KONGUNADU ARTS AND SCIENCE COLLEGE

(AUTONOMOUS)

COIMBATORE – 641 029

DEPARTMENT OF COMPUTER TECHNOLOGY

COURSE OUTCOMES (CO)

For the students admitted in the Academic Year 2021-2022

Sub. Code **: 21UCT101**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the Paper : **Core Paper 1 – C Programming**			
Batch 2021-2022	**Hours/Week** 5	**Total Hours** 75	**Credits** 4

Course Objectives

1. To impart adequate knowledge on the need of programming languages and problem solving techniques.
2. To develop an in-depth understanding of functional and logical concepts of C Programming.
3. To provide exposure to problem-solving through C programming.
4. To familiarize the basic syntax and semantics of C Language.

Course Outcomes (CO)

K1 to K5	CO1	Recollect various programming constructs and to develop C programs.
	CO2	Understand the fundamentals of C programming.
	CO3	Choose the right data representation formats based on the requirements of the problem.
	CO4	Analyze different Operations on arrays, functions, and pointers,
	CO5	Evaluate the usage of structures, unions and files.

Sub. Code : **21UCT1CL**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Practical 1 – C Programming Lab**			
Batch 2021-2022	**Hours/Week** 5	**Total Hours** 75	**Credits** 2

Course Objectives

1. To introduce the field of programming using C language.
2. To enhance the analyzing and problem solving skills and use the same for writing programs in C.

Course Outcomes (CO)

K3 to K5	CO1	Develop logical and programming skills using the fundamentals and basics of C Language.
	CO2	Apply effective usage of arrays and strings.
	CO3	Implement functions to arranging set of values using different sorting techniques.
	CO4	Apply pointers to perform memory management.
	CO5	Implement files and command line arguments.

Sub. Code : **21EVS101**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper: **Part – IV – Environmental Studies**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	2

Course Objectives

- The course will provide students with an understanding and appreciation of the complex interactions of man, health and the environment. It will expose students to the multi-disciplinary nature of environmental health sciences.
- To inculcate knowledge and create awareness about ecological and environmental concepts, issues and solutions to environmental problems.
- To shape students into good "Eco citizens" thereby catering to global environmental needs.
- This course is designed to study about the types of pollutants including gases, chemicals petroleum, noise, light, global warming and radiation as well as pollutant flow and recycling and principles of environmental pollution such as air, water and soil.
- The course will address environmental stress and pollution, their sources in natural and workplace environments, their modes of transport and transformation, their ecological and public health effects, and existing methods for environmental disease prevention and remediation.

Course Outcomes (CO)

On successful completion of the course, the students will be able to

K1 to K5	CO 1	Understand how interactions between organisms and their environments drive the dynamics of individuals, populations, communities and ecosystems.
	CO2	Develop an in depth knowledge on the interdisciplinary relationship of cultural, ethical and social aspects of global environmental issues.
	CO3	Acquiring values and attitudes towards complex environmental socio-economic challenges and providing participatory role in solving current environmental problems and preventing the future ones.
	CO4	To gain inherent knowledge on basic concepts of biodiversity in an ecological context and about the current threats of biodiversity.
	CO5	To appraise the major concepts and terminology in the field of environmental pollutants, its interconnections and direct damage to the wildlife, in addition to human communities and ecosystems.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 2 – Digital Logic and Circuit Designs**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	4	60	4

Course Objectives

1. The students should get the Knowledge about the Number System, Number representation and Number Conversion.
2. To learn the concept of Digital Circuits, Circuit Constructions and Simplifications of Boolean functions.
3. To know the concept of Arithmetic Circuits, Combination Circuits, Counters and Registers.

Course Outcomes (CO)

K1 to K5	CO1	Retain the information about the Computer Number systemsand conversions in Digital Computer System.
	CO2	Understand the concepts of Boolean expressions, Logic Gates and to apply the methods to simplifying the Boolean expression.
	CO3	Apply the knowledge to perform arithmetical operations using various logical circuits and to design various Synchronous and Asynchronous.
	CO4	Analyse the function of Counters and Registers.
	CO5	Evaluate the working nature of various Flip-Flops and Circuits.

