



VIVEKANANDA COLLEGE

TIRUVEDAKAM WEST, MADURAI DISTRICT - 625 234, TAMIL NADU

Vision & Mission and PEOs, PSO's & POs

DEPARTMENT OF COMPUTER SCIENCE

Choice Based Credit System (CBCS)

and

Learning Outcomesbased Curriculum Framework

(LOCF)

DEPARTMENT OF COMPUTER SCIENCE

Vision

The vision of the department is to become a leading college in offering high-quality undergraduate programs in computing sciences to a large number of talented students. To evolve as a Computer Science with center of excellence to serve the changing needs of Indian industry and society.

Mission

The mission of the department is to offer a high-quality education in the art and science of computing, as well as to prepare students for career opportunities in this area requiring a high level of technical Remembering and skill.

- Our programs have a central core of requirements covering the fundamental areas of computing sciences.
- Our programs have co-requirements to assure that our graduates have thorough training in logical and critical reasoning needed for continuing intellectual growth.
- Our programs meet the needs of adult students with interest in skill enhancement for current jobs or retraining in the computing sciences.
- To provides support to the general education and other academic programs in the college.
- Contribution to welfare of the society through services

Programme Educational Objectives (PEO)

A graduate of B.Sc. Computer Science Programme after five years will

PEO 1	Utilising the computer science concepts in the day to day life for better living. Graduates of the programme will pursue higher education
PEO 2	Graduates of the programme will continue to learn and adopt latest technologies to solve real life problems
PEO 3	Graduates of the programme will be successful in their professional careers, including entrepreneurship using their Remembering in computer science
PEO 4	Showing continuous improvement in their professional career through life-long learning, appreciating human values and ethics
PEO 5	Developing the teamwork and leadership skills acquired through life-training to improve their work environment and relations

Programme Specific Outcomes (PSOs)

At the end of the programme the student will

PSO1	Analyze and build application models and prototypes for various industry domains
PSO2	Specialize in using different programming languages, platforms to provide effective solutions
PSO3	Develop and implement different algorithms, user interface methods in the process of providing solutions
PSO4	Applying programming Remembering in software projects to develop, communicate, implement, test and maintain a software environment.
PSO5	Work in teams with reasonable verbal and written communication in a profession.

Programme Outcomes (POs)

On completion (after three years) of B.Sc. Computer Science Programme, the students are expected to

P.No.	Programme Outcome	Description
PO1	Disciplinary Knowledge and Critical Thinking	Take informed actions after identifying the assumptions that frame our thinking and actions, checking out degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from perspectives.
PO2	Effective Communication and Digital Literacy	Speak, read, write and listen clearly in person and through electronic media in English and in one Indian language, and make meaning of the world by connecting people, ideas, books, media and technology.
PO3	Social Interaction and Problem Solving	Elicit views of others, mediate disagreements and help reach conclusions in group settings.
PO4	Effective Citizenship and Social Responsibility	Demonstrate empathetic social concern and equity centred national development, and the ability to act with an informed awareness of issues and participate in civic life through volunteering and life training.
PO5	Professional Ethics and Human Values	Recognize different value systems including your own, understand the moral dimensions of your decisions, and accept responsibility for them.
PO6	Environment and Sustainability	Understand the issues of environmental contexts and Sustainable development.
PO7	Self –directed and life – long learning	Acquire the ability to engage in independent and life – long learning in the broadest context socio- technological changes

Part-III: Core Theory	Course Code: 10CT11
Course Title: PROGRAMMING IN C	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Understanding the basic concepts of C, constants, variables and data types and to Applying the concept of decision making and looping	K1 K2 K3
CO 2	Understanding the concept of array and String .Develop C programs for arrays and string	K1 K2 K3
CO 3	Understanding and Applying the concept of function ,Category of function, Nesting of function	K1 K2 K3
CO 4	Understanding and Applying the concept of structure and union	K1 K2 K3
CO 5	Understanding and Applying the concept of pointers and file management	K1 K2 K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Core Theory	Course Code: 10CT12
Course Title: DIGITAL ELECTRONICS	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Define the basic concepts of number system and discrete logic	K1 K2 k3
CO 2	Understanding and Applying the concepts of Boolean Algebra, Boolean law & theorems, Sum of product, K-Map simplifications	K1 K2 K3
CO 3	Understanding and Applying the concepts of Multiplexers, DeMultiplexrs, Decoders, Encoders, Binary Addition and subtraction.	K1 K2 K3
CO 4	Understanding and Applying the concepts of Flip Flops, Clocks and Timers	K1 K2 K3
CO5	Understanding and Applying the concepts of Shift Register and Counters	K1 K2 K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Allied Course Theory	Course Code: 10AT11
Course Title: DISCRETE MATHEMATICS	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Define the basic concepts of set theory. Understanding and Applying the concepts of functions, relations, mathematical induction and permutation, combination	K1 K2 K3
CO 2	Explain about the Types of Matrix, addition, subtraction, multiplication, rank, inverse of matrix. Applying the Eigen values & vector, cayley Hamilton theorem	K1 K2 K3
CO 3	Prove implication problems using truth table method, Obtain PCNF and PDNF of given logical expression	K1 K2 K3
CO 4	Applying the concepts of Induction, Recursions and Recurrence relations	K1 K2 K3
CO5	Applying the concepts of graph theory	K1 K2 K3

