



# **G.VENKATASWAMY NAIDU COLLEGE (Autonomous), KOVILPATTI.**

**Affiliated to Manonmaniam Sundaranar University – Tirunelveli.**

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## **Programme Outcomes - Department of Information Technology (UG)**

<b>GPO No.</b>	<b>Programme Outcomes</b>
PO1	Understand the fundamental concepts of Information Technology.
PO2	Gain knowledge on programming language to construct applications and packages to solve real-world problems using Information Technology concepts
PO3	Develop necessary skills to design digital system and acquire knowledge on computer hardware concepts and its functionality.
PO4	Enhance problem solving techniques, analytical and communication skills, team work and potential to develop software and network management.
PO5	Recognize the social and ethical responsibilities of a professional working in the discipline.
PO6	Create, select, and apply appropriate techniques, resources, and modern computing and IT tools including prediction and modeling to complex scientific activities with an understanding of the limitations.
PO7	Life-long learning: Recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change.



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## **Programme Specific Outcomes - Department of Information Technology (UG)**

<b>PSO No.</b>	<b>Intended Programme Specific Outcomes</b>
<b>PSO1</b>	Professionally skilled in the areas of programming, multimedia, web designing, and networking and to obtain knowledge in various domain-based electives.
<b>PSO2</b>	Accomplish the skill to design and develop computer programs, evaluate and recognize potential risks and provide innovative solutions.
<b>PSO3</b>	Explore technical knowledge in diverse areas of applications and experience an environment conducive in cultivating skills for successful career, entrepreneurship and higher studies. Effectively integrate IT-based solution into the user environment



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## **Course Outcome - Department of Information Technology**

### **B.Sc., Information Technology**

#### **First Semester**

#### **Core – 1**

#### **Programming in C (U20IT101)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand the fundamentals of Constants, Variables and Data Types, Decision making and Branching.
<b>CO2</b>	apply the concept of Operators and Expressions, Arrays, Structure and Union.
<b>CO3</b>	analyze the concept of Input and Output Operations, different types of arrays, and pointers.
<b>CO4</b>	evaluation of Expressions, Precedence of Arithmetic Operators, Arithmetic Operations on characters.
<b>CO5</b>	create the new programs using the concept of User-defined functions, Pointers and Files

#### **Core Lab - 1**

#### **Programming in C Lab (U20IT1P1)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and Understand the basic concept of C Programming
<b>CO2</b>	practice the use of conditional and looping statements
<b>CO3</b>	implement arrays, strings and pointers
<b>CO4</b>	implement recursion method and structure
<b>CO5</b>	gain skills to handle strings and files



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## **Elective Generic-1 Fundamentals of Office Automation Tools and HTML (U20IT1A1)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn the basics of MS-Word, Excel, Power Point Access and HTML.
<b>CO2</b>	understand about editing the document, working in sheets, Tags in HTML.
<b>CO3</b>	apply the concepts of Formatting the Text, Mail Merge, formulas and functions, Graphics, Charts and Frames.
<b>CO4</b>	analyze and evaluate the Mathematical Calculations.
<b>CO5</b>	create the custom style of document, animations, and web pages.

## **Elective - Generic Lab – 1 Office Automation Tools and HTML Lab (U20IT1AP)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand the basic concept of word, excel, power point, access and HTML
<b>CO2</b>	apply the concepts of Formatting the Text, Mail Merge, formulas and functions, Graphics, Charts and Frames
<b>CO3</b>	apply formulas, functions in excel.
<b>CO4</b>	analyze the Mathematical Calculations
<b>CO5</b>	create a database, animations, and web pages.



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## Second Semester

### Core – 2

### Programming with C++ (U20IT202)

CO No.	Course Outcome
CO1	learn and understand the basic concepts of Basic Concepts of Object-Oriented Programming, Function Prototyping, Constructors, and Pointers
CO2	apply the concepts of structure, member functions, operator overloading, files and Exception handling.
CO3	analyze the concept of basic keywords, functions, structures and Overloading, Type Conversion, files, I/O Operations and error handling.
CO4	evaluate the concept of controls structures, Memory Allocation for Objects, arrays, Virtual Functions.
CO5	build programs using inheritance, Pointers, Virtual function and Polymorphism Templates, file management and exception handling.

### Core Lab - 2

### Programming with C++ Lab (U20IT2P2)

CO No.	Course Outcome
CO1	learn and understand the concepts of oops for building object-based applications.
CO2	practice the use of conditional and looping statements.
CO3	analyze arrays, strings, pointers, Overloading Binary Operators, reading and writing data using files.
CO4	implement function overloading, operator overloading and friend function.
CO5	create a program for virtual function, try block, read and write file.



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## Elective- Generic-2

## Digital Design (U20IT2A2)

CO No.	Course Outcome
CO1	Learn the concepts of number system, logical gates, Circuits, Flip flops and registers.
CO2	Understand the digital logics, various combinational logical circuit, Multiplexers and registers.
CO3	Apply the concepts of number system, code, Karnaugh Map, 2's Complement, : Binary Addition and Binary Subtraction , Serial in serial out, serial in parallel out, parallel in serial out and parallel in parallel out
CO4	Analyze the types of logical gates , Karnaugh Simplifications, Sign-Magnitude Numbers
CO5	Evaluate Excess-3 Code, Gray Code and Flip flops.

