

DEPARTMENT OF COMPUTERS

PROGRAMME	PROGRAMME OUTCOMES(PO)
B.Sc. (Physical sciences / life sciences)	PO1: Computational knowledge: Apply the knowledge of mathematics, science fundamentals and a technical specialization to the solution of complex mathematical problems. PO2: Problem analysis: Identify, formulate, reverse search literature, and analyze complex science problems reaching substantiated conclusions using first principles of mathematics, natural sciences, and computer science. PO3: Ethics: Apply ethical principles and commit to professional ethics and responsibilities and norms of the programming practice. PO4: Individual and team work: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings. PO5: Communication: Communicate effectively on software development activities with the computer science community and with society at large, such as, being able to comprehend and write effective reports and design documentation, make effective presentations, and give and receive clear instructions.

PROGRAMME	PROGRAMME SPECIFIC OUTCOMES(PSO)
B. Sc (Computer Science)	PSO1: Students will acquire basics of C , C++ and ,Java Programming languages to develops Applications . PSO2: To understand the algorithms to maintain memory in an Organized way. Stacks, queues, lists, trees, graphs algorithms used in applications. PSO3: Students will analyse system, Relational database model, ER model and distributed databases to write good queries using a structured query language called SQL. PSO4: Students will gain skills of usage of Web Technologies to design Web pages. PSO5: Computer Networks are the basis of communication in IT . they are used in a huge variety of ways and can include many different types of networks.

B. Sc (Computer Applications)	PSO1: Students will acquire basics of C, C++ & JAVA Programming languages to develop Applications. PSO2: Students will analyse system, Relational database model, ER model and distributed databases to write good queries using a structured query language called SQL PSO3: To acquire the knowledge of multimedia systems.. PSO4: Students will gain skills of usage of Web Technologies to design Web pages.
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PROGRAMME SPECIFIC OUTCOMES (PSO)

S. No.	Course Code	Course Title	Course Outcomes (CO)
1.	BS106	Paper-I Programming in C	CO1: To understand the fundamentals of computers and programming languages. CO2: Understanding concepts of algorithms, flow charts, pseudo code, data types and operators. CO3: Ability to work with arrays of complex objects. CO4: Understanding a concept of functional hierarchical code organization. CO5: Ability to work with pointers, structures and files. CO6: Ability to handle possible errors during program execution.
2.	BS206	Paper-II Programming in C++	CO1: Understand importance of object oriented programming and difference between structured oriented and object oriented programming features. CO2: Able to make use of objects and classes for developing programs CO3: Ability to implement constructors and array of objects. CO4: Design and implement C++ programs for complex problems, making good use of the inheritance and polymorphism. CO5: Ability to handle runtime errors by using exception handling techniques.
3.	BS306	Paper – III Data Structures using c++	CO1: To understand the algorithms to maintain memory in an organized way. CO2: Use the appropriate data structure in context of solution of given problem. CO3: Understanding concepts of stacks, queues and linked list to organize memory of applications. CO4: Select the appropriate searching or sorting algorithm based on the algorithm's behaviour. CO5: Ability to have knowledge of tree and graphs concepts.
4.	BS306	(LS) Paper – III Relational Database Mana gement System	CO1: Identify the basic concepts and various data model used in database design ER modelling concepts and architecture use and design queries using SQL CO2: Recognize and identify the use of normalization and functional dependency, indexing and hashing technique used in database design. CO3: Apply and relate the concept of transaction, concurrency control and recovery in database. CO4: To understand recovery system and be familiar with introduction to web database and distribute databases.

5.	BS406	Paper – IV – Database Management System	CO1: Understand how data is stored and indexed in a DBMS. CO2: Identify the basic concepts and various data model used in database design ER modelling concepts and architecture use and design queries using SQL CO3: Recognize and identify the use of normalization and functional dependency, indexing and hashing technique used in database design. CO4: Apply and relate the concept of transaction, concurrency control and recovery in database. CO5: To understand recovery system and be familiar with introduction to web database and distribute databases.
6.	BS406	Paper – IV Multimedia Systems	CO1: Multimedia Systems is one of the earliest published journals in multimedia. It is a peer-reviewed. CO2: It is a peer-reviewed, international journal that publishes original research on multimedia. CO3: And multimedia systems, including theories, methods, tools, technologies, applications, and so on. CO4: To Design and develop various Multimedia Systems applicable in real time.
7.	BS505	Paper – V Programming in JAVA	CO1: To understand fundamentals of object-oriented programming in Java and to create Java application programs using OOP practices. CO2: To identify Java language components and how they work together in applications. CO3: To learn how to extend Java classes with inheritance and dynamic binding. CO4: To learn how to use exception handling in Java applications. CO5: To understand how to design GUI components with the Java Swing API. CO6: To understand how to design applications with threads in Java. CO7: Read and make elementary modifications to java programs that solves real world problems
8.	BS605	Paper – VI Computer Networks	CO1: Computer Networks are the basis of communication in IT. CO2: They are used in a huge variety of ways and can include many different types of network. CO3: Study the basic taxonomy and terminology of the computer networking and enumerate the layers of OSI model and TCP/IP model. CO4: Gain core knowledge of Network layer routing protocols and IP addressing. CO5: Study data link layer concepts, design issues, and protocols.
9.	BS302	SEC-2: Python-I	CO1: To understand Python is a useful scripting language for develop. CO2: Ability to write loops and decision statements in Python. CO3: Ability to implement functions and modules. CO4: Ability to handle runtime errors by using exception handling techniques in Python.

10.	BS402	SEC-4: Python-II	CO1: To understand Python is a useful scripting language for developers. CO2: Ability to implement strings, slicing, testing, searching and manipulating. CO3: Design and implement Python programs for complex problems, making good use of the inheritance and polymorphism. CO4: To understand how to design GUI, widgets, labels and buttons in Python programming.
11.	BS502	SEC-3: Computer Organization	CO1: To understand the structure, function and characteristics of computer systems CO2: To understand the design of the various functional units and components of computers. CO3: To identify the elements of modern instructions sets and their impact on processor design. CO4: To explore the memory organization
12.	BS602	SEC-4: Information Security	CO1: Analyze and resolve security issues in networks and computer systems to secure an IT infrastructure. CO2: To Implement Design, develop, test and evaluate secure software. CO3: Develop policies and procedures to manage enterprise security risks. CO4: Evaluate and communicate the human role in security systems with an emphasis on ethics, social engineering vulnerabilities and training. CO5: Interpret and forensically investigate security incidents.
13.	BS506	DSE 1E: Operating Systems	CO1: Identify the different types of operating systems and their responsibilities. CO2: Understanding issues in different file systems and describes the access methods for files and solve problems of disk scheduling. CO3: Solve the memory management problems with techniques like paging and segmentation and also use page replacement algorithms. CO4: Explain the concurrency conditions and critical section problem and apply the solutions to process synchronization problems. CO5: Define deadlock and implement methods for its avoidance, detection and identify goals of protection.
14.	BS606	DSE 2F: Web Technologies	CO1: Understand the principles of creating an effective web page including an in depth consideration of information architecture. CO2: Develop web based application using suitable client side and server side web technologies CO3: Develop solution to complex problems using appropriate method, technologies, frameworks, web services and content management. CO4: Become familiar with graphic design principles that relate to web design and learn how to implement theories into practice CO5: Develop skills in analyzing the usability of a website. CO6: Learn techniques of responsive web design, including media queries CO7: Develop skills in digital imaging (adobe photo shop)