K1-Remembering K2-Understanding K3-Applying

Part-III: Core Theory	Course Code: 10CT21
Course Title: OBJECT ORIENTED PROGRAMMING WITH C++ AND DATA STRUCTURE	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Explain the principles of OOPs, Control structure & Operator	K1, K2, K3
CO 2	Develop solutions for problems using class and object concepts. Explain about the Constructor & Destructor	K1, K2, K3
CO 3	Explain the Inheritance, Pointer & Polymorphism. Develop the Program use this concept	K1, K2, K3
CO 4	Explain the basic data structures and its operations. Stack, Queue & linked list	K1, K2, K3
CO 5	Explain about the basic non linear data structure are Tree, Sorting & Graph	K1, K2, K3

K1-Remembering K2-Understanding K3-Applying

Part-III: Core Theory	Course Code: 10CT22
Course Title: MICROPROCESSOR & INTERFACING TECHNIQUES	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Identify the basic functions of a microprocessor and explain the single chip, bit slice, RISC & CISC, Embedded & MMX technology	K1, K2, K3
CO 2	Explain the pin description of 8086, Register Organisation and address mode.	K1, K2, K3
CO 3	Explain the instruction sets of 8086 microprocessors. Make use of the instruction set of 8086 microprocessor and develop assembly code to solve problems	K1, K2, K3
CO 4	. Illustrate the use of various general-purpose interfacing devices.	K1, K2, K3
CO 5	Compare the architecture of PowerPC 601, Pentium & Pentium pro	K1, K2, K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Allied Theory	Course Code: 10AT21
Course Title: STATISTICS & PROBABILITY	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Applying and basic concepts of frequency distribution, mean, median & mode	K1, K2, K3
CO 2	Basic concepts and Applying the mean deviation, standard deviation and root mean square deviation, coefficient of dispersion, coefficient variation, measure of dispersion	K1, K2, K3
CO 3	Applying the basic concepts of theory of probability, Bays Theorem	K1, K2, K3
CO 4	Identify an Applying the random variables & distribution function	K1, K2, K3
CO 5	Applying the exact sampling distribution	K1, K2, K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Core Theory	Course Code: 10CT31
Course Title: COMPUTER ORGANISATION WITH PARALLEL PROCESSING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of organization and working principle of computer hardware components. Machine Instructions & program	K1,K2,K3
CO 2	Summarize the execution sequence of instruction through the processor, Addressing mode, Program control	K1,K2,K3
CO 3	Explain the concept of Input/output organisation & Memory organization	K1,K2,K3
CO 4	Basic concepts of parallel processing, Mechanisms & Application	K1,K2,K3
CO5	Explain the structure & algorithm for array processors, Multiprocessor architecture & programming	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Core Theory	Course Code: 10CT32
Course Title: COMPUTER GRAPHICS	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Define basic concept of graphics, A Survey of Computer Graphics, Input Devices, Hard Copy Devices & Graphics Software	K1,K2,K3
CO 2	Explain the various algorithms in graphics	K1,K2,K3
CO 3	Explain about transformation and its function	K1,K2,K3
CO 4	Design 2D & 3D geometrical transformations, 3 D display methods, Clipping Operation	K1,K2,K3
CO5	Design the 3D display methods ,graphical packages and its transformation	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Allied Theory		SEMESTER – III
Course Title: OPERATIONS RESEARCH		
Course Code: 10AT31	Hours per week: 4	Credits: 5
CIA Marks: 25 Marks	ESE Marks: 75 Marks	Total Marks: 100 Marks

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of operation research, Characteristics, phases, tools, techniques, methods and scope of OR	K1,K2,K3
CO 2	Applying linear programming model as Stack & Surplus variable, Graphical solution	K1,K2,K3
CO 3	Applying the various methods of LPP	K1,K2,K3
CO 4	Applying the mathematical formulation of assignment problem	K1,K2,K3
CO5	Applying the mathematical formulation of transportation problem	K1,K2,K3

K1-Remembering K2-Understanding K3-Applying

Part-III: Core Theory	Course Code: 10CT41
Course Title: RELATIONAL DATABASE MANAGEMENT SYSTEM	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Define the fundamental elements of database systems & RDBMS. Explain the Relational Algebra & data Modelling	K1,K2,K3
CO 2	Explain the Normalization & database programming	K1,K2,K3
CO 3	Explain the integrity, security and concurrency	K1,K2,K3
CO 4	Applying the oracle query like as basic function, Aggregate function	K1,K2,K3
CO5	Explain the basic concepts of PL/SQL, Cursor and Trigger	K1,K2,K3

