

# **NEHRU MEMORIAL COLLEGE (AUTONOMOUS)**

**NATIONALLY ACCREDITED WITH "A" GRADE BY NAAC  
PUTHANAMPATTI, TRICHY - 621007**



**DEPARTMENT OF COMPUTER SCIENCE**

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**COURSE OUTCOME (COS)**

| Name of the Course                       | Course outcomes   |
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| <b>CC-I PROBLEM SOLVING USING PYTHON</b> | <b>Co1:</b> Write programs to solve simple problems   |
|  | <b>Co2:</b> Interpret and manipulate the data structures  |
|  | <b>Co3:</b> Store and manipulate data using file system and handling errors   |
|  | <b>Co4:</b> Solve problems using oops concept   |
|  | <b>Co5:</b> Design gui forms using tkinter  |
| <b>CC-II PROBLEM SOLVING LAB</b>         | <b>Co1:</b> Develop and execute programs using operators and control structures   |
|  | <b>Co2:</b> Solve programs using sequences, functions and modules   |
|  | <b>Co3:</b> Design and execute programs using oops concepts and tkinter module  |
| <b>AC-I BASIC MATHEMATICS</b>            | <b>Co 1:</b> Recollect the basic concepts of matrices and differentiation.  |
|  | <b>Co 2:</b> Understand the concepts about fundamental of ode and characteristic equation of a linear transformation and cayley hamilton theorem.   |
|  | <b>Co 3:</b> Solving the differential equations when the rhs is of the type $e^{kx}$ , $e^{ax}$ , , , ,   |
|  | <b>Co 4:</b> Demonstrate the laplace transform and the apply the differential equation and fourier series, finding fourier constants for periodic function with period $2\pi$ and half range fourier series with period $\pi$ . |

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| <b>AC-II<br/>OPERATIONS<br/>RESEARCH</b>                             | <b>Co 1:</b> Understand linear programs from standard business problems.   |
|  | <b>Co 2:</b> Construct a project network and apply program evaluation review technique and critical path management. |
|  | <b>Co 3:</b> Apply the fundamental concept of sequencing problem.  |
|  | <b>Co 4:</b> Solve the problems using pert and cpm methods.  |
| <b>CC- III<br/>PROGRAMMIN<br/>G IN C AND<br/>DATA<br/>STRUCTURES</b> | <b>Co1:</b> Understand the basic concepts of c programming language  |
|  | <b>Co2:</b> Apply arrays, functions, structures and union concepts in solving problems                               |
|  | <b>Co3:</b> Develop programs using pointers  |
|  | <b>Co4:</b> Design and develop file handling tasks   |
|  | <b>Co5:</b> Implement the fundamental data structures using c language   |
| <b>CC-IV DATA<br/>STRUCTURES<br/>USING C LAB</b>                     | <b>Co1:</b> Solve the problems using c language concepts   |
|  | <b>Co2:</b> Implement the data structures using arrays and pointers  |
| <b>ACIII-<br/>NUMERICAL<br/>AND<br/>STATISTICAL<br/>METHODS</b>      | <b>Co 1:</b> Understands different methods to solve the non-linear equations   |
|  | <b>Co 2:</b> Acquire the knowledge of regression analysis  |
|  | <b>Co 3:</b> Apply various methods to solve various integrals  |
|  | <b>Co 4:</b> Apply various methods to solve various integrals  |

