KONGUNADU ARTS AND SCIENCE COLLEGE (AUTONOMOUS)

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

College of Excellence (UGC)

Coimbatore – 641 029

DEPARTMENT OF INFORMATION TECHNOLOGY

COURSE OUTCOMES (CO)

OF

B.SC INFORMATION TECHNOLOGY

For the students admitted in the

Academic Year 2020-2021

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT101		**Core Paper I – C Programming**		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	I	5	75	5

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 with the basic syntax and semantics of C Language.

Course Outcomes (CO)

K1toK4	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 : 12		B.Sc. Information Technology		
Course Code:20UIT1CL		Core Practical I – Programming Lab - C		
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 learn problem solving techniques using C.
3. To enhance the analyzing and problem solving skills and use the same for writing programs in C.

Course Outcomes (CO)

	CO1	Understand basic Structure of the C-Programming, declaration and usage of variable
K3 to K5	CO2	Develop programs using the control statements, Arrays and Strings
	CO3	Apply arrays, structures, functions and pointers for problem solving
	CO4	Implement files and command line arguments.

Programme Code : 12		B.Sc. Information Technology		
Course Code: 20UIT202		Core Paper II - Computer Organization and Architecture		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	II	4	60	4

Course Objectives

1. To gain an in-depth knowledge about the different types of number systems and number conversions.
2. To learn the concepts of Multiplexers, Flip-Flops and Registers.
3. To impart the knowledge about Input / Output devices, Interrupt handling and Priority Interrupt.

Course Outcomes (CO)

	CO1	Remember the circuits of various flip-flops.
K1 to K4	CO2	Understand the organization of various units such as control unit, arithmetic and logic unit, memory unit and I/O unit in a digital computer.
	CO3	Apply the rules of Karnaugh map in simplifying the expressions.
	CO4	Analyze the concept of mapping techniques.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT203		Core Paper III – Object Oriented Programming with C++		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	II	3	45	5

Course Objectives

1. To develop a greater understanding of the issues involved in programming language design and object oriented paradigms.
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	Analyze 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 : 12		B.Sc. Information Technology		
Course Code:20UIT2CM		Core Practical II – Programming Lab-C++		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	II	3	45	2

Course Objectives

1. To understand and Apply Object oriented features and C++ concepts
2. To apply the concept of polymorphism and inheritance.
3. To develop applications using Console I/O and File I/O.

Course Outcomes (CO)

	CO1	Apply the basic concepts of Object Oriented Programming
K3 to K5	CO2	Solve the programs using virtual functions and inheritance.
	CO3	Implement files and command line arguments.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT304		Core Paper IV –Data Structures and Algorithms		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	III	5	75	4

Course Objectives

1. To impart the basic concepts of data structures and algorithms.
2. To understand the basic concepts of searching and sorting algorithms.
3. To teach efficient storage mechanisms of data for an easy access.

Course Outcomes (CO)

	CO1	Remember the algorithms of various data structures.
K1 to K4	CO2	Understand the operations like searching, insertion, deletion and traversing mechanism on various data structures.
	CO3	Apply the data structure in real time problem solving.
	CO4	Analyze the complexity of different algorithms.

Programme Code : 12		B.Sc. Information Technology			
Course Code:20UIT305		Core Paper V – Relational Database Management System and Oracle			
Batch 2020-2021	Semester III	Hours / Week 5		Total Hours 75	Credits 4

Course Objectives

1. To learn the basic concepts of database.
2. To understand the concepts of DDL and DML.
3. To gain an insight of basic concepts SQL and PL/SQL languages.

Course Outcomes (CO)

K1 to K4	CO1	Remembering the concept of Database
	CO2	Understanding the concept of data Integrity constraints
	CO3	Applying various DDL, DML statements, Joins, Queries and PL / SQL statements.
	CO4	Analyzing various types of database management systems

Programme Code : 12		B.Sc. Information Technology			
Course Code: 20UIT306		Core Paper VI – Advanced Java Programming			
Batch 2020-2021	Semester III	Hours / Week 5		Total Hours 75	Credits 5

Course Objectives

1.To learn the basic features of Java Programming
1. To gain the knowledge about the concepts of Packages, Inheritance, Interfacesand Multithreading.
3. To develop the ability to create and run java programs using Applets and AWT.