Sub. Code : **21UCT203**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 3 – Object Oriented Programming with C++**			
Batch 2021-2022	**Hours/Week** 3	**Total Hours** 45	**Credits** 4

Course Objectives

1. To develop a greater understanding of the issues involved in programming language design and object oriented paradigms and its implementation.
2. To impart adequate knowledge on the need of object oriented programming languages.
3. To enhance problem solving and programming skills in C++ by implementing the object oriented concepts.

Course Outcomes (CO)

K1 to K5	CO1	Remember the characteristics of Procedure and Object Oriented Programming Languages.
	CO2	Understand the fundamentals of C++ programming structure, function overloading and constructors.
	CO3	Examine different C++ features such as composition of objects, Operator overloading and inheritance.
	CO4	Analyse the performance of run-time polymorphism using pointers and virtual functions.
	CO5	Evaluate the usage of object oriented programming in terms of software reuse and managing complexity to solve real-world problems.

Sub. Code : **21UCT2CM**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Practical 2 – Object Oriented Programming with C++ Lab**			
Batch 2021-2022	**Hours/Week** 3	**Total Hours** 45	**Credits** 2

Course Objectives

1. To develop the programs for solving the problems using function overloading, constructors, classes and object.
2. To apply the object oriented programming concepts to solve the problems.

Course Outcomes (CO)

K3 to K5	CO1	Implement the concepts of object oriented programming.
	CO2	Apply string functions to perform operator overloading.
	CO3	Analyze virtual functions and inheritance.
	CO4	Apply sequential file I/O operations to manipulate a text file
	CO5	Evaluate the implementation of command line arguments.

Sub. Code : **21UCT304**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Part – IV – Value Education - Moral and Ethics**			
Batch 2021-2022	**Hours/Week** 2	**Total Hours** 30	**Credits** 2

Course Objectives

- To impart Value Education in every walk of life.
- To help the students to reach excellence and reap success.
- To impart the right attitude by practicing self-introspection.
- To portray the life and messages of Great Leaders.
- To insist the need for universal brotherhood, patience and tolerance.
- To help the students to keep them fit.
- To educate the importance of Yoga and Meditation.

Course Outcomes (CO)

After completing the course the students:

K1 to K5	CO1	Will be able to recognize Moral values, Ethics, contribution of leaders, Yoga and its practice.
	CO2	Will be able to differentiate and relate the day to day applications of Yogaand Ethics in real life situations.
	CO3	Can emulate the principled life of great warriors and take it forward as a message to self and the society.
	CO4	Will be able to analyse the Practical outcome of practicing Moral values in real life situation.
	CO5	Could evaluate and rank the outcome of the pragmatic approach to further develop the skills.

Sub. Code : **21UCT304**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 4 – Advanced Operating Systems**			
Batch 2021-2022	**Hours/Week** 5	**Total Hours** 75	**Credits** 4

Course Objectives

1. To learn the fundamentals of Operating Systems.
2. To understand the structure and organization of the file system, process management, CPU Scheduling and Memory Management.
3. To provide the design principles of Android operating system.

Course Outcomes (CO)

K1 to K5	CO1	Recollect the basic functionality of the salient features of operating systems like DOS history, Processing states, Interrupts and Switching concepts.
	CO2	Understand the concepts of storage management, paging and page replacement concepts.
	CO3	Apply various optimization techniques in operating systems.
	CO4	Analyse the implementation and avoidance of Deadlock in multiprogramming systems.
	CO5	Evaluate the functionalities of Android operating system.

Sub. Code : **21UCT304**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 5 – Data Structures and Analysis of Algorithms**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	5	75	4

Course Objectives

1. To describe and implement the advanced data structures and demonstrate knowledge in different methods for representing a graph and tree.
2. To apply important algorithmic design paradigms and methods of analysis.
3. To analyze the asymptotic performance of algorithms.

