

Seth Kesarimal Porwal College of Arts & Science & Commerce, Kamptee

Department of Computer Science

B.Sc. Computer Science Programme Specific Outcomes

Computer Science Course Outcomes

B.Sc. Specific Outcomes

Student outcomes describe what students are expected to know and be able to do during the course of under graduation. The Computer Science Department's Bachelor of Science programme must enable students to attain, by the time of graduation:

- An ability to pertain knowledge of computing and mathematics appropriate to the discipline.
- An ability to identify, formulates, and develops solutions to computational challenges.
- An ability to design, implements, and evaluate a computational system to meet desired needs within realistic constraints.
- Recognition of the need for and ability to engage in continuing professional development.
- An ability to use appropriate techniques, skills, and tools necessary for computing practice.
- An ability to function effectively on teams to accomplish shared computing design, evaluation, or implementation goals.
- An understanding of professional, ethical, legal, security, and social issues and responsibilities for the computing profession.

- An ability to communicate and engage effectively with diverse stakeholders.
- An ability to analyze impacts of computing on individuals, organizations, and society.
- An ability to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
- An ability to apply design and development principles in the construction of software systems of varying complexity.

B.Sc. Computer Science Subject Specific Outcomes

After the successful completion of this course the student will:

- Be able to demonstrate knowledge in fundamentals of programming, algorithms and programming technologies and fundamentals of Computer Science.
- Be able to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.
- Be able to design, implement, and evaluate computer-based system, process, component, or program to meet desired needs.
- Be able to use current techniques, skills, and tools necessary for computing practices.
- Be able to use and apply current technical concepts and practices in the core development of solutions in the form of Information technology
- Be able to analyze the local and global impact of computing on individuals, organizations, and society.

- Be able to Recognition of the need for and an ability to engage in continuing professional development.
- Be able to incorporate effectively integrate IT-based solutions to applications.
- Be able to apply design and development principles in the construction of software systems of varying complexity.
- Be able to have solid knowledge in computer science, including programming and languages, algorithms, theory, databases, networks.

Computer Science Subject Papers Specific Outcomes

B.Sc. Part I Semester I

Paper I

PROGRAMMING IN 'C'

At the end of this course, student should be able to

1. Understand Programming Structure, Developing Algorithm and Drawing flowcharts to solve the problem.
2. Familiarise with C Character set, Tokens, Identifier, Keyword and variables.
3. Understand different types of operator, data types and control structure.
4. Understand Maths and string handling function.
5. Understand concept of array, Strings Manipulation and Evaluation order.
6. Understand Function Components, Return Data type, Parameter Passing, Return byReference, Default Arguments and Recursive Functions.
7. Recognize Structure, Union, Pointer and File handling

Subject Specific Outcomes

B.Sc. Part I Semester I Paper II

FUNDAMENTALS OF INFORMATION TECHNOLOGY

At the end of this course, student should be able to

1. Understand basic concepts and terminology of information technology.
2. Familiarise with different units of computer block diagram, working of each unit.
3. Understand binary, octal, decimal and hexadecimal number system, their conversion and arithmetic's.
4. Analyze generation of programming languages and their translators.
5. Understanding different types of memories and storage devices
6. Understanding the concept of input and output devices of Computers and how it works.
7. Recognize basic Network terminology, network topology, types of network and network devices.

Subject Specific Outcomes

B.Sc. Part I Semester II

Paper I

OBJECT ORIENTED PROGRAMMING USING 'C++'

At the end of this course, student should be able to

1. Understand the basics Elements of Object Oriented programming and, OOPs features.
2. Design and Implement programs using classes and objects.
3. Understanding concept of constructor, types of constructor and Destructors
4. Recognize Operator overloading.
5. Specify the types of inheritance and use them in programs.
6. Analyze polymorphic behaviour of objects, details of virtual function and virtual base class.
7. Recognize Exception Handling Model, List of Exceptions

Subject Specific Outcomes

B.Sc. Part I Semester II

Paper II

SYSTEM ANALYSIS AND DESIGN

At the end of this course, student should be able to

1. Understand concept of System, Subsystems, Components of Computerized Information System and Systems development life cycle.
2. Collect data by using Interviews, Brain Storming, Questionnaires, Document Search and Observation technique.
3. Conduct Economic, Financial, Organizational and Technological Feasibility Study.
4. Understand structured tools, techniques of Data analysis and System Design.
5. Understand system testing, system conversion and System Evaluation.
6. Project Planning, Metrics for Project Size Estimation, Project Estimation and Scheduling.
7. Understand concept of Software Reliability, Quality Management and Software Reuse.

Subject Specific Outcomes

B.Sc. Part II Semester III

Paper I

DATA STRUCTURE

1. To learn the systematic way of solving problem and use of data structure
2. To understand the different methods of organizing large amount of data
3. To efficiently implement the different data structures
4. To efficiently implement solutions for specific problems
5. To access how the choices of data structure & algorithm methods impact the performance of program.
6. To solve problems based upon different data structure & also write programs using C++ programming.
7. Choose an appropriate data structure for a particular problem.

