	15UITO61	Optional / Elective Course – III: 1. Data Mining & Data Warehousing	• Introducing the basic concepts of Data Warehouse and Data Mining techniques. • Getting knowledge on OLAP operations. • Discovering interesting patterns and analyze supervised and unsupervised models and estimate the accuracy of the algorithms. • Processing raw data to make it suitable for various data mining algorithms. • Discovering and measure interesting patterns from different kinds of databases. • Applying the techniques of clustering, classification, association finding, feature selection and

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			visualization to real world data.
			• Understanding various algorithms in DM
			• Developing practical work of DM techniques and design hypotheses based on the analysis to conceptualize a DM solution to a practical problem.
			• Learning different clustering techniques.
			• Exploring Data mining and data ware housing applications in bio informatics
5.	15UITO62	Optional / Elective Course – III: 2. Cloud Computing	• Understanding Infrastructure and operations
			• Identifying the cloud-computing-related IT services
			• Documenting the internal processes that will be affected by the identified cloud services.
			• Mapping applications and workloads to the associated cloud services.
			• Delivering a commitment of quality of work to the public
			• Protecting information resources from supply chain threats.
			• Securing assurances associated with the hardware and software used.
			• Learning different services offered by Cloud
			• Preventing unauthorized access to cloud computing infrastructure resources.
			• Expertise of service delivered by our well trained professional personnel
			• Understanding real time cloud based web services
6.	15UITO63	Optional / Elective Course – III: 3. Embedded Systems	• Understanding the basics of embedded system, processor architecture
			• Knowing network devices and communication buses, device drivers
			• Knowing about applying programming concept to embedded devices using C and C++
			• Understanding the program modeling concepts
			• Knowing the processes, threads and inter process communications
			• Enriching real time operating system and its services, process management
			• Understanding the functionalities of Real time OS

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			- Providing introduction to IPC for modeling concepts - Giving knowledge on Processor and Memory organization - Explaining real word interfacing techniques
7.	15UITS61	Skill Based Course – V: Biometrics and Information Security	- Understanding basics of biometric and its policy - Knowing Biometric technologies through interaction with finger biometric - Understanding the impact biometric authentication like face, voice, Iris - Knowing various classical encryption techniques - Knowing cryptography methods like public key - Knowing message authentication and hash functions - Learning various cryptographic algorithms - Enforcing students to follow basic bio metric techniques to protect information - Introducing various techniques for information security - Giving knowledge on security risks
8.	15UITV6P	Value Based Course – II: Multimedia Lab	- Understanding the package Adobe Photoshop - Designing different shapes - Providing knowledge on moving pictures and stable pictures - Stimulating students to create wide variety of animations of their own - Making students to create interesting edited images - Allowing students to improve their designing skill - Giving ideas on Macromedia Flash - Introducing various techniques to video editing - Providing knowledge on flash buttons - Making students to create interesting patterns behind their own website designs