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| <b>SKBC - I DATA ANALYTIC LAB</b>                 | <b>Co1:</b> Apply built in functions of spread sheet   |
|   | <b>Co2:</b> Prepare charts using the data in the spreadsheet.  |
|   | <b>Co3:</b> To transpose a matrix and use pivot table  |
|   | <b>Co4:</b> Demonstrate the data analysis using data analysis toolpak in spreadsheet.                  |
| <b>CC-V OBJECT ORIENTED PROGRAMMING USING C++</b> | <b>Co1:</b> Describe the basic concepts of oop and the syntax of c++ language                          |
|   | <b>Co2:</b> Apply the knowledge of functions, classes and objects to solve problems in the real world. |
|   | <b>Co3:</b> Experiment destruction of objects the concepts of initialization and                       |
|   | <b>Co4:</b> Test the usage of overloading of unary and binary operators                                |
|   | <b>Co5:</b> Demonstrate the usage of inheritance and polymorphism while solving real time problem      |
|   | <b>Co6:</b> Apply file concepts and solve problems related to data files.                              |
| <b>CC- VI OOPS LAB</b>                            | <b>Co1:</b> Apply the concepts of c++ language to solve problems                                       |

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| <b>AC-IV ALLIED<br/>PHYSICS -I</b>                   | Co 1: Students should be able to apply the idea of transistors                             |
|  | Co 2: Students can be evaluating the electronic devices for specific applications.         |
|  | Co 3: Students can be able to perform various conversion processes in digital electronics. |
|  | Co 4: They can analyze and design various combinational and sequential circuits.           |
|  | Co 5: We learn the combinational circuits.   |
| <b>SKBC - II<br/>IMAGE<br/>EDITING LAB</b>           | Co1: Apply various animation techniques  |
|  | Co2: Apply various concepts of image editing using gimp tool                               |
| <b>AC-V - APPLIED<br/>PHYSICS<br/>PRACTICAL - II</b> | Co 1: Understand the concepts and use research equipment (microscope, oscilloscope, etc.)  |
|  | Co 2: Design and conduct experiments that probe materials properties.                      |
|  | Co 3: Work independently and function as a team.   |
|  | Co 4: Develop communication skills (oral, graphic and written).                            |

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| <b>CC - VII<br/>DATABASE<br/>SYSTEMS</b> | <b>Co1:</b> Understand the fundamentals of database system.                                       |
|  | <b>Co2:</b> Design and create tables in database and execute queries.                             |
|  | <b>Co3:</b> Have knowledge about file system.   |
|  | <b>Co4:</b> Design a database based on a data models using normalization.                         |
|  | <b>Co5:</b> Have knowledge in network and hierarchical database system.                           |
| <b>CC - VIII<br/>RDBMS LAB</b>           | <b>Co1:</b> Design and implement database schema for the given problem                            |
|  | <b>Co2:</b> Populate and query using ddl,dml,dcl,tcl  |
|  | <b>Co3:</b> Prepare sql reports.  |
|  | <b>Co4:</b> Create implicit and explicit cursor.  |
|  | <b>Co5:</b> Capable to create triggers, procedures and function.                                  |
| <b>AC-VI<br/>APPLIED<br/>PHYSICS –II</b> | <b>Co 1:</b> Understand the basic working of 8051, which is the basic of all microcontroller      |
|  | <b>Co 2:</b> Know the working nature of microcontroller architecture, and programming techniques. |
|  | <b>Co 3:</b> Know the fundamentals of port programming and interfacing techniques                 |
|  | <b>Co 4:</b> Learn the techniques of serial port programming in 8051 and on interrupts.           |
|  | <b>Co 5:</b> To apply 8051 interrupts for the programming.  |

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| <b>NMEC - I<br/>INTERNET AND<br/>WEB DESIGN</b> | <b>Co1:</b> Design and develop a static web page using html  |
|   | <b>Co2:</b> Create an user interface using html forms  |
| <b>NMEC-I BPO<br/>AND HEALTH<br/>CARE</b>       | <b>Co1:</b> Evaluate research and using measurement tools for quality and safety.  |
|   | <b>Co2:</b> Access the skills in managing across boundaries - and evaluate how high quality services can best be designed, configured and delivered.                         |
|   | <b>Co3:</b> Effectively manage people, finances and organizational resources   |
|   | <b>Co4:</b> Describe the opportunities and challenges in Indian context  |
|   | <b>Co5:</b> Carry out an organizational development project, demonstrate skills in learning from reflection of this experience and the skills to disseminate their projects. |
| <b>CC - IX<br/>PROGRAMMIN<br/>G IN JAVA</b>     | <b>Co1:</b> Identify the distinct properties and features of object orientations using java  |
|   | <b>Co2:</b> Analyze the name space, exception conditions and concurrency condition in java using package and exception handling and thread.                                  |
|   | <b>Co3:</b> Discuss input/output functions with file manipulations using i/o streams.  |
|   | <b>Co4:</b> Analyze gui programming applications using and packages.   |
|   | <b>Co5:</b> Plan to develop java based applications using gui and user interface and database connectivity.  |

