



G.VENKATASWAMY NAIDU COLLEGE (Autonomous), KOVILPATTI.

Affiliated to Manonmaniam Sundaranar University – Tirunelveli.

(Re-Accredited with 'A' Grade by NAAC)

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Programme Outcomes - Department of Computer Science (UG)

GPO No.	Programme Outcomes
PO1	Scientific knowledge: Ability to apply mathematics, logic, and statistics to the design, development, and analysis of software systems.
PO2	Problem analysis: Ability to understand, design, and analyze precise specifications of algorithms, procedures, and interaction behavior.
PO3	Design/development of solutions: Ability to design components, systems and/or processes to meet required specifications.
PO4	Conduct investigations of complex problems: Ability to be equipped with a range of fundamental principles of Computer Science that will provide the basis for future learning and enable them to adapt to the constant rapid development of the field.
PO5	Modern tools usage: Ability to demonstrate competence in the practical art of computing in by showing in design an understanding of the practical methods, and using modern design tools competently for complex real-life IT problem.
PO6	The software engineer and society: Ability to develop creative and effective responses to intellectual, professional and social challenges.
PO7	Environment and sustainability: Ability to apply decision making methodologies to evaluate solutions for efficiency, effectiveness and sustainability.



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Programme Specific Outcomes - Department of Computer Science (UG)

PSO No.	Intended Programme Specific Outcomes
PSO1	Demonstrate mastery of Computer Science in the following core knowledge areas <ul style="list-style-type: none">• Programming Languages and Data Structures• Databases, Software Development and Maintenance• Computer Hardware and Architecture
PSO2	Apply problem-solving skills and the knowledge of computer science to solve real world problems.
PSO3	Develop technical project reports and present them orally among the users.

Course Outcome - Department of Computer Science

B.Sc., Computer Science

First Semester

Core - 1

Programming in C (U20CS101)

CO No.	Course Outcome
CO1	Students will be able to remember the essential notions of C Programming
CO2	Understand the concepts of C programming
CO3	Students will be able to apply different features of C Programming to real time applications
CO4	Analyze and discover bugs in the program.
CO5	Evaluate an application using memory management functions.



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Elective Lab –1

C Programming lab (U20CS1P1)

CO No.	Course Outcome
CO1	recall the mathematical functions while creating a program
CO2	understand the fundamental programming concepts
CO3	apply the concepts to find solution for the problems
CO4	illustrate the programming technique to analyze software problems
CO5	design and develop the simple application.

Elective Generic -1

Digital Principles and Application (U20CS1A1)

CO No.	Course Outcome
CO1	design digital circuits using simplified boolean functions
CO2	apply design combinational circuits
CO3	analyze and design synchronous and asynchronous sequential circuits
CO4	evaluate programmable logic devices
CO5	implement HDL code for combinational and sequential circuits

Elective Lab –1

Office Automation (U20CS1AP)

CO No.	Course Outcome
CO1	students will be able to understand about document and spread sheet preparation
CO2	apply formulas and make what if analysis in excel
CO3	students will have the ability to analyze different presentation styles.
CO4	evaluate database management application
CO5	create database management application



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Second Semester

Core - 2 C++ Programming and Data structures (U20CS202)

CO No.	Course Outcome
CO1	remember and understand the procedures and object-oriented programming concepts
CO2	apply advanced data structure strategies for exploring complex data structures.
CO3	analyze all data structures like stacks, queues, trees, lists and graphs and compare their performance and trade offs
CO4	evaluate data structures into the applications such as trees and graphs implement data structure algorithms through c++.
CO5	to make students as creating algorithms for real applications related to life skills.

Core Lab -2 C++ Programming and Data structures Lab (U20CS2P2)

CO No.	Course Outcome
CO1	understand and identify the appropriate data structure for given problem
CO2	apply appropriate data structure and algorithm design method for a specified Program.
CO3	Analyze C++ concepts to all data structures algorithm like stacks, queues, trees, lists and graphs and compare their Performance and trade offs
CO4	Evaluate different implementations of data structures and to recognize the advantages and disadvantages of them.
CO5	To make students as creating algorithms for real applications related to Life Skills.



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Elective Generic - 2

Discrete Mathematics (U20CS2A2)

CO No.	Course Outcome
CO1	Understand mathematical reasoning in order to read, comprehend, and construct mathematical arguments.
CO2	Remember enumerate objects and perform combinatorial analysis.
CO3	Apply the relations and functions and be able to determine their properties.
CO4	Analyze and verify whether an algorithm works well and perform analysis in terms of memory and time.
CO5	evaluate model problems with the concepts and techniques of discrete mathematics.

Elective Generic Lab –2

Linux Lab (U20CS2AP)

CO No.	Course Outcome
CO1	Students will be able to understand the basic commands of linux operating system and can write shell scripts
CO2	Apply various types of servers
CO3	Analyze and explain the requirements for linux program
CO4	Evaluate shell programming
CO5	Students will be able to create files and directories and operate them



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Third Semester

Core – 3

Programming with Java (U20CS303)

CO No.	Course Outcome
CO1	understand the concept of Object-oriented programming. Objects and classes. Operators.
CO2	apply software in the Java programming language, (application)
CO3	analyze user requirements for software functionality required to decide whether the Java programming language can meet user requirements (analysis)
CO4	evaluate the use of certain technologies by implementing them in the Java programming language to solve the given problem (synthesis).
CO5	create the concepts to solve a real-time problem

Core Elective -1

Computer Networks (U20CS3E1A)

CO No.	Course Outcome
CO1	remember the essential notions of Networks
CO2	understand the concepts of Network layers and protocols
CO3	apply different features of Network Programming to real time applications & Analyze and discover bugs in the program
CO4	analyze an application using network management functions.
CO5	Evaluate the concepts to solve a real-time problem



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Core Lab -3

Programming with Java Lab (U20CS3P3)

CO No.	Course Outcome
CO1	Remember list and use of Object Oriented Programming concepts for problem solving.
CO2	understand Java collection API as well as the java standard class library
CO3	apply the inter-disciplinary applications using the concept of inheritance.
CO4	analyze JDBC to provide a program level interface for communicating with database using java programming.
CO5	design and develop the simple application.