Course Outcomes (CO)

K1 toK4	CO1	Remember the keywords, data types and Control Structures in Java.
	CO2	Understand the concept of Creating Classes, Functions and Objects.
	CO3	Apply the concepts of Constructors,Inheritance,Exception Handling,AWT& JDBC
	CO4	Analyze the concepts of Threads, applets and Files and Swings

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT3CN		Core Practical III – Programming Lab – Advanced Java and Oracle		
Batch 2020-2021	Semester III	Hours / Week 5	Total Hours 75	Credits 2

Course Objectives

1. To develop the ability to build web based applications using applets and AWT.
2. To create tables and triggers using PL/SQL.
3. To apply the concepts of Multithreading, Inheritance and Packages.

Course Outcomes (CO)

	CO1	Recollect the concepts of control structures, inheritance, method overriding in Java
K3 to K5	CO2	Implement the concept of interface, packages, multithreading ,applets and Database
	CO3	Apply manipulation operations using PL/SQL statements and validate the database using triggers

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT407		Core Paper VII - Operating Systems		
Batch 2020-2021	Semester IV	Hours / Week 5	Total Hours 75	Credits 4

Course Objectives

1. To gain an insight of the fundamentalsof Operating System.
2. To enrich the knowledge on process management, CPU Scheduling and Memory management.
3. To provide the design principles of operating system with a case study of Linux and UNIX.

Course Outcomes (CO)

	CO1	Remember the fundamentals of operating system
K1 to K4	CO2	Understand the basic concepts of Process & Scheduling
	CO3	Implement CPU scheduling algorithms for Process Scheduling and to deploy the memory management Concepts
	CO4	Analyze the problem of deadlock and File System Concepts

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT408		Core Paper VIII - .Net Programming		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	IV	5	75	4

Course Objectives

1. To understand the .Net Framework components.

2. To integrate variables and functions in developing .Net applications.

3. To build applications using Vb.Net and Asp.Net programming techniques.

Course Outcomes (CO)

	CO1	Remember the structure and syntax of .NET
K1 to K4	CO2	Understand the properties and methods of the various tools.
	CO3	Apply the concept of .NET in developing windows and web applications.
	CO4	Analyze the database connectivity using ADO.NET.

Programme Code : 12		B.Sc. Information Technology		
Course Code: 20UIT409		Core Paper IX- Computer Networks		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	IV	5	75	4

Course Objectives

1. To learn the terminology and concepts of the OSI reference model and TCP/IP reference model.
2. To Identify the key issues for the realization of the LAN/WAN/MAN network architectures.
3. To understand a basic knowledge of the use of cryptography and different techniques keys used for Encryption and Decryption.

Course Outcomes (CO)

	CO1	Remember the basic structure of ISO/OSI reference model.
K1 to K4	CO2	Understanding the knowledge of the use of Cryptography.
	CO3	Apply the concept of routing algorithms.
	CO4	Analyzing Digital Signatures Symmetric-Key Signatures and Public-Key Signatures.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT4CO		Core Practical IV – Programming Lab – .NET		
Batch 2020-2021	Semester IV	Hours / Week 5	Total Hours 75	Credits 2

Course Objectives

1. To become familiar with the tools and operations of VB.Net
2. To get a simple understanding of windows- based programming.
3. To gain knowledge in developing real time applications.

Course Outcomes (CO)

K3 to K5	CO1	Applying the appropriate tools, methods and events for developing the applications.
	CO2	Implementing the syntax and functions in developing the real time applications.
	CO3	Analyzing the database connectivity with vb.net applications.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT4A4		Allied Paper 1V –Microprocessors, PC Hardware and Interfacing		
Batch 2020-2021	Semester IV	Hours / Week 6	Total Hours 90	Credits 5

Course Objectives

1. To teach the architecture and instruction set of different Microprocessors.
2. To learn the architecture of Microcontrollers,and Peripherals.
3. To understand the architectures of Serial and Parallel Ports.