Course Outcomes (CO)

K1 to K5	CO1	Remember the data structures algorithms and programs.
	CO2	Understand data structures and the concepts of algorithms for searching, sorting and dynamic programming.
	CO3	Apply appropriate algorithms and data structures for various applications.
	CO4	Analyze the computational complexity of various algorithms.
	CO5	Evaluate the time complexity dynamic programming.

Sub. Code : **21UCT304**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 6 – Advanced Java Programming**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021 - 2022	5	75	4

Course Objectives

1. To understand the difference between C, C++ and Java Programs.
2. To explore the Java Applications and to identify the variations between Stand alone java applications and Web based applications.
3. To provide the advanced concepts in java programming like Package, Multi Thread, Applet, interface and AWT Components

Course Outcomes (CO)

K1 to K5	CO1	Remember the basic concepts of OOPs, Data Types, Control Statements and Tokens.
	CO2	Understand the concepts interface, package and multithreading.
	CO3	Apply the concepts Package, Thread and Applet.
	CO4	Customize AWT components and event handling.
	CO5	Evaluate the usage of Swing and Java Beans.

Sub. Code : **21UCT3CN**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Practical 3 – Advanced Java Programming Lab**			
Batch 2021-2022	**Hours / Week** 5	**Total Hours** 75	**Credits** 2

Course Objectives

1. To explore the knowledge in stand Alone java applications and web based Applications.
2. To understand the usage of Classes, Package, Interface, Multi Threading, Exception, Applet and AWT.
3. To get the overall idea about java programming structure.

Course Outcomes (CO)

K3 to K5	CO1	Practice the concepts of OOPs, java control statements, data types and Tokens.
	CO2	Review the java package, interface, applet and AWT Components.
	CO3	Work out all the java unique statements through the programs.
	CO4	Explore the usage of event handling mechanisms.
	CO5	Implement the concepts Java swing and Beans.

Sub. Code : **21UCT3S1**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Skill Based Subject 1 – Programming Language in Python**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	3

Course Objectives

1. To understand the fundamentals of Python Programming.
2. To get knowledge about the Functions in Python.
3. To understand the concepts of List and String methods.
4. To gain idea about exception handling and classes.

Course Outcomes (CO)

K1 to K5	CO1	Recollect the basic concepts of Programming logics.
	CO2	Understand the operators and control structures in python.
	CO3	Apply various predefined and user defined functions.
	CO4	Analyse the concept of classes and objects. Review various string, list, tuple and dictionaries.
	CO5	Evaluate the functionality of an exception handling mechanism.

Sub. Code : **21UCT407**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 7 – Relational Database Management Systems**			
Batch 2021-2022	**Hours/Week** 5	**Total Hours** 75	**Credits** 4

Course Objectives

1. To develop the knowledge in various Database concepts, queries, normalization and reports.
2. To be able to construct a new normalized database.

Course Outcomes (CO)

K1 to K5	CO1	Remember the basic concepts of database management systems and database techniques.
	CO2	Understand Data constraints and CODDs rules, DML and DDL statements of ORACLE,
	CO3	Apply various DDL and DML statements, joins queries, PL / SQL statements.
	CO4	Analyze the granting and revoking permissions in cursors.
	CO5	Evaluate the usage of normalization in relational database management system.

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Sub. Code : **21UCT408**

Sub. Code : **21UCT408**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 8 – .NET Framework**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	4	60	4

Course Objectives

1. To design and develop the distributed event driven programming in both VB and .Net framework
2. To Apply CLR, .NET framework classes andADO.Net.
3. To Analyze the Properties, Events and Methods in .Net Environment.

Course Outcomes (CO)

K1 to K5	CO1	Remember the basic Visual basic concepts and advanced features of VB.Net.
	CO2	Understand the concepts of .Net framework Technology and summarize the advantages and disadvantages of .Net framework.
	CO3	Apply the web applications using VB.Net.
	CO4	Analyze the distributed event driven programming using .Net framework.
	CO5	Assess the database connectivity in windows and web applications.

Sub. Code : **21UCT409**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 9 – Computer Networks**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	5	75	4

Course Objectives

1. To provide the concepts and fundamentals of different layers used in computer networking.
2. To understand a basic knowledge of the use of cryptography and different techniques keys used for Encryption and Decryption.

