

Program Specific Outcome (PSO)

Program Name: B.Sc. Computer Science

PSO1. ACQUIRING KNOWLEDGE:

Gather the knowledge of problem environment and also acquiring the subject specific knowledge to put further steps in towards the solution problems.

PSO2. PROBLEM ANALYSIS:

Identify, formulate, review research literature, and analyze problems to move the sustainable solution(s).

PSO3. DESIGN/DEVELOPMENT OF SOLUTIONS:

Design solutions for problems and design system components or processes that meet the specified needs with appropriate constraints and environmental considerations.

PSO4. CONDUCT INVESTIGATIONS FOR FURTHER BETTERMENT OF SOLUTION:

Use research-based knowledge and research methods and synthesis of the information to provide better conclusions.

PSO5. MODERN TOOL USAGE:

Create, select and apply appropriate techniques and modern IT tools with an understanding of the limitations.

PSO6. THE COMPUTER SC. GRADUATES AND SOCIETY:

Apply reasoning and subject-specific knowledge to assess societal and cultural issues and perform responsibilities relevant to the professional practice.

PSO7. ENVIRONMENT AND SUSTAINABILITY:

Understand the impact of the designed solutions in societal and environmental contexts.

PSO8. ETHICS:

Apply ethical principles and commit to professional ethics and responsibilities.

PSO9. INDIVIDUAL AND TEAM WORK:

Function effectively as an individual and as a member or leader in diverse teams and in multidisciplinary settings.

PSO10. LIFE-LONG LEARNING:

Recognize the need and engage in independent and life-long learning in the broadest context of technological change.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSACOR01T, CMSACOR01P

Course Title: Programming Fundamental using C/C++

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Recollect various programming constructs and to develop CPP programs.
CO-2:	Explain the fundamentals of CPP programming.
CO-3:	Choose the right data representation formats based on the requirements of the problem.
CO-4:	Develop programs using the basic elements like control statements, Arrays and Strings.
CO-5:	Deep knowledge about class and object and OOP fearutes.

Course Code: CMSACOR02T, CMSACOR02P

Course Title: Computer System Architecture

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Data Representation and Basic Computer Arithmetic.
CO-2:	Logic gates, Boolean algebra, combinational and sequential circuits, flip-flops, decoders, multiplexers, registers, counters.
CO-3:	Basic Computer Organization and Design
CO-4:	Central Processing Unit
CO-5:	Memory Organization & Input-Output Organization

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSACOR03T, CMSACOR03P

Course Title: Programming in Java

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Remember the fundamentals of programming such as variables, conditional statements and iterative execution statements
CO-2:	Deep understanding about class and objects.
CO-3:	Understand the concepts of arrays, strings, packages and multithreading.
CO-4:	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.
CO-5:	Design event driven GUI and web related applications which mimic the real world scenarios.

Course Code: CMSACOR04T

Course Title: Discrete Structure

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Describe sets, relations, functions and discrete structures
CO-2:	Apply Recurrence relations and generating functions to solve problems.
CO-3:	Use logical notations to define fundamental mathematical concepts such as sets relations and functions.
CO-4:	Formulate and solve real world problems using graphs and trees.
CO-5:	Understanding & application Propositional Logic.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSACOR05T, CMSACOR05P

Course Title: Data Structure

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Define array and linked list.
CO-2:	Describe representation and functions of array and Linked List.
CO-3:	Use stacks and queues.
CO-4:	Analyze an algorithm for searching and sorting techniques in terms of time complexity.
CO-5:	Describe the mathematical model for trees and graphs.

Course Code: CMSACOR06T, CMSACOR06P

Course Title: Operating Systems

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Review the basic concepts of operating systems.
CO-2:	Illustrate the examples on processor scheduling and deadlock prevention.
CO-3:	Justify the demand paging concepts for the comparison of page replacement algorithms.
CO-4:	Understanding the standard memory management system of an Operating System.
CO-5:	Review the file system and its protection mechanism.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSACOR07T, CMSACOR07P

Course Title: Computer Networks

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Recognize the technological trends of Computer Networking.
CO-2:	Discuss the key technological components of the Network.
CO-3:	Apply different kinds of network models like OSI,TCP/IP model.
CO-4:	Calculate different computer network related parameters like transmission delay. propagation delay, baud rate etc.
CO-5:	Evaluate the challenges in building networks and solutions to those.