## Elective - Generic Lab –2

## Image Editing and Designing Lab (U20IT2AP)

CO No.	Course Outcome
CO1	learn and understand Adobe Photoshop's digital imaging tools and techniques for image editing and transformation, tonal and color correction, and special effects.
CO2	utilize digital imaging tools to make selections work with layers, manipulate brushes and paint, utilize masks and channels, and incorporate vector drawing techniques.
CO3	analyze fundamental layout and design principles to original digital imaging work.
CO4	evaluate geometric methods in CorelDraw
CO5	design logo, Handbook and page frame



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## Third Semester

### Core – 3

### Programming with Java (U20IT303)

CO No.	Course Outcome
CO1	learn and understand Data types, Variables and Arrays, Operators, Inheritance Basics, Thread and Window Fundamentals
CO2	apply the concepts of control statements, classes, objects, exception, packages and interfaces and swings.
CO3	analyze arrays using simple programs, types of operators, Packages and AWT classes.
CO4	evaluate the concepts of Type Conversion, Iteration Statements, Jump Statements and Casting, Exception types and AWT Controls.
CO5	design and develop java program using arrays, inheritance, Multi-Threading and Working with Frame

### Core-4

### Data Structure (U20IT304)

CO No.	Course Outcome
CO1	learning and understanding the basic concepts of data structure, arrays, stacks, queues, trees, sorting
CO2	apply the concepts of Stacks, Queues and polynomial, arrays, trees, Graphs, types of sorting
CO3	analyze the binary tree and binary search tree, Laws and Hashing
CO4	evaluate the trees, post-order and pre-order and Kruskal's Algorithm, Working of sorting algorithms on data, Shortest Paths and Transitive.
CO5	develop a program using list, matrix, linked list, stack and queue concepts



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## **Core Lab – 3**

### **Programming with Java Lab (U20IT3P3)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand the concepts of Switch, if else, and Type casting, method overriding, swing, AWT
<b>CO2</b>	applying operators and class with methods and Inheritance
<b>CO3</b>	analyse the method overriding, derived and basic class working environments, Error Handling and Loops
<b>CO4</b>	evaluate java program with appropriate concepts like multilevel inheritance, graphical image display environment
<b>CO5</b>	write a Java program using fundamental and advanced java functions, Events.

## **Core lab-4**

### **Data Structure Lab (U20IT3P4)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	remember and understand the concepts of data structure such as arrays, stacks, queues, linked lists, trees and graphs
<b>CO2</b>	implement stacks, queues, Sorting Algorithms
<b>CO3</b>	analyze and manipulate a linked list, Trees, Bubble Sort, merge sort, Arrays
<b>CO4</b>	evaluate Infix to postfix expression, Tree Traversal
<b>CO5</b>	create and design data structure program using sorting techniques and Stacks and Queues.





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## **Core Elective - I**

### **Artificial Intelligence (U20IT3E1A)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand the concept of artificial intelligence and types of algorithms.
<b>CO2</b>	apply the A* Algorithm, AO * Algorithm, Means – Ends analysis and game playing.
<b>CO3</b>	analyse the AND – OR Graphs, minimax search procedure and robot architectures.
<b>CO4</b>	evaluate the BFS,DFS, heuristic search and predicate logic.
<b>CO5</b>	create an application for expert systems

## **Core Elective - I**

### **Multimedia Technology (U20IT3E1B)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn the Characteristics of Multimedia and Analog, Digital Representations.
<b>CO2</b>	understand the Various parts of Multimedia and its Properties.
<b>CO3</b>	apply the Image Processing Software and Audio & video Application in Multimedia.
<b>CO4</b>	analyze the various Multimedia Properties and image, Audio, video and animation applications.
<b>CO5</b>	evaluate the image, Audio, video and Animation Applications in Multimedia.



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## **Core Elective - I**

## **Computer Architecture (U20IT3E1C)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand the basic computer organization concepts, CPU and Input Output Organization
<b>CO2</b>	implement the Algorithm for Addition, Subtraction, Multiplication, Division.
<b>CO3</b>	analyse the function of CPU, Input Output Organization and Memory Organization
<b>CO4</b>	evaluate the various algorithm in Arithmetic and RISC, CISC Characteristics
<b>CO5</b>	Create an application using understanding of concepts

## **Employability Enhancement: 1Introduction to Information Technology (U20IT3EEA)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand the Role of Information Technology, Data representation, Computer Organization, types of input devices, computer memory, E-Commerce, internet
<b>CO2</b>	apply the Data representation, Memory Hierarchy, Emerging Trends in Information Technology, Media
<b>CO3</b>	analyze what are the trends, input and output devices, internet tools and techniques.
<b>CO4</b>	evaluate how to use internet, Media ,Memory, Tools
<b>CO5</b>	create the application oriented technologies in IT