Course Outcomes (CO)

K1 to K4	CO1	Remember the basic architecture of 16 and 32 bit microprocessors.
	CO2	Understand the 16 bit memory and peripheral devices.
	CO3	Apply the concepts of advanced microprocessors like 80386, Pentium pro, MMX technologies on real time systems.
	CO4	Analyze the development tools , I/O devices, Drivers, Ports and USB

Programme Code : 12		B.Sc. Information Technology		
Course Code: 20UIT510		Core Paper X - Python Programming		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	V	6	75	4

Course Objectives

1. To introduce the fundamentals of Python Programming.
2. To teach about the concept of Functions in Python.
3. To impart the knowledge of Lists, Tuples, Files and Directories.
4. To learn about dictionaries in python.

Course Outcomes (CO)

K1 to K4	CO1	Remembering the concept of operators, data types, Looping statements in python programming.
	CO2	Understanding the concepts of Input / Output operations in file.
	CO3	Applying the concept of functions and exception handling
	CO4	Analyzing the structures of list, tuples and maintaining dictionaries.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT511		Core Paper XI – Software Engineering		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	V	6	90	4

Course Objectives

1. To assist the students in understanding the basic theory of software engineering.
2 To teach about various testing and debugging techniques.
1. To gain knowledge about quality control and to develop good quality software

Course Outcomes (CO)

K1 to K4	CO1	Remember the fundamentals of software engineering concepts.
	CO2	Understand common lifecycle processes such as waterfall model, spiral model, prototyping model and evolutionary models.
	CO3	Apply the principles and techniques of software engineering in the architectural design, detail design, and implementation of software applications.
	CO4	Analyze the developed software using different testing concepts.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT512		Core Paper XII – Mobile Computing		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	V	6	90	4

Course Objectives

1. To learn the basic concepts of Mobile Computing and its Applications.
2. To provide various emerging technologies in Mobile computing services.
3. To gain knowledge about GSM,GPRS,CDMA and 3G.

Course Outcomes (CO)

K1 to K4	CO1	Remember the concept of Wireless LANs, Signals and Antennas
	CO2	Understand the concepts of Routing and Handover
	CO3	Apply the techniques used in the GSM and Bluetooth
	CO4	Analyze World Wide Web and WAP.

Programme Code : 12		B.Sc. Information Technology		
Course Code: 20UIT5CP		Core Practical V–Programming Lab - Python		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	V	5	75	2

Course Objectives

1. To gain knowledge about the concepts of python programming.
2. To understand the concepts of Built-in functions and User-defined functions.
3. To develop programs using String functions.

Course Outcomes (CO)

K3 to K5	CO1	Implement the concepts of built-in functions in programming.
	CO2	Analyze the use control structures in programming.
	CO3	Apply the concepts of exception handling in programs.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT613		Core Paper XIII - Open Source Tools		
Batch 2020-2021	Semester VI	Hours / Week 6	Total Hours 90	Credits 5

Course Objectives

1. To learn the basic programming techniques using PHP and Linux.
2. To gain an insight of creating classes and using functions in PHP.
3. To learn the process of developing a PHP application and Shell Programming.

Course Outcomes (CO)

K1 to K4	CO1	Remember the basic syntax of PHP and Linux Programming.
	CO2	Understand Arrays and Strings in PHP.
	CO3	Implement the concepts of files and directories in PHP and Shell Programming in Linux.
	CO4	Evaluate the database connectivity using PHP and SQLite.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT614		Core Paper XIV – Information Security		
Batch 2020-2021	Semester VI	Hours / Week 6	Total Hours 90	Credits 4

Course Objectives

1. To enable the students to learn fundamental concepts of computer security.
2. To provide an understanding of principal concepts, major issues, technologies and basic approaches in information security.
3. To understand the concepts of security policies such as authentication, integrity and confidentiality.