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| <b>CC - X<br/>PRINCIPLES OF<br/>OPERATING<br/>SYSTEM</b>        | <b>Co1:</b> Understand the types, design, implementation of operating system and i/o programming concepts |
|   | <b>Co2:</b> Recognize the management of main and virtual memory schemes.                                  |
|   | <b>Co3:</b> Work out different scheduling algorithms.   |
|   | <b>Co4:</b> Analyze the management of devices.  |
|   | <b>Co5:</b> Understand and analyze the information management.  |
| <b>CC- XI<br/>COMPUTER<br/>SYSTEM<br/>ARCHITECTUR<br/>E</b>     | <b>Co1:</b> Understand the basics of computer arithmetic  |
|   | <b>Co2:</b> Know the importance and functions of cpu, alu   |
|   | <b>Co3:</b> Understand the memory and input-output organization   |
| <b>CC - XII JAVA<br/>AND SYSTEM<br/>ADMINISTRATI<br/>ON LAB</b> | <b>Co1:</b> Implement simple softwares using java   |
|   | <b>Co2:</b> Install linux operating system  |
|   | <b>Co3:</b> Apply basic commands and solve simple administrative tasks using linux                        |
| <b>EC-I WAP and<br/>WML</b>                                     | <b>Co1:</b> Understand the wap architecture   |
|   | <b>Co2:</b> Analyze the wap gateway   |
|   | <b>Co3:</b> Demonstrate the wml concepts  |
|   | <b>Co4:</b> Solve problems using wml script   |
|   | <b>Co5:</b> Apply the methodologies for securing applications   |
| <b>EC-II<br/>PRINCIPLES OF<br/>COMPUTER<br/>GRAPHICS</b>        | <b>Co1:</b> Design two dimensional graphics.  |
|   | <b>Co2:</b> Apply two dimensional transformations.  |
|   | <b>Co3:</b> Design three dimensional graphics.  |
|   | <b>Co4:</b> Apply three dimensional transformations.  |
|   | <b>Co5:</b> Apply clipping techniques to graphics.  |
|   | <b>Co6:</b> Design animation sequences.   |



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| <b>EC-III SERVICE ORIENTED ARCHITECTURE</b> | <b>Co1:</b> Understand the software architecture, so evolution enterprise wide soa and its applications. |
|   | <b>Co2:</b> Analyze the design and technologies of soa   |
|   | <b>Co3:</b> Identify the related technologies and implementation basics of soa.                          |
|   | <b>Co4:</b> Understanding of the meta data management and web services security.                         |
|   | <b>Co5:</b> Recognize the transaction processing and specifications                                      |
| <b>NMEC II - OFFICE AUTOMATION LAB</b>      | <b>Co1:</b> Create documents, apply formatting, editing text and paragraphs                              |
|   | <b>Co2:</b> Create document with tables  |
|   | <b>Co3:</b> Create a document with mail merge  |
|   | <b>Co4:</b> Use spreadsheet for calculations and apply formatting  |
|   | <b>Co5:</b> Apply macro concept  |
|   | <b>Co6:</b> Prepare a presentation for a seminar   |
| <b>NMEC-II IMAGE EDITING TOOLS LAB</b>      | <b>Co1:</b> Apply various animation techniques   |
|   | <b>Co2:</b> Apply various concepts of image editing using gimp tool                                      |