Course Outcomes (CO)

K1 to K5	CO1	Recollect OSI reference Model and knowledge of using different Layers in the networking model.
	CO2	Understand about the use of cryptography.
	CO3	Apply the techniques used in the devices like switches, repeaters, hubs. Bridges and gateways.
	CO4	Analyse different routing algorithms.
	CO5	Evaluate the usage of Symmetric-Key Signatures and Public- Key signatures.

Sub. Code : **21UCT4CO**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Practical 4 – .Net Framework and Oracle Lab**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	2

Course Objectives

1. To design and develop the applications using ADO.Net and session tracking.
2. To make the students to develop the database projects with a back end concept.
3. To construct .NET applications and to maintain the database.
4. To familiarize the students in crystal report creation.

Course Outcomes (CO)

K3 to K5	CO1	Apply the decision and control structures in .NET and apply the concepts of queries and creation of console applications.
	CO2	Analyze the concept of windows application and project creation and Oracle functions.
	CO3	Construct the queries using DDL and DML queries.
	CO4	Execute the console, window application, crystal report, PL/SQL triggers.
	CO5	Apply the connectivity to retrieve the data from database.

Sub. Code : **21UCT4A4**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Allied Paper 4 – Computer System Architecture**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	5

Course Objectives

1. To understand the basic architecture of computers and its registers.
2. To understand machine language, arithmetic and logic operations.
3. To be aware of the techniques used in input output devices and memory organization.

Course Outcomes (CO)

K1 to K5	CO1	Remember the basic architecture of computer.
	CO2	Understand the 16 bit memory and peripheral devices.
	CO3	Apply the concepts of I/O devices, memory organization.
	CO4	Analyze the development tools, I/O devices.
	CO5	Evaluate the usage of various Memory Hierarchy of Computer System Structure.

Sub. Code : **21UCT4SL**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Skill Based Subject 2 – Python Programming Lab**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	3

Course Objectives

1. To gain knowledge about the fundamentals of python programming.
2. To understand the concepts of string, list, tuple.
3. To implement the concept of exception handling, classes and objects.

Course Outcomes (CO)

K3 to K5	CO1	Implement basic operators and function concepts.
	CO2	Review various string and list methods.
	CO3	Execute exception handling.
	CO4	Develop the programs using tuple and dictionaries.
	CO5	Evaluate the usage of classes and attributes in python programs.

Sub. Code : **21UCT510**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 10 – Software Engineering and Testing**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	5	75	5

Course Objectives

1. To remember the methods and technologies involved in building complex software.
2. To understand the various steps involved in developing software including requirement elicitation, System design, object design and testing.
3. To implement the Software testing techniques in the projects.

Course Outcomes (CO)

K1 to K5	CO1	Remember the steps involved in developing the software.
	CO2	Understand the roles and responsibilities of various persons involved in development cycle.
	CO3	Implement the methods and techniques to develop a small project.
	CO4	Analyze the problems that may occur in each and every phase of software development cycle.
	CO5	Evaluate the usage of Integration and Acceptance testing.

Sub. Code : **21UCT511**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 11 – Wireless Ad-Hoc Network**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	5	75	5

Course Objectives

1. To introduce the basic concepts Wireless Ad-Hoc Network
2. To get knowledge about various concepts in wireless Ad-Hoc Network.
3. To provide an opportunity for students to understand the concept of Routing Protocols, Trust Management and Applications.

Course Outcomes (CO)

K1 to K5	CO1	Understand the concept configuration, Healing and self-Organize in Ad-Hoc Network.
	CO2	Understand various Routing protocols natures.
	CO3	Apply the various techniques used for Multicasting and Broadcasting.
	CO4	Analyze wireless Ad-Hoc Network Vehicular applications.
	CO5	Evaluate the Mobile Ad-Hoc and Vehicular Ad-Hoc networks using various Trust and security issues.

