P. R. Thakur Govt. College

Department of Computer Science

Course Outcomes

for B.Sc. Honours and Generic in Computer Science offered by the Department Under
CHOICE BASED CREDIT SYSTEM

Session 2022-2023

SEMESTER – I	
Course name	Programming Fundamentals using C/C++ Programming Fundamentals using C/C++ Lab
Course code	CMSACOR01T , CMSACOR01P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain the basics of C and C++ programming
CO-2	Develop , classify and distinguish between the procedure-oriented and object-oriented programming
CO-3	Simplify and solve a problem with two different computer language
CO-4	Relate different operations with two different languages and select different features for various solution purpose to solve problems and also able to recognize the solution of any problem.
CO-5	Enhance the logical development of students to solve problems for carrier development in the software development domain

SEMESTER – I	
Course name	Computer System Architecture Computer System Architecture Lab
Course code	CMSACOR02T, CMSACOR02P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Describe the basics of boolean algebra, logic gates.
CO-2	Design and discuss on the different building blocks and logics of different combinational and sequential logic circuits.
CO-3	Analyze and illustrate different logic circuits using the existing logic and logic circuits.
CO-4	Relate and analyze the different data representations and computer arithmetic performed and its application
CO-5	Describe the different building blocks of computer system for computation and define the organization of Control unit, Memory unit, I/O unit and building blocks of CPU

SEMESTER – II	
Course name	Programming in Java Programming in Java Lab
Course code	CMSACOR03T, CMSACOR03P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain the structure of JAVA programming
CO-2	Describe the concept of object oriented programming language and compare with other languages
CO-3	Use different packages and classes
CO-4	Develop threading concept and apply exception handling and also analyze and execute GUI based applications using AWT
CO-5	Develop networking concept in JAVA and JDBC for database connectivity
CO-6	Understand and recognize the total responsibilities of different users and administrators

SEMESTER – II	
Course name	Discrete Structures
Course code	CMSACOR04T

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Develop and discuss on the logical thinking
CO-2	Classify the different mathematical structure
CO-3	Select and apply various logics to solve problems
CO-4	Design graph techniques for solve problems.
CO-5	Identify the logical idea behind any algorithm and develop algorithms and measure its performance

SEMESTER – III	
Course name	Data Structures Data Structures Lab
Course code	CMSACOR05T, CMSACOR05P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Describe the different data structures to store and process on data
CO-2	Describe and develop the concept of store data into the different data structures
CO-3	Classify of data structure and use different techniques to process on data
CO-4	Classify the different types of sorting and searching techniques with their performance
CO-5	Choose and recognize data structures to process on specific problems

SEMESTER – III	
Course name	Operating Systems Operating Systems Lab
Course code	CMSACOR06T, CMSACOR06P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Describe the performance of operating system in a computer
CO-2	Relate the different resources in computer system during execution of process.
CO-3	Use different algorithms to solve different problems occurs during execution
CO-4	Illustrate the performance of execution of process and also explain the reason
CO-5	Identify and use the existing algorithms to create new algorithm to solve different related problems.

SEMESTER – III	
Course name	Computer Networks Computer Networks Lab
Course code	CMSACOR07T, CMSACOR07P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Discuss the basic network structure
CO-2	Analyze the layered architecture of different models such as OSI, TCP/IP and also compare the different

	tasks performed by the different layers of the model
CO-3	Select and use the different network routing for connectivity
CO-4	List the basic network devices and their applications and also develop new ideas using this.

SEMESTER – IV	
Course name	Design and Analysis of Algorithms Design and Analysis of Algorithms Lab
Course code	CMSACOR08T, CMSACOR08P

After completion of this course the student will be able to

CO No.	**Course Outcomes:**
CO-1	Explain the different paradigms of algorithm
CO-2	Classify the algorithm depending upon the process of solving.
CO-3	Analyze and examine the performance of different algorithms and also compare the performance of different algorithms to solve a particular task
CO-4	Solve different problems with different algorithms
CO-5	Design new algorithms for solving problem and identify their performance

SEMESTER – IV	
Course name	Software Engineering Software Engineering Lab
Course code	CMSACOR09T, CMSACOR09P