Course Outcomes (CO)

K1 to K4	CO1	Remembering the basic concepts of security and how to avoid threats.
	CO2	Understanding the issues and technologies in information security.
	CO3	Applying various protection mechanisms.
	CO4	Analyzing various legal and ethical issues in security.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT6CQ		Core Practical VI – Programming Lab – Open Source Tools		
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	VI	6	90	2

Course Objectives

1. To develop the ability to build efficient web based applications using PHP and to write shell programs in Linux.
2. To learn the basic constructs in PHP and Linux Programming.
3. To utilize the concepts of Shell Programming in Linux,Strings and Array functions in PHP applications.
.

Course Outcomes (CO)

K3 to K5	CO1	Recollect the concepts of Shell Programming ,creating a web page using HTML and validate it using PHP.
	CO2	Understand the concept of String functions and Arrays.
	CO3	Validate the file system functions.

Programme Code : 12		B.Sc. Information Technology		
Course Code:20UIT6Z1		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 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 gain confidence for implementing the task.
4. To gain confidence for solving the real time problems.

Course Outcomes (CO)

K3 to K5	CO1	Applying the programming skill for solving the project.
	CO2	Analyzing the task and to collect the necessary information about the system.
	CO3	Evaluating the project based on the software.

Programme Code : 12	B.Sc. Information Technology		
Elective –Artificial Intelligence			
Batch 2020-2021	Hours / Week 6	Total Hours 90	Credits 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	Remember the techniques of Artificial Intelligence in Problem Solving.
	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.

Programme Code : 12	B.Sc. Information Technology		
Elective –Big DataAnalytics			
Batch 2020-2021	Hours / Week 6	Total Hours 90	Credits 5

Course Objectives

1. To understand and apply scaling up machine learning techniques and associated computing techniques and technologies.
2. To identify the characteristics of datasets and compare the trivial data and big data for various applications.
3. To recognize and implement various ways of selecting suitable model parameters for different machine learning techniques.

Course Outcomes (CO)

K1 to K4	CO1	Understand the different dimensions of digital data.
	CO2	Apply the concept of data classification on different types of data.
	CO3	Analyze the characteristics of different patterns of data.
	CO4	Implement the concept of big data in different scenarios.

Programme Code : 12	B.Sc. Information Technology		
Elective- Data Mining			
Batch 2020-2021	Hours / Week 6	Total Hours 90	Credits 5

Course Objectives

1. To introduce the basic concepts of Data Mining algorithms, methods and tools.
2. To develop and apply critical thinking, problem-solving, and decision-making skills.
3. Todiscover interesting patterns, analyze supervised and unsupervised models and Estimate the accuracy of the algorithms.

Course Outcomes (CO)

	CO1	Remembering the data mining principles and techniques.
K1 to K4	CO2	Understanding the concept of raw data processing using data mining algorithms.
	CO3	Applying data mining algorithms to build analytical applications.
	CO4	Analyzing large amount of data to extract patterns and to solve problems.

Programme Code : 12	B.Sc. Information Technology		
Elective– Cloud Computing			
Batch 2020-2021	Hours / Week 6	Total Hours 90	Credits 5

Course Objectives

1. To teach the basics of cloud computing.
2. To understand the broad perspective of cloud architecture
3. To gain the knowledge of cloud services and cloud security.

Course Outcomes (CO)

	CO1	Identify the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud.
K1 to K4	CO2	Understand the core issues of cloud computing such as security, privacy, and interoperability.
	CO3	Apply the appropriate technologies and approaches for the related issues.
	CO4	Analyze the appropriate cloud computing solutions and recommendations according to the applications used.

Programme Code : 12	B.Sc. Information Technology		
Elective–Software Project Management			
Batch	Hours / Week	Total Hours	Credits
2020-2021	6	90	5

Course Objectives

1. To understand the overview of Software Project Characteristics and software

   Management.

2. To familiarize with the different methods and techniques used in project management.

3. To understand and reduce the failure issues of software projects.

4. To learn how effectively the project scheduling, risk analysis, quality management and project cost estimation can be implemented using various techniques.