Course Code: CMSACOR08T, CMSACOR08P

Course Title: Design and Analysis of Algorithms

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Explain the time and space complexity of algorithms using asymptotic notations.
CO-2:	Discuss different searching algorithms.
CO-3:	Use an appropriate data structure for a design of algorithms.
CO-4:	Test the correctness of algorithms using inductive proofs and invariants.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSACOR09T, CMSACOR09P

Course Title: Software Engineering

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Understand the concept of software and its development process.
CO-2:	Apply the studied algorithms for the development of software.
CO-3:	Sketch the data flow for the mini-project.
CO-4:	Develop the software modules as per the software specifications.

Course Code: CMSACOR010T, CMSACOR010P

Course Title: Database Management Systems

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Identify the difference between database systems from file systems and describe each in both function and benefit.
CO-2:	Model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
CO-3:	Describe the concept of normalization theory for normalizing database.
CO-4:	Explain the relational data model.
CO-5:	Apply practical experience by designing and constructing data models using SQL.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSACOR011T, CMSACOR011P

Course Title: Internet Technologies

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Remember the concept of OOPs and databases.
CO-2:	Discuss the fundamentals of Java Script, JDBC, JSP etc.
CO-3:	Illustrate how to establish connectivity and work with connection interfaces.
CO-4:	Examine JSP application design with MVC.
CO-5:	Conclude with setting up the JSP environment, error handling, developing a simple Bean.

Course Code: CMSACOR012T

Course Title: Theory of Computation

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Explain the concept of Automata theory: NFA, DFA, Moore, Mealy Machine.
CO-2:	Apply regular expressions on real time problem.
CO-3:	Use Context-Free Grammars for the real time requirements.
CO-4:	Discuss on Normal forms.
CO-5:	Understanding the working principle and application of PDA and Turing machine.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSACOR013T, CMSACOR013P

Course Title: Artificial Intelligence

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Identify the framework in which artificial intelligence may function, including interactions with people, enterprise functions, and environments.
CO-2:	Explain important search concepts, such as the difference between informed and uninformed search, the definitions of admissible and consistent heuristics and completeness and optimality.
CO-3:	Apply basic principles of AI in solutions that require problem solving, inference, perception, knowledge representation, and learning.
CO-4:	Analyze an algorithm for informed searching and uninformed searching in terms of time complexity.
CO-5:	Evaluate the advantages, disadvantages, challenges, and ramifications of human–AI augmentation.

Course Code: CMSACOR014T, CMSACOR014P

Course Title: Computer Graphics

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Describe the basic display devices and input devices.
CO-2:	Explain drawing algorithms for line, circle, ellipse etc. 2D transformations, line and polygon clipping, color fill methods, and 2D projections.
CO-3:	Explain 3D graphical objects using geometrical algorithms and perform operations on them.
CO-4:	Understanding of Curves & Hidden surface removal.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSADSE01T, CMSADSE01P

Course Title: Microprocessor

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Define the history of microprocessors.
CO-2:	Describe the architectures of 8085 and 8086 microprocessors.
CO-3:	Write programs using 8085 Microprocessor.
CO-4:	Interfacing some peripherals.

Course Code: CMSADSE02T, CMSADSE02P

Course Title: Data Mining

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Demonstrate various data preprocessing procedures and their application scenarios.
CO-2:	Discuss the data-mining tasks like classification, regression, clustering, association mining.
CO-3:	Develop skill in selecting the appropriate data mining algorithm for solving practical problems.
CO-4:	Construct statistical predictive models using various techniques such as neural networks, decision trees and logistic regression.

Barasat College

Computer Science Department

Name of the Academic Program: B.Sc. honours in Computer Science

Course Code: CMSADSE03T, CMSADSE03P

Course Title: Cloud Computing

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Summarize the main concepts, key technologies, strengths, and limitations of cloud computing and the possible applications for state-of-the-art cloud computing.
CO-2:	Categorize the architecture and infrastructure of cloud computing, including SaaS, PaaS, IaaS, public cloud, private cloud, hybrid cloud, etc.
CO-3:	Identify the core issues of cloud computing such as security, privacy, and interoperability.
CO-4:	Select the appropriate cloud computing solutions and recommendations according to the applications used.

Course Code: CMSADSE04T, CMSADSE04P

Course Title: Big Data

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Discuss the challenges and their solutions in Big.
CO-2:	Analyze the Big Data framework like Hadoop and NOSQL to efficiently store and process Big Data to generate analytics.
CO-3:	Design Algorithms to solve Data Intensive Problems using Map Reduce Paradigm.
CO-4:	Implement Big Data Activities using Hive.

