

KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

Re-accredited by NAAC with 'A+' Grade (4th Cycle)

College of Excellence (UGC)

Coimbatore – 641 029

DEPARTMENT OF COMPUTE TECHNOLOGY

COURSE OUTCOMES (CO)

B.Sc COMPUTER TECHNOLOGY

**For the students admitted in the
Academic Year 2020-2021**

20UCT101

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT101		Core Paper 1 – C Programming		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	I	5	75	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. Familiarize the basic syntax and semantics of C Language.

Course Outcomes (CO)

K1 to K4	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	Implement different Operations on arrays, functions, pointers, structures, unions and files.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT1CL		Core Practical 1 – C Programming Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	I	5	75	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	Develop programs using the control statements, Arrays and Strings
	CO3	Apply effective usage of arrays, structures, functions and pointers.
	CO4	Implement files and command line arguments.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT202		Core Paper 2 – Digital Logic and Circuit Designs		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	II	3	45	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.
4. To know the concept of Combination Circuits.
5. To learn the concept of Counters and Registers.

Course Outcomes (CO)

K1 to K4	CO1	Retain the information about the Computer Number systems and 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	Investigate the function Counters and Registers

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT203		Core Paper 3 – Object Oriented Programming with C++		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	II	3	45	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 K4	CO1	Remember the characteristics of Procedure and Object Oriented Programming Languages
	CO2	Understand the fundamentals of C++ programming structure, function overloading and constructors.
	CO3	Using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc.
	CO4	Apply the concepts in object oriented programming in terms of software reuse and managing complexity to solve real-world problems.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT2CM		Core Practical 2 – Object Oriented Programming with C++ Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	II	4	60	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	Implement files and command line arguments.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT304		Core Paper 4 – Advanced Operating Systems		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	III	5	75	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 K4	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	Analyze the functionalities of Android operating system.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT305		Core Paper 5 – Data Structures and Analysis of Algorithms		
Batch	Semester	Hours/Week	Total Hours	Cred its
2020-2021	III	5	75	4

Course Objectives

1. Describe and implement the advanced data structures and demonstrate Knowledge in different methods for representing a graph and tree.
2. Apply important algorithmic design paradigms and methods of analysis.
3. Analyze the asymptotic performance of algorithms.

Course Outcomes (CO)

K1 to K4	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

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT306		Core Paper 6 – Advanced Java Programming		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	III	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
4. Ability to improve their programming skills using self programs.

Course Outcomes (CO)

K1 to K4	CO1	Remember the basic concepts of OOPs, Data Types, Control Statements and Tokens.
	CO2	Realize the knowledge about the java statements.
	CO3	Implement the concept of Package, Thread , Applet, Interfaces and AWT Components
	CO4	Inspect the java concepts and get the new innovative ideas.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT3CN		Core Practical 3 – Advanced Java Programming Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	III	5	75	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. On successful completion of practical they will able 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.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT407		Core Paper 7 – Relational Database Management Systems		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	IV	5	75	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 K4	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 , cursors

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT408		Core Paper 8 – .NET Framework		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	IV	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 and ADO.Net.
3. To Analyze the Properties, Events and Methods in .Net Environment.

Course Outcomes (CO)

K1 to K4	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

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT409		Core Paper 9 – Computer Networks		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	IV	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 K4	CO1	Understand OSI reference Model and knowledge of using different Layers in the networking model.
	CO2	Understand the knowledge of the use of cryptography
	CO3	Apply the techniques used in routing algorithms
	CO4	Analyze Digital Signatures Symmetric-Key Signatures and Public-Key signatures.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT4CO		Core Practical 4 – .Net Framework and Oracle Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	IV	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	Execute the console, window application, crystal report, PL/SQL triggers.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT4A4		Allied Paper 4 – Computer System Architecture		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	IV	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 K4	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.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT510		Core Paper 10 – Software Engineering and Testing		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	V	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 K4	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.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT511		Core Paper 11 – Wireless Ad-Hoc Network		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	V	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 K4	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.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT512		Core Paper 12 – Data Mining and Warehousing		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	V	6	90	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 K4	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 clustering and classification algorithms in data mining.
	CO4	Analyze typical process flow within a data warehouse, Extract and load process, clean and transform data, Backup and archive process.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT5CP		Core Practical 5 – Software Testing Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	V	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.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT613		Core Paper 13 – PHP		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	VI	6	90	5

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. After the completion of this course, Students will get the overall idea about PHP and SQL and able to get the knowledge about Web site development.

Course Outcomes (CO)

K1 to K4	CO1	Remember the basic web development requirements and PHP concepts.
	CO2	Grasp the PHP program flow, arrays, string and functions.
	CO3	Implement classes, Cookies, Sessions, OOPs and File concepts.
	CO4	Review the concepts of SQLite and PHP Statements.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT614		Core Paper 14 – Information Security		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	VI	6	90	4

Course Objectives

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

Course Outcomes (CO)

K1 to K4	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.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT6CQ		Core Practical 6 – Programming Lab-PHP		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	VI	6	90	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	Evaluate the database using PHP's MariaDB extensions

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT6Z1		Core Project – Project Work & Viva - Voce ***		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	VI	4	60	5

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.
4. After completing their project they get the confident for solving the real time problems.