Course Outcomes (CO)

K1 to K4	CO1	To remember various Life Cycle models in project development.
	CO2	Understand various concepts involved in project management, project planning and project scheduling.
	CO3	Analyze project risks, monitor and track project deadlines and produce a work plan and resource schedule.
	CO4	Apply the project management tools and techniques in a diversity of fields that include new product and process development, construction, information technology, and applied research.

Programme Code : 12	B.Sc. Information Technology		
Elective–Internet of Things			
Batch	Hours / Week	Total Hours	Credits
2020-2021	6	90	5

Course Objectives

1. To learn the concepts of IOT and its protocols.
2. To learn how to analysis the data in IOT.
3. To develop IOT infrastructure for popular applications.

Course Outcomes (CO)

K1 to K4	CO1	Remember IOT Architectures and Models.
	CO2	Understand the use of IOT in real time scenario.
	CO3	Apply the concept IOT in Networks.
	CO4	Analyze the use of various protocols in IOT

20UIT3SL

Programme Code : 12	B.Sc. Information Technology			
Course Code: 20UIT3SL	Skill Based Subject 1(Practical) - Multimedia Lab			
Batch	Semester	Hours / Week	Total Hours	Credits
2020-2021	III	2	30	3

Course Objectives

1. The course introduces the concepts of multimedia applications.
2. To develop an ability to design different types of shapes, text and images.
3. To apply the concepts multimedia in editing and designing an object.

Course Outcomes (CO)

K3 to K5	CO1	Apply the techniques of multimedia for various designing purposes.
	CO2	Analyze the use of different multimedia tools.
	CO3	Implement the concept of image editing and styling.

ProgrammeCode : 12		B.Sc. Information Technology		
Course Code: 20UIT4SM		Skill Based Subject 2 (Practical)-Web Programming Lab (HTML, CSS, XML)		
Batch 2020-2021	Semester IV	Hours / Week 2	Total Hours 30	Credits 3

Course Objectives

1. The course introduces the basic concepts of the World Wide Web, principles and tools that are used to develop Web applications.
2. To develop an ability to design and implement static and dynamic website.
3. Design and develop a Web site using text, images, links, lists, and tables for navigation and layout.

Course Outcomes (CO)

K3 toK5	CO1	Apply HTML tags for designing static pages and separate design from content using Cascading Style sheet.
	CO2	Analyze the use of interactive web applications.
	CO3	Implement the concepts of CSS styles to design web pages.

Programme Code: 12		B.Sc. Information Technology		
Course Code: 20UIT6SN		Skill Based Subject 3 (Practical)- Software Testing Lab		
Batch 2020-2021	Semester VI	Hours / Week 2	Total Hours 30	Credits 3

Course Objectives

1. To gain knowledge about recording the test case.
2. To design and construct the test cases.
3. To learn about the concepts of assert, verification, wait commands.
.

Course Outcomes (CO)

K3 to K5	CO1	Apply validation and verification in web applications.
	CO2	Analyze the fields of the text area in the applications.
	CO3	Implement the concepts of assert and verify.

Programme Code: 12	B.Sc. Information Technology			
EDC – Designing through Multimedia - GIMP				
Batch 2020-2021	Semester V	Hours / Week 2	Total Hours 30	Credits 3

Course Objectives

1. To include the foundation theories of basic photo editing program.
2. To understand the features of filters, Bezier curves, layer masks, and an animation package.
3. To introduce the basic concepts and theories that is used as the foundation of Photo and texture editing.

Course Outcomes (CO)

K3 to K5	CO1	Apply the advanced features including filters, Bezier curves, layer masks, and animation package.
	CO2	Analyze the significance of good photo creation/manipulation and its overall impacts
	CO3	Implement the programs using noise reduction, cropping, automatic image enhancement tools, color adjustment tools, gradients, and customizable brushes.

Programme Code : 12	B.Sc. Information Technology			
Non- Major Elective – Consumer Affairs				
Batch 2020-2021	Hours/Week 2	Total Hours 30	Credits 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.