Sub. Code : **21UCT512**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 12 – Data Mining and Warehousing**			
Batch 2021-2022	**Hours/Week** 6	**Total Hours** 90	**Credits** 5

Course Objectives

1. To understand the different techniques in Data Mining and to develop the knowledge about Data Warehousing, Data Mining and KDD process.
2. To study the methodology of data warehousing and data mining to derive business rules for decision support systems.
3. To describe and demonstrate the data mining algorithms and methods.

Course Outcomes (CO)

K1 to K5	CO1	Remember the basic concepts in database management system and understand the discovery of knowledge in databases.
	CO2	Understand the techniques of genetic algorithms, neural networks and decision trees.
	CO3	Apply various classification algorithms in data mining.
	CO4	Analyse the clustering algorithms and rule generation algorithms.
	CO5	Evaluate the process flow within a data warehouse, Extract and load process, clean and transform data, Backup and archive process.

Sub. Code : **21UCT5CP**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Practical 5 – Software Engineering and Testing Lab**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	2

Course Objectives

1. To develop a web based application for the real time project.
2. To find bugs in the product or application and to expand effective reporting.

Course Outcomes (CO)

K3 to K5	CO1	Apply the principles of system and component testing.
	CO2	Analyze the strategies for generating system test cases.
	CO3	Evaluate the tools used in automation testing.
	CO4	Execute the performance of load testing.
	CO5	Develop UML diagrams for various applications using smartdraw.

Sub. Code : **21UCT5X1**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Extra Departmental Course - Web Development and Google App Lab**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	3

Course Objectives

1. To understand the knowledge about web development languages.
2. To gain knowledge about Website creation.
3. To get knowledge about various Google Applications.

Course Outcomes (CO)

K3 to K5	CO1	Implement various HTML tags and develop web pages.
	CO2	Review different HTML tags and its usages.
	CO3	Assess the functionality of Google Doc and Google Sheet.
	CO4	Review the functionality of Google Slide and Forms.
	CO5	Explore the usage of Google Apps.

Sub. Code : **21UCT613**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 13 – PHP**			
Batch 2021-2022	**Hours/Week** 6	**Total Hours** 90	**Credits** 4

Course Objectives

1. To understand the basic concept of website requirements and to realize the basic requirements of PHP.
2. To learn the concepts of PHP and Data base through various PHP and SQL Statements.
3. To get the overall idea about PHP and SQL and able to get the knowledge about Web site development.

Course Outcomes (CO)

K1 to K5	CO1	Remember the basic web development requirements and PHP concepts.
	CO2	Understand the PHP program flow, arrays, string and functions.
	CO3	Apply classes, Cookies, Sessions, OOPs and File concepts.
	CO4	Review the concepts of SQLite and PHP Statements.
	CO5	Evaluate the usage of various XML technologies.

Sub. Code : **21UCT614**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Paper 14 – Information Security**			
Batch 2021-2022	**Hours/Week** 6	**Total Hours** 90	**Credits** 4

Course Objectives

1. To understand all aspects of cyber security including network security, computersecurity and information security.
2. To become information security professionals for the high-end jobs insecurity.

Course Outcomes (CO)

K1 to	CO1	Recollect the basic security concepts of the digital computer system.
	CO2	Understand the malicious codes and virus attachments of a file.
	CO3	Apply the security mechanisms, firewalls and intrusion detection systems in the computer field.
	CO4	Analyze different types of security flaws , Legal and Ethical issues in computer security.
	CO5	Evaluate the usage of Legal and Ethical Issues in Computer Security.

Sub. Code : **21UCT6CQ**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Core Practical 6 – Programming Lab - PHP**			
Batch 2021-2022	**Hours/Week** 6	**Total Hours** 90	**Credits** 2

Course Objectives

1. To be able to get the knowledge about platform independent language.
2. To get the idea about PHP and MariaDB connectivity concepts.
3. To be able to design their own website.

Course Outcomes (CO)

K3 to K5	CO1	Execute array functions, file and directory functions, date and time functions in PHP Script.
	CO2	Inspect PHP expressions, Cookies and Sessions.
	CO3	Apply various predefined functions.
	CO4	Develop the programs using Tokenizer.
	CO5	Evaluate the database using PHP's MariaDB extensions

Sub. Code : **21UCT6Z1**

Programme Code : 11	**B.Sc Computer Technology**

UCT 28

Title of the paper : **Core Project – Project Work & Viva - Voce *** **			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	4	60	4

Course Objectives

On successful completion of all the above courses

1. To be able to get the knowledge about selecting the task based on their course skills.
2. To get the knowledge about analytical skill for solving the selected task.
3. To get confident for implementing the task.