Department of Computer Science
Sarojini Naidu College for Women

Name of the Academic Program: B.Sc. honours with Computer Science

Course Code: CMSADSE05T, CMSADSE05P

Course Title: Digital Image Processing

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Review the fundamental concepts of a digital image processing system.
CO-2:	Analyze images in the frequency domain using various transforms.
CO-3:	Apply the techniques for image enhancement and image restoration.
CO-4:	Describe object detection and recognition techniques.

Course Code: CMSADSE06P

Course Title: Project

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Create websites for school, PSU, Industries etc.
CO-2:	Develop a model that solves real time social issues.
CO-3:	Sketch the data flow of project.
CO-4:	Generate the documentation of project work.

Barasat College

Computer Science Department

Name of the Academic Program : B.Sc. (General) with Computer Science

Course Code: CMSGCOR01T, CMSGCOR01P

Course Title: : Problem Solving with Computer

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Recollect various programming constructs and to develop python programs.
CO-2:	Explain the fundamentals of python programming.
CO-3:	Develop programs using the basic elements like control statements, Arrays and Strings. Creation of functions.
CO-4:	Regular expression handling, Event driven programming and GUI programming.

Course Code: CMSGCOR02T, CMSGCOR02P

Course Title: Database Management Systems

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Identify the difference between database systems from file systems and describe each in both function and benefit.
CO-2:	Model an application's data requirements using conceptual modeling tools like ER diagrams and design database schemas based on the conceptual model.
CO-3:	Describe the concept of normalization theory for normalizing database.
CO-4:	Explain the relational data model.
CO-5:	Apply practical experience by designing and constructing data models using SQL.

Barasat College

Computer Science Department

Name of the Academic Program : B.Sc. (General) with Computer Science

Course Code: CMSGCOR03T, CMSGCOR03P

Course Title: Operating Systems

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Review the basic concepts of operating systems.
CO-2:	Illustrate the examples on processor scheduling and deadlock prevention.
CO-3:	Justify the demand paging concepts for the comparison of page replacement algorithms.
CO-4:	Understanding the standard memory management system of an Operating System.
CO-5:	Review the file system and its protection mechanism.

Course Code: CMSGCOR04T, CMSGCOR04P

Course Title: Computer System Architecture

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Data Representation and Basic Computer Arithmetic.
CO-2:	Logic gates, Boolean algebra, combinational and sequential circuits, flip-flops, decoders, multiplexers, registers, counters.
CO-3:	Basic Computer Organization and Design
CO-4:	Central Processing Unit
CO-5:	Memory Organization & Input-Output Organization

Department of Computer Science
Sarojini Naidu College for Women

Name of the Academic Program: B.Sc. honours with Computer Science

Course Code: CMSGDSE01T

Course Title: Programming in Java

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Remember the fundamentals of programming such as variables, conditional statements and iterative execution statements
CO-2:	Deep understanding about class and objects.
CO-3:	Understand the concepts of arrays, strings, packages and multithreading.
CO-4:	Develop reusable programs using the concepts of inheritance, polymorphism, interfaces and packages.
CO-5:	Design event driven GUI and web related applications which mimic the real world scenarios.

Course Code: CMSGDSE02T

Course Title: Discrete Structure

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Describe sets, relations, functions and discrete structures
CO-2:	Apply Recurrence relations and generating functions to solve problems.
CO-3:	Use logical notations to define fundamental mathematical concepts such as sets relations and functions.
CO-4:	Formulate and solve real world problems using graphs and trees.
CO-5:	Understanding & application Propositional Logic.

Department of Computer Science
Sarojini Naidu College for Women

Name of the Academic Program: B.Sc. honours with Computer Science

Course Code : CMSGDSE03T

Course Title: Software Engineering

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Understand the concept of software and its development process.
CO-2:	Apply the studied algorithms for the development of software.
CO-3:	Sketch the data flow for the mini-project.
CO-4:	Develop the software modules as per the software specifications

Course Code: CMSGDSE04T

Course Title: Computer Networks

Course Outcome (COs)

After completion of this course successfully, the students will be able to

CO-1:	Recognize the technological trends of Computer Networking.
CO-2:	Discuss the key technological components of the Network.
CO-3:	Apply different kinds of network models like OSI,TCP/IP model.
CO-4:	Calculate different computer network related parameters like transmission delay, propagation delay, baud rate etc.
CO-5:	Evaluate the challenges in building networks and solutions to those.