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| <b>CC - XIII<br/>COMPUTER<br/>NETWORKS</b>   | <b>Co1:</b> Comprehend the basic types of networks, its classifications and properties of osi and tcp/ip reference models |
|  | <b>Co2:</b> Recognize the guided and unguided media for communication   |
|  | <b>Co3:</b> Acquire the design of the data link layer with data link layer protocols.                                     |
|  | <b>Co4:</b> Create the shortest paths between two nodes using various routing algorithms.                                 |
|  | <b>Co5:</b> Recognize the transport layer with tcp/ip and udp protocols.  |
|  | <b>Co6:</b> Ability to know the application layer using protocols like snmp, www, ftp, mime and security                  |
| <b>CC - XIV<br/>SOFTWARE<br/>ENGINEERING</b> | <b>Co1:</b> Demonstrate the ability to develop a high quality software system while working in a project group            |
|  | <b>Co2:</b> Design architectural design for different environment   |
|  | <b>Co3:</b> Produce software solution efficient, reliable, robust and cost effective                                      |
|  | <b>Co4:</b> Expose the realities involved in developing software products for clients                                     |
|  | <b>Co5:</b> Design, build and maintain large software systems   |

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| <b>EC-IV WEB TECHNOLOGY</b>                 | <b>Co1:</b> Design a static web page using html  |
|   | <b>Co2:</b> Validate the html form data using javascript   |
|   | <b>Co3:</b> Develop server side scripts using php  |
|   | <b>Co4:</b> Communicate with mysql database from php   |
| <b>EC-V RUBY ON RAIL</b>                    | <b>Co1:</b> Understand the structure of ruby programs and various data types, expression and operators |
|   | <b>Co2:</b> Use the control structures to solve simple and complex problems                            |
|   | <b>Co3:</b> Demonstrates oop concepts  |
|   | <b>Co4:</b> Develop networking applications  |
|   | <b>Co5:</b> Solve the concurrency issues and understand the concept of security                        |
| <b>EC-VI MOBILE APPLICATION DEVELOPMENT</b> | <b>Co1:</b> Understand the architecture of android software stock.                                     |
|   | <b>Co2:</b> Get the exposure of different types of project resources                                   |
|   | <b>Co3:</b> Create their own application.  |
|   | <b>Co4:</b> Enhance the application with lbs, network features, etc.                                   |
|   | <b>Co5:</b> Generate the apk and market it in  |

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| <b>CC - XV -<br/>APPLICATION<br/>DEVELOPMENT<br/>LAB</b>             | <b>Co1:</b> Develop applications using two software packages                          |
|  | <b>Co2:</b> Solve simple and complex problems by the software's chosen                |
| <b>EC- VII .NET<br/>PROGRAMMIN<br/>G</b>                             | <b>Co1:</b> Understand the .net framework   |
|  | <b>Co2:</b> Understand the basics of vb.net programming                               |
|  | <b>Co3:</b> Design and develop distributed problems                                   |
|  | <b>Co4:</b> Develop web applications using asp.net                                    |
|  | <b>Co5:</b> Interact with databases using ado.net                                     |
| <b>EC-VIII<br/>FUNCTIONAL<br/>PROGRAMMIN<br/>G USING<br/>HASKELL</b> | <b>Co1:</b> Use a strongly functional programming language                            |
|  | <b>Co2:</b> Analyze the basic functional programming and use json data                |
|  | <b>Co3:</b> Identify various built in functions                                       |
|  | <b>Co4:</b> Formulate various concept in pattern matching                             |
|  | <b>Co5:</b> Identify and analyze data structures                                      |
| <b>EC- IX R<br/>PROGRAMMING</b>                                      | <b>Co1:</b> Understand the basics of r programming                                    |
|  | <b>Co2:</b> Work with vectors, matrices and data frames                               |
|  | <b>Co3:</b> Acquire the knowledge of various control structures                       |
|  | <b>Co4:</b> Parse data files using built-in functions                                 |
|  | <b>Co5:</b> Apply the various statistical functions and produce high quality graphics |