Core Lab -4

Web Programming Lab (U20CS3P4)

CO No.	Course Outcome
CO1	Remember basic concepts of Web Sites structure
CO2	understand anatomy of a Web Page formation
CO3	apply CSS based designs
CO4	illustrate – XML Programming and AJAX
CO5	demonstrate JavaScript and VBScript

Core - 4

Web Programming (U20CS304)

CO No.	Course Outcome
CO1	remember and understand Web Design concepts
CO2	apply User Interface and User Design in webpage
CO3	Analyze and implement script-based web pages
CO4	evaluate XML and AJAX programs in forms
CO5	create attractive websites



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Core Elective

System Software (U20CS3E1B)

CO No.	Course Outcome
CO1	learn basic ideas on system software
CO2	apply Algorithm and Data structures for a Linking loader
CO3	understand the methods to architect software and lexical analysis
CO4	gather & analyze Conception Assembler and software
CO5	use text editors and debugging methods

Core Elective

Operations Research (U20CS3E1C)

CO No.	Course Outcome
CO1	remember and understand Linear Programming Problems
CO2	apply Transportation and Assignment Problems
CO3	analyze the usage of game theory and Simulation for Solving Business Problems
CO4	evaluate the mathematical tools that are needed to solve optimization problems. Use mathematical software to solve the proposed models. .
CO5	create mathematical models for quantitative analysis of managerial problems in industry. .

Employability Enhancement - I

Photoshop (U20CS3EEA)

CO No.	Course Outcome
CO1	learn the basic concepts and skills required.
CO2	apply the skills and knowledge acquired in Adobe Photoshop are sufficient to be able to understand the Photoshop screen.
CO3	analyze the work with image editing and graphic design features.
CO4	evaluate the use of more advanced editing Tools
CO5	to solve visual problems in real world applications.



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Employability Enhancement - I

CoreIDraw (U20CS3EEB)

CO No.	Course Outcome
CO1	understand and demonstrate the usage of Drawing Shapes
CO2	apply design templates with different shapes
CO3	analyze toolbox for resizing the objects
CO4	evaluate the use Text Tool for resizing the text formats
CO5	hands-on CorelDraw experience for professional advancements

Fourth Semester

Core – 5

RDBMS (U20CS405)

CO No.	Course Outcome
CO1	understand the different data models
CO2	apply conceptual design in a relational database model
CO3	analyze the constraints to be enforced
CO4	evaluate the existing database for good design
CO5	create a normalized database

Core - 6

Operating System (U20CS406)

CO No.	Course Outcome
CO1	remember the basic concepts of operating systems.
CO2	understand the various concepts of process Scheduling.
CO3	apply the various concepts of memory management techniques.
CO4	identify and estimate process management & thread management strategies along with their different operations (Process creation)
CO5	evaluate the concepts to solve a real-time problem



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Core-7

Python Programming (U20CS407)

CO No.	Course Outcome
CO1	remember and understand test and debug Python Programs
CO2	implement Conditionals and Loops for Python Programs
CO3	analyze the functions and represent Compound data using Lists, Tuples and Dictionaries
CO4	evaluate read and write data from & to files in Python
CO5	create classes and objects

Core Elective- 2

Visual Basic (U20CS4E2A)

CO No.	Course Outcome
CO1	Remember the essential notions of VB Programming
CO2	Understand the concepts of VB programming
CO3	Students will be able to apply different features of VB Programming to real time applications & Analyze and discover bugs in the program
CO4	Analyze an application using memory management functions.
CO5	Evaluate the concepts to solve a real-time problem

Core Elective - 2

Computer Graphics (U20CS4E2B)

CO No.	Course Outcome
CO1	define basics of Computer Graphics along with output primitives
CO2	apply outline various 2D geometric transformations and viewing
CO3	analyze various text and image representation
CO4	evaluate various audio transmission concepts
CO5	create various video transmission files, formats and software



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Core Elective – 2

Design and Analysis of Algorithm (U2OCS4E2C)

CO No.	Course Outcome
CO1	remember and understand worst-case running times of algorithms using asymptotic analysis.
CO2	apply divide-and-conquer algorithms. Derive and solve recurrences describing the performance of divide-and-conquer algorithm.
CO3	analyze algorithms that employ this paradigm. Synthesize dynamic-programming algorithms, and analyze them.
CO4	evaluate graphs to model engineering problems, when appropriate. Synthesize new graph algorithms and algorithms that employ graph computations as key components, and analyze them
CO5	create randomized algorithms. Employ indicator random variables and linearity of expectation to perform the analyses. Recite analyses of algorithms that employ this method.

Core Lab –5

RDBMS Lab (U2OCS4P5)

CO No.	Course Outcome
CO1	Remember and understand SQL constructs for database creation
CO2	apply the problem and queries
CO3	skill to analyze the constraints to be enforced
CO4	ability to evaluate the existing database for good design
CO5	create a database for a given problem



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Core Lab – 6

Python Programming Lab (U20CS4P6)

CO No.	Course Outcome
CO1	remember the essentials of Python
CO2	understand about List and Dictionaries
CO3	apply formulas in programs.
CO4	analyze different methods to programs
CO5	Evaluate different programs