Course Outcomes (CO)

K3 to K5	CO1	Apply the programming skills for solving the project.
	CO2	Analyze the task and to collect the necessary information about the software.
	CO3	Evaluate the task based on the software.
	CO4	Test the project for its successful implementation
	CO5	Implement and Maintain the developed system.

Sub. Code : **21UCT6SM**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Skill Based Subject 3 – Hardware Installation and Networking Lab**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	3

Course Objectives

1. To understand the knowledge about the hardware components and troubleshooting
2. To get the knowledge about hardware assembling.
3. To understand the knowledge about LAN connectivity and network file sharing.

Course Outcomes (CO)

K3 to K5	CO1	Recollect the architecture and functionalities of a computer.
	CO2	Implement the hardware assembling.
	CO3	Apply the computer trouble shooting mechanism.
	CO4	Analyze the LAN connectivity.
	C05	Execute the network file sharing.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Elective Paper: Web Development Languages**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	5

Course Objectives

1. To get knowledge about Web development related Languages
2. To understand HTML, DHTML tags
3. To get an idea about scripting languages for web development

Course Outcomes (CO)

K1 to K5	CO1	Recollect basic concept about web technologies.
	CO2	Understand the idea web development tools.
	CO3	Implement various HTML, DHTML and CSS Concepts.
	CO4	Analyse various JQuery Function and Events.
	CO5	Evaluate scripting languages syntax for web Developments.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Elective Paper: Cloud Computing**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	5

Course Objectives

1. To understand the basic knowledge about the cloud computing techniques and architecture.
2. To gain knowledge of cloud services and cloud security.
3. To be able to understand Cloud Segment, Cloud Deployment Models and key cloud companies.

Course Outcomes (CO)

K1 to K5	CO1	Identify the architecture and infrastructure of cloud computing including SaaS, PaaS, IaaS, public cloud, private cloud, and hybrid cloud.
	CO2	Understand the core issues of cloud computing, security, privacy, and interoperability.
	CO3	Apply the appropriate technologies and approaches for the related issues in Cloud Computing.
	CO4	Analyze the suitable cloud computing solutions and recommendations according to the applications used.
	CO5	Evaluate the usage of security tools in clouds.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Elective Paper : Big Data**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	5

Course Objectives

1. To know the fundamental concepts of big data and analytics.
2. To explore tools and practices for working with big data.
3. To learn about stream computing and to know about the research that requires the integration of large amounts of data.

Course Outcomes (CO)

K1 to K5	CO1	Recollect the difference between structured, semi-structured and unstructured data.
	CO2	Understand the challenges of big data and its applications.
	CO3	Apply NoSQL databases in Big data.
	CO4	Analyse the processing techniques in batch mode using map reduce.
	CO5	Evaluate the techniques used for analysis of Big data.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Elective Paper: Embedded Systems**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	5

Course Objectives

1. To understand the basic concept of Embedded System
2. To get knowledge about networks, serial and parallel port and protocols
3. To introduce real-time systems and embedded computing systems

Course Outcomes (CO)

K1 to K5	CO1	Remember basic concepts of Embedded System, Microcontroller, Ports and embedded programming in C,C ++and Java
	CO2	Understand the concepts internal architecture and interfacing of different peripheral devices with Microcontrollers
	CO3	Deploy in depth knowledge in Device drivers and Interrupts servicing mechanism, inter-process communication and synchronization of processes
	CO4	Analyze a vast experience about Real Time Operating Systems and its applications and program modeling concepts in a single and multi processor systems
	CO5	Evaluate the Tasks, threads and Inter process communication about the Embedded System.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Elective Paper: Principles of Data Science and Data Analytics**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	5

Course Objectives

1. To provide the fundamental concepts in data science.
2. To understand Data Classification, Sources of Data, Data Science user- roles and skills,.
3. To get the knowledge in basics of R and statistical measures.