Course Outcomes (CO)

K3 to K5	CO1	Apply the programming skill for solving the project.
	CO2	Analyze the task and to collect the necessary information and software.
	CO3	Evaluate the task based on the software.

Programme Code : 11		B.Sc Computer Technology		
Elective Paper: Web Development Languages				
Batch	Hours/Week	Total Hours	Credits	
2020-2021	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 K4	CO1	To recollect basic concept about web technologies
	CO2	Understand the idea web development tools.
	CO3	Implement various HTML, DHTML and CSS Concepts.
	CO4	Evaluate scripting languages syntax for web Developments.

Programme Code : 11		B.Sc Computer Technology	
Elective Paper: Cloud Computing			
Batch	Hours/Week	Total Hours	Credits
2020-2021	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 K4	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.

Programme Code : 11		B.Sc Computer Technology	
Elective Paper: Digital Image Processing			
Batch	Hours/Week	Total Hours	Credits
2020-2021	6	90	5

Course Objectives

1. To understand the basic fundamental concept of an image
2. To know the concepts of Image techniques, Sharpe and filtering ideas
3. To gain the knowledge about image patterns, structures and image compressions

Course Outcomes (CO)

K1 to K4	CO1	To remember the basic image concepts.
	CO2	To know the image sharpens enhancement and compression models.
	CO3	To apply various image techniques like edge linking and boundary detection.
	CO4	To analyze basic requirements of image processing like structure, compression and resolution.

Programme Code : 11		B.Sc Computer Technology	
Elective Paper: Embedded Systems			
Batch	Hours/Week	Total Hours	Credits
2020-2021	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 K4	CO1	To remember basic concepts of Embedded System, Microcontroller, Ports and embedded programming in C,C ++and Java
	CO2	To understand the concepts internal architecture and interfacing of different peripheral devices with Microcontrollers
	CO3	To deploy in depth knowledge in Device drivers and Interrupts servicing mechanism, inter-process communication and synchronization of processes
	CO4	To analyze a vast experience about Real Time Operating Systems and its applications and program modeling concepts in a single and multi processor systems

Programme Code : 11		B.Sc Computer Technology	
Elective Paper: Principles of Data Science			
Batch	Hours/Week	Total Hours	Credits
2020-2021	6	90	5

Course Objectives

1. This course provides the fundamental concepts in data science.
2. It includes Data Classification, Sources of Data, Data Science user- roles and skills,.
3. Process of big data technology, Security and Intelligence, Basics of R and statistical measures.

Course Outcomes (CO)

K1 to K4	CO1	Understand data classification, process of big data technology, user roles and skills in data science.
	CO2	Apply the fundamental concepts and techniques of data science in 360 view of Customer
	CO3	Analyze the methodologies of data science
	CO4	Detect myths in big data

Programme Code : 11		B.Sc Computer Technology	
Elective Paper: Artificial Intelligence			
Batch	Hours/Week	Total Hours	Credits
2020-2021	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 K4	CO1	Understand the nature of AI problems and task domains of AI.
	CO2	Apply the appropriate search procedures to solve the problems by using best algorithms.
	CO3	Analyze and select the suitable knowledge representation method.
	CO4	Manipulate the acquired knowledge and infer new knowledge.

20UCT4SL

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT3S1		Skill Based Subject 1 – Programming Language in Python		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	III	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 K4	CO1	To implement basic concepts of operators and functions.
	CO2	To Review various string, list, tuple and dictionaries.
	CO3	To evaluate the functionality of an exception handling.
	CO4	To analyze the concept of classes and objects.

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT4SL		Skill Based Subject 2– Python Programming Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	IV	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	To implement basic operators and function concepts.
	CO2	To Review various string and list methods.
	CO3	To execute exception handling.

20UCT5X1

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT5X1		Extra Departmental Course - Web Development and Google App Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	V	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 developing web pages.
	CO2	Review different HTML tags and its usages.
	CO3	Assess various Google Applications and its benefits

20UCT6SM

Programme Code : 11		B.Sc Computer Technology		
Course Code: 20UCT6SM		Skill Based Subject 3 – Hardware Installation and Networking Lab		
Batch	Semester	Hours/Week	Total Hours	Credits
2020-2021	VI	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	CO3	Apply the computer trouble shooting mechanism.
	CO4	Analyze the LAN connectivity.
	CO5	Execute the network file sharing.

Programme Code : 11	B.Sc Computer Technology		
Non- Major Elective – Consumer Affairs			
Batch	Hours/Week	Total Hours	Credits
2020-2021	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, and the role of different agencies in establishing product and service standards.
3. To have a handle the business firms' interface with consumers and the consumer related regulatory and business environment.

Course Outcomes (CO)

K1 to K4	CO1	Able to know the rights and responsibility of consumers.
	CO2	Understanding the various procedure of redress.
	CO3	Applying the role of different agencies in establishing product and service standards.
	CO4	To enable them to handle the business firms' interface with consumers.