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## **Employability Enhancement:1 Web Designing (U20IT3EEB)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand MySQL installation, PHP, XML, Frame Works
<b>CO2</b>	applying and analyze the variables, Array, String, cookies, Working with xml
<b>CO3</b>	analyzing front-end Application with desirable techniques.
<b>CO4</b>	evaluate working structure of an application
<b>CO5</b>	create the Database connection with PHP, Project in PHP & SQL

## **Fourth Semester**

### **Core – 5 Relational Database Management System (U20IT405)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand of data base system, relational algebra, basic SQL operations and pl/sql operations.
<b>CO2</b>	apply the concept of E-R Model, Normalization, Data Functions and Functions & Packages
<b>CO3</b>	analyze the Relational Algebra, joins and Commands.
<b>CO4</b>	evaluate Mapping Constraints, E-R Diagram, Simple tests against a list of values and Triggers.
<b>CO5</b>	create the Clusters, Sequences, Procedures and Packages.



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## Core – 6

### Operating System (U20IT406)

CO No.	Course Outcome
CO1	learn and understand the fundamentals of Operating System, Process management, inter-process communication, and memory and information management.
CO2	apply booting, process scheduling, deadlock strategies, single Contiguous memory management, fixed partition memory management and case study.
CO3	analyze the Operating System Structure, Suspend/resume operation, Classical IPC problems and virtual memory management system.
CO4	evaluate deadlock prerequisites and File System in Unix and Linux.
CO5	create an open source based application.

## Core – 07

### Principles of Information Technology (U20IT407)

CO No.	Course Outcome
CO1	learn and understand the fundamentals of computer system, telecommunication system, multimedia and hypermedia.
CO2	apply the Classification of digital computer systems, Types of modulations, Types of network, Artificial Intelligence & Business Intelligence
CO3	analyze the knowledge on computer software, Multimedia related software, network topology, Communication System, OLAP.
CO4	evaluate the functions & classification of OS, ISDN – ADSL – T1 & T3 line connection, Virtual reality and Geographical Information System
CO5	create Knowledge Discovery in Databases (KDD) and real time application of IT.



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## **Core Lab - 5                      Relational database management system Lab (U20IT4P5)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand Sql and Pl/sql
<b>CO2</b>	apply the concept of aggregate operators, trigger, joins and sub queries
<b>CO3</b>	analyze the concept of different commands in Sql
<b>CO4</b>	evaluate the various mathematical operations using conditional structure.
<b>CO5</b>	create tables of students, course, employee using PL/SQL Procedure and triggers.

## **Core Lab -6    Linux Lab (U20IT4P6)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and Understand the basic concept of Linux commands.
<b>CO2</b>	apply the gcc, date, who, who am i, man, cal, echo, bc ,Pipe and Filter
<b>CO3</b>	analyse Directory oriented, File oriented, Process oriented and Communication oriented commands.
<b>CO4</b>	evaluate Fibonacci series, whether given string is palindrome or not and factorial of a given integer.
<b>CO5</b>	create student mark statement using shell script.



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## Core Elective - II Operations Research & Numerical Analysis (U20IT4E2A)

CO No.	Course Outcome
CO1	learn and understand the concept of transportation, assignment and sequence problems.
CO2	apply the Formulation of the Transportation Problem, Mathematical formulation of the problem, Sequencing Problem and Gauss Jordan elimination method.
CO3	analyze the concept of Triangular Basis in a Transportation Problem, Cost Method or Matrix Minima Method, Vogel's Approximation Method, Assignment method, Problem of Sequencing and Inverse interpolation.
CO4	evaluate the West Corner rule, type of process Vs machine jobs, Gauss Jordan elimination method and Divide difference interpolation.
CO5	creating an initial basic feasible solution, Calculation of inverse of a matrix and newton's interpolation formula

## Core Elective - II Software Testing (U20IT4E2B)

CO No.	Course Outcome
CO1	learn and understand basic concepts and the processes that lead to software testing.
CO2	design test cases from the given requirements using Black box testing techniques and Identify the test cases from Source code by means of white box testing techniques.
CO3	analyze user acceptance testing and generate test cases for it.
CO4	evaluate the test adequacy criteria to complete the testing process.
CO5	Create a test planning, test management , test process and test reporting



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## **Core Elective – II**

## **Object oriented analysis and design (U20IT4E2C)**

<b>CO No.</b>	<b>Course Outcome</b>
<b>CO1</b>	learn and understand the fundamentals of OOAD, UML diagram, dynamic diagram.
<b>CO2</b>	apply the concept of Use case Modeling, Associations, Attributes, Dynamic Diagrams and GRASP and Object Oriented Methodologies.
<b>CO3</b>	analyze case Modeling, Aggregation and Composition, Component and Deployment Diagrams, Applying GoF design patterns and Mapping design to code.
<b>CO4</b>	evaluate the Class Diagrams, State Diagrams and Activity diagram.
<b>CO5</b>	Develop Test Cases and Test Plans