After completion of this course the student will be able to

CO No.	**Course Outcomes:**
CO-1	Understand and identify the steps involved in designing a software
CO-2	Design a new software with good design and quality using the steps described
CO-3	Examine the performance of the software and also find out the quality of the software
CO-4	Classify the requirements of a software and use different techniques to design it
CO-5	Select the proper requirements of a software and analyze to design it

SEMESTER – IV	
Course name	Database Management Systems Database Management Systems Lab
Course code	CMSACOR10T, CMSACOR10P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain the advantages of database over file system
CO-2	Design the different ER models according to the requirements and also design database from it
CO-3	Analyze the queries with relational algebra and formulate it with that form and examine
CO-4	Determine and use SQL queries to solve different problems
CO-5	Identify the appropriate solution for solve the problem and use normalization to classify the requirements design

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain the ability to identify the object oriented programming
CO-2	Design and develop the problems using JSP, Java Beans and associate to each part
CO-3	Solve various problems with Java Scripts and select proper connectivity using JDBC
CO-4	Identify the different features of JSP and apply it to solve various problems
CO-5	Develop application with event driven and GUI environment

SEMESTER – V	
Course name	Theory of Computation
Course code	CMSACOR12T

Course Outcomes:
After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain and recognize the basic logic and operations behind every computations.
CO-2	Design different models using turing machine
CO-3	Evaluate the concept of PDA, language acceptability and select the grammar formation of a language
CO-4	Analyze the structure of language, automata, computability and complexity with problems
CO-5	Identify and use the concept of generate proper formulation of mathematical and logical problems

SEMESTER – VI	
Course name	**Artificial Intelligence** **:Artificial Intelligence Lab**
Course code	**CMSACOR13T, CMSACOR13P**

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Describe and identify the basic idea behind the machine's decision
CO-2	Understand and solve different problems using different algorithms
CO-3	Associate different problems as a part of a specific technique and examine how to fit it in a certain method
CO-4	Select the specific task and implement it with logic programming (PROLOG) to design and examine the task
CO-5	Construct new ideas with the existing and develop the logical idea into implementation reality

SEMESTER – VI	
Course name	Computer Graphics Computer Graphics Lab
Course code	CMSACOR14T, CMSACOR14P

Course Outcomes:
After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Discuss the basic knowledge behind computer graphics
CO-2	Classify and examine various graphical tools
CO-3	Use the methods to develop new design
CO-4	Select different methods to find out the quality design
CO-5	Identify different graphical designs to create interactive graphical structure.

DISCIPLINE SPECIFIC ELECTIVES (DSE)

SEMESTER – V	
Course name	Microprocessor Microprocessor Lab
Course code	CSMADSE01T, CSMADSE01P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Discuss of architecture and basic hardware behind computation

CO-2	Classify different instructions in assembly language programming to solve problems.
CO-3	Design different problems relate to memory, interfacing using the selected instructions
CO-4	Implement assembly language program to solve various problems.
CO-5	Identify and examine the different interfacing with microprocessor

SEMESTER – V	
Course name	Data Mining Data Mining Lab
Course code	CSMADSE02T, CSMADSE02P

CO No.	**Course Outcomes:**
CO-1	Describe the different techniques for learning
CO-2	Select the proper method to find the knowledge discovery in database
CO-3	Classify different data mining techniques to identify the proper one
CO-4	Illustrate different algorithms for data mining
CO-5	Design the different classifications and regression techniques for identify the efficiency

SEMESTER – V	
Course name	Cloud Computing Cloud Computing Lab
Course code	CSMADSE03T, CSMADSE03P

CO No.	**Course Outcomes:**
CO-1	Explain the fundamental of cloud computing and how it works
CO-2	Illustrate cloud based applications using different cloud services, tools, platforms
CO-3	Associate and compare different cloud solutions and select the best approach to meet a specific requirement
CO-4	Select the proper cloud architecture and security measure to identify potential risks
CO-5	Design and develop cloud based solutions