Course Outcomes (CO)

K1 to K5	CO1	Remember the fundamental concepts and techniques of data science in 360 view of Customer.
	CO2	Understand data and its types.
	CO3	Apply the methodologies of data science.
	CO4	Analyse the basics of R tool and data visualization using R.
	CO5	Evaluate various statistical measures.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Elective Paper: Artificial Intelligence**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	6	90	5

Course Objectives

1. To understand the basic concepts of Artificial Intelligence (AI) and identify the AI problems and domains.
2. To provide search techniques to solve the problems.
3. To represent and access the domain specific knowledge.

Course Outcomes (CO)

K1 to K5	CO1	Recollect various AI techniques.
	CO2	Understand the nature of AI problems and task domains of AI.
	CO3	Apply the appropriate search procedures to solve the problems by using best algorithms.
	CO4	Analyze and select the suitable knowledge representation method.
	CO5	Manipulate the acquired knowledge and infer new knowledge.

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Sub. Code : **21UHR3N1**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Non - Major Elective - I Human Rights**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	2

Course Objectives

1. To prepare for responsible citizenship with awareness of the relationship between Human Rights, democracy and development.
2. To impart education on national and international regime on Human Rights.
3. To sensitive students to human suffering and promotion of human life with dignity.
4. To develop skills on human rights advocacy
5. To appreciate the relationship between rights and duties
6. To foster respect for tolerance and compassion for all living creature.

K1 to K5	CO1	To understand the hidden truth of Human Rights by studying various theories.
	CO2	To acquire overall knowledge regarding Human Rights given by United Nation Commission (UNO).
	CO3	To gain knowledge about various organs responsible for Human Rights such as National Human Rights Commission and state Human Right commission (UNHCR).
	CO4	To get habits of how to treat aged person, others and positive social responsibilities.
	CO5	To treat and confirm, child, refugees and minorities with positive social justice.

Sub. Code : **21UWR4N2**

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Non- Major Elective - II Women's Rights**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	2

Course Objectives

1. To know about the laws enacted to protect women against violence.
2. To impart awareness about the hurdles faced by women.
3. To develop a knowledge about the status of all forms of women to access to justice.

4. To create awareness about women's rights.
5. To know about laws and norms pertaining to protection of women.
6. To understand the articles which enables the women's rights.
7. To understand the Special Women Welfare laws.
8. To realize how the violence against women puts an undue burden on health care services.

Course Outcomes (CO)

After Completion of the Course the student will be able to

K1 to K5	CO1	Appraise the importance of Women's Studies and incorporate Women's Studies with other fields.
	CO2	Analyze the realities of Women Empowerment, Portrayal of Women in Media, Development and Communication.
	CO3	Interpret the laws pertaining to violence against Women and legal consequences.
	CO4	Contribute to the study of the important elements in the Indian Constitution, Indian Laws for Protection of Women.
	CO5	Spell out and implement Government Developmental schemes for women and create awareness on modernization and impact of technology on Women.

Programme Code : 11	**B.Sc Computer Technology**		
Title of the paper : **Non- Major Elective – Consumer Affairs**			
Batch	**Hours/Week**	**Total Hours**	**Credits**
2021-2022	2	30	2

Course Objectives

1. To familiarize the students with their rights and responsibilities as a consumer.
2. To understand the procedure of redress of consumer complaints.
3. To know more about decisions on Leading Cases by Consumer Protection Act.
4. To get more knowledge about Organizational set-up under the Consumer Protection Act
5. To impart awareness about the Role of Industry Regulators in Consumer Protection
6. To understand Contemporary Issues in Consumer Affairs

Course Outcomes (CO)

K1 to K5	CO1	Able to know the rights and responsibility of consumers.
	CO2	Understand the importance and benefits of Consumer Protection Act.
	CO3	Applying the role of different agencies in establishing product and service standards.
	CO4	Analyse to handle the business firms' interface with consumers.
	CO5	Assess Quality and Standardization of consumer affairs