Subject Specific Outcomes

B.Sc. Part II Semester III Paper II

OPERATING SYSTEMS

At the end of this course, student should be able to

1. Understand Structure of Operating System, Operating System functions and characteristics of Modern OS.
2. Describe process management, concepts of thread and multithreading.
3. Compare the various CPU scheduling algorithms and comment about performance of various algorithms.
4. Analyze various deadlock condition, prevention, detection, recovery from Deadlock and their remedial measures in an operating system.
5. Understand the concepts and implementation Memory management policies and virtual memory.
6. Analyze file management policies for efficient utilization.
7. Understand protection mechanisms.

Subject Specific Outcomes

B.Sc. Part II Semester IV

Paper I

JAVA PROGRAMMING

1. To learn the basic concept of Java Programming.
2. To understand how to use programming in day to day applications
3. Understanding the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements;
4. Ability to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
5. Demonstrate the principles of object oriented programming;
6. Demonstrate the ability to use simple data structures like arrays in a Java program.
7. Understand the concept of package, interface, multithreading and File handling in java.
8. Ability to make use of members of classes found in the Java API (such as the Math class).
9. To learn the how to develop systems using JAVA.
10. To learn how to design applet viewer on webpage
11. To learn creation of webpage using html.

Subject Specific Outcomes

B.Sc. Part II Semester IV Paper II

LINUX OPERATING SYSTEM

At the end of this course, student should be able to

1. Work on Linux Operating system by understanding how to Logging In and Logging Out in Linux, Anatomy of Linux OS and its Directory Structure.
2. Analyze shell programme and basic commands of Linux Operating System.
3. Understand Hooking up Hardware Devices, backup process and printing file in Linux O.S
4. Maintaining User Accounts, Changing Password, Creating Group Accounts, Granting Access to files and Changing File Ownership.
5. Managing Disk Space by Creating Additional Free Disk Space, Locating Unused Files, Setting System Clock.
6. Familiarise with Communication Utilities and creating a message of the day.
7. Understand KDE and GNOME Desktop Environment.

Subject Specific Outcomes

B.Sc. Final Semester V Paper I

VISUAL BASIC PROGRAMMING

At the end of this course, student should be able to

1. Working with Visual Basic Window Components e. i. Menu Bar, Tool Bar, ProjectExplorer Window, Form Layout Window and properties Window.
2. Working with Forms Properties, Events, Methods and Basic Controls.
3. Define Variables, Data types, Constant, Conversion Function and Scope of Variable.
4. Recognize Vb operators and control structure statement.
5. Analyze different types of Arrays, Procedure and Functions.
6. Understand creation of Menus and handling Database.
7. Familiarise with ADO Data Control and Handling Errors.

Subject Specific Outcomes

B.Sc. Final Semester V Paper II

DATABASE MANAGEMENT SYSTEM

1. Able to master the basic concepts and understand the applications of database systems.
2. Able to construct an Entity-Relationship (E-R) model from specifications and to transform to relational model.
3. Able to construct unary/binary/set/aggregate queries in Relational Algebra.
4. Understand and apply database normalization principles.
5. Able to construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete)
6. Understand principles of database transaction management, database recovery, security.
7. To analyze Data Base design methodology. · Acquire knowledge in fundamentals of Data Base Management System.
8. Be able to analyze the difference between traditional file system and DBMS.
9. Able to handle with different Data Base languages.
10. Draw various data models for Data Base and Write queries mathematically
11. Students can design relational database by applying Normalization concepts.
12. Students can understand the principles of data modeling using entity relationship and develop a good database design and normalization techniques to normalize a database.
13. Understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization.
14. Acquire a good understanding of database systems concepts and to be in a position to use and design databases for different applications.

Subject Specific Outcomes

B.Sc. Final Semester VI

Paper I

COMPILER CONSTRUCTION


1. Gain an understanding of how compilers translate source code to machine executable.
2. To understand the phases of compilation in compiler.
3. To understand the state transition diagram and three address code generation techniques.
4. Comprehend how to perform parsing (top down and bottom up).
5. Understand how compilers generate code to manage memory during runtime.
6. Be familiar with techniques for simple code optimizations.
7. To understand design issues of a lexical analyzer and use of Lex tool.
8. To understand design issues of a parser and use of Yacc tool.

Subject Specific Outcomes


B.Sc. Final Semester VI
Paper II

SQL AND PL/SQL

1. Students understood basic concepts on SQL and PL/SQL Programming for databases design.
2. Student understood different issues involved in the create, design and implementation of a database.
3. Student knows use of data manipulation language to query, update, and manage a database.
4. Students understand essential DBMS concepts such as: database queries, integrity and concurrency tasks.
5. Student know how to design and build a simple database system and demonstrate competence with the fundamental tasks like create table and there updation.
6. Students understand relational Algebra concepts, and use it to translate queries to Relational Algebra.
7. After designing Database, students can write Cursors, Functions and Triggers in SQL.
8. Students understand the programming PL/SQL including stored procedures, stored functions, cursors, packages.

for.

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H.O.D.




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