SEMESTER – VI	
Course name	Big Data Big Data Lab
Course code	CSMADSE04T, CSMADSE04P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain how big data work using HDFS, NoSQL
CO-2	Use to solve different problems with different tools like Hadoop, YARN, Hive.
CO-3	Classify and organize the data according to need and also examine the accuracy and reliability
CO-4	Identify and determine the big data solutions for suitability for different use cases
CO-5	Design and develop solutions with various tools

SEMESTER – VI	
Course name	Digital Image Processing Digital Image Processing Lab
Course code	CMSADSE05T, CMSADSE05P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Describe the basic principals of digital image processing such as image enhancement, segmentation, compression etc
CO-2	Use digital image processing technique to process and analyze digital images
CO-3	Identify and relate the impact of digital image processing on various applications
CO-4	Analyze the performance of different digital image processing techniques with their strength and weaknesses
CO-5	Design and develop different techniques such as object recognition

SEMESTER – VI	
Course name	Dissertation / Project work
Course code	CMSADSE06P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Discuss and classify basics structure of different problems
CO-2	Use different software or hardware to develop the problem
CO-3	Determined the impact of solutions of the problem
CO-4	Analyze the performance of different solutions of the problem
CO-5	Design and develop in house application and identify different methods to solve the problem

SKILL ENHANCEMENT COURSE (SEC)

SEMESTER – III	
Course name	Programming in Python
Course code	CMSSSEC01M

Course Outcomes:

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain and fundamental of programming logic with python such as control flow, functions etc.
CO-2	Use the syntax to solve the problems in python
CO-3	Analyze the correctness and errors generated
CO-4	Evaluate the performance of different algorithms and select most appropriate
CO-5	Design Python programs for various problems and also identify different solutions

SKILL ENHANCEMENT COURSE (SEC)

SEMESTER – IV	
Course name	R-Programming
Course code	CMSSSEC02M

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain fundamental concepts such as statistical analysis in R programming
CO-2	Use to solve R programming Techniques such as data cleaning, data visualization etc.
CO-3	Analyze and examine statistical results
CO-4	Evaluate the accuracy and identify the reliability of statistical models
CO-5	Develop advance concepts such as machine learning models, time series analysis etc

Credit Distribution across the Computer Science General Course

SEMESTER – I	
Course name	Problem Solving with Computer Problem Solving with Computer
Course code	CMSHGEC01T, CMSHGEC01P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Understand the fundamentals of computer and techniques for problem solving and describe the fundamental of programming logic with python such as control flow, functions etc.
CO-2	Use the syntax to solve the problems in python
CO-3	Analyze the correctness and errors generated
CO-4	Evaluate the performance of different algorithms and select most appropriate
CO-5	Design Python programs for various problems and identify alternate solutions

SEMESTER – II	
Course name	Database Management Systems Database Management Systems
Course code	CMSHGEC02T, CMSHGEC02P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Explain the advantages of database over file system
CO-2	Design the different ER models according to the requirements and also design database from it
CO-3	Analyze the queries with relational algebra and formulate it with that form and examine
CO-4	Determine and use SQL queries to solve different problems
CO-5	Identify the appropriate solution for solve the problem and use normalization to classify the requirements design

SEMESTER – III	
Course name	Operating Systems Software Lab based on Operating Systems
Course code	CMSHGEC03T, CMSHGEC03P

Course Outcomes:
After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Describe the performance of operating system in a computer
CO-2	Relate the different resources in computer system during execution of process.
CO-3	Use different algorithms to solve different problems occurs during execution
CO-4	Illustrate the performance of execution of process and also explain the reason
CO-5	Identify and use the existing algorithms to create new algorithm to solve different related problems.

SEMESTER – IV	
Course name	Computer System Architecture Computer System Architecture Lab
Course code	CMSHGEC04T, CMSHGEC04P

After completion of this course the student will be able to

CO No.	Course Outcomes:
CO-1	Describe the basics of boolean algebra, logic gates.
CO-2	Design and discuss on the different building blocks and logics of different combinational and sequential logic circuits.
CO-3	Analyze and illustrate different logic circuits using the existing logic and logic circuits.
CO-4	Relate and analyze the different data representations and computer arithmetic performed and its application
CO-5	Describe the different building blocks of computer system for computation and define the organization of Control unit, Memory unit, I/O unit and building blocks of CPU