K1-Remembering K2-Understanding K3-Applying

Part-III: Core Theory	Course Code: 10CT42
Course Title: DOT NET PROGRAMMING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Define the fundamental concepts of .NET	K1,K2,K3
CO 2	Explain the basic concepts of VB.Net	K1,K2,K3
CO 3	Explain the controls and menus of .NET	K1,K2,K3
CO 4	Summarize the concepts of server control, XML & Web services	K1,K2,K3
CO5	Applying the connection of database using ADO.Net	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Allied Theory	Course Code: 10AT41
Course Title: NUMERICAL METHODS FOR COMPUTER SCIENCE	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Applying the methods of Newton Raphson, Bisection, Iteration, Convergence, Gauss elimination & Gauss Seidel Iteration	K1,K2,K3
CO 2	Applying the methods of Gauss Jordan elimination, Matrix inversion, Gregory Newton Forward & backward interpolation formula	K1,K2,K3
CO 3	Understanding the Gauss forward & backward interpolation formula, Laplace everet formula, Lagrange's interpolation formula	K1,K2,K3
CO 4	Applying the Newton forward and backward differences to compute derivatives, Romberg's method, Simpson's 1/3 rule and 3/8 rule	K1,K2,K3
CO5	Applying the Taylor's series method, Euler's method, Runge kutta methods	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Core Theory	Course Code: 10CT51
Course Title: COMPUTER NETWORKS	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of Data Communication & networking	K1, K2, K3
CO 2	Summarize the Concepts of physical layer in networks	K1, K2, K3
CO 3	Explain the concept of Data link layer	K1, K2, K3
CO 4	Explain the concepts of Transport & Network layer	K1, K2, K3
CO5	Explain the Application layer & Network security	K1, K2, K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Core Theory	Course Code: 10CT52
Course Title: JAVA PROGRAMMING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Define basic concept of object-oriented programming, Datatypes, Array, Operator.	K1,K2,K3
CO 2	Explain the basic concepts of class, object, methods & constructors	K1,K2,K3
CO 3	Explain about the inheritance, interface & packages	K1,K2,K3
CO 4	Explain the concepts of Multithreading & Exception handling	K1,K2,K3
CO5	Explain the basic concepts of Applet & networking.	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Core Theory	Course Code: 10CT53
Course Title: SOFTWARE ENGINEERING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of Software Engineering	K1, K2, K3
CO 2	Explain about the concept of software cost estimation	K1, K2, K3
CO 3	Explain about the concept of Software requirement definition	K1, K2, K3
CO 4	Explain the concept of how to design the software & testing	K1, K2, K3
CO5	Basic concept of Verification & Validation Technique	K1, K2, K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Elective Theory	Course Code: 10EP1A
Course Title: CLOUD COMPUTING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of Cloud Computing	K1, K2, K3
CO 2	Explain about the concept of delivery models in cloud computing and migrating to cloud	K1, K2, K3
CO 3	Explain about the concept of cost management in cloud and selection of cloud provider	K1, K2, K3
CO 4	Explain the concept of how to design the standards in cloud	K1, K2, K3
CO5	Basic concept of cloud governance	K1, K2, K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Elective Theory	Course Code: 10EP2A
Course Title: MOBILE COMPUTING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of Mobile Computing and its model	K1, K2, K3
CO 2	Explain about the concept of Physical layer in mobile computing	K1, K2, K3
CO 3	Explain about the concept of Cellular communication and GSM	K1, K2, K3
CO 4	Explain the concept of wireless Lan & Bluetooth	K1, K2, K3
CO5	Basic concept of WAP & WML	K1, K2, K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Core Theory	Course Code: 10CT61
Course Title: WEB PROGRAMMING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of HTML,CSS and its properties	K1,K2,K3
CO 2	Basic concept of JavaScript and its properties	K1,K2,K3
CO 3	Explain the concept of JavaScript documents and its various implements of objects	K1,K2,K3
CO 4	Basic concepts of PHP.	K1,K2,K3
CO5	Explain the concept of function in PHP and how to connect the database connectivity with PHP	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Elective Theory	Course Code: 10EP2A
Course Title: DATA MINING AND DATA WAREHOUSING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of Data mining and its classification, functionalities of Data mining.	K1,K2,K3
CO 2	Basic concept of Data Warehouse and its architecture	K1,K2,K3
CO 3	Explain the concept of data generalization and association rules in large database.	K1,K2,K3
CO 4	Explain the concepts of Classification and Cluster analysis	K1,K2,K3
CO5	Explain the concept of application and trends in data mining	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying

Part-III: Elective Theory	Course Code: 10EP2B
Course Title: DIGITAL IMAGE PROCESSING	

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

No.	Course Outcome	Knowledge Level (according to Bloom's Taxonomy)
CO 1	Basic concept of Digital image processing, application and its types	K1,K2,K3
CO 2	Explain the concept of Image transforms and Enhancement	K1,K2,K3
CO 3	Explain the concept of Edge detection	K1,K2,K3
CO 4	Explain the concepts of Region and Shape representation	K1,K2,K3
CO5	Explain the concept of Image segmentation and data compression	K1,K2,K3

K1-Remembering

K2-Understanding

K3-Applying