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DEPARTMENT OF COMPUTER SCIENCE

B. Sc. Computer Science

Program Outcomes:

Knowledge outcomes:

After completing B.Sc. Computer Science Program students will be able to:

PO1: To develop problem solving abilities using a computer.;

PO2: To prepare necessary knowledge base for research and development in Computer Science.

Skill outcomes:

After completing B.Sc. Computer Science Program students will be able to:

PO3: To build the necessary skill set and analytical abilities for developing computer based solutions for real life problems.

PO4: communicate scientific information in a clear and concise manner both orally and in writing.

PO5: To train students in professional skills related to Software Industry.

Generic outcomes:

Students will

PO6: Have developed their critical reasoning, logic judgment and communication skills.

PO7: Augment the recent developments in the field of IT and relevant fields of Research and Development.

PO8: Enhance the scientific temper among the students so that to develop a research culture and Implementation the policies to tackle the burning issues at global and local level.

Program Specific Outcomes

PSO1: Students get knowledge and training of technical subjects so   that they will be technical professional by learning C programming, Relational Database   Management, Data Structure, Software Engineering, Graphics, Java, PHP, Networking, Theoretical Computer Science, System programming, Object Oriented Software Engineering.

PSO2: Students understand the concepts of software application and projects.

PSO3: Students understand the computer subjects with demonstration of all programming and theoretical concepts with the use of ICT.

PSO4: Development of in-house applications in terms of projects

PSO5: Students will build up programming, analytical and logical thinking abilities.

PS06: Aware them to publish their work in reputed journals

PS07: To make them employable according to current demand of IT Industry and responsible citizen.

Course Outcomes

F. Y. B.Sc. Computer Science-Semester I & Semester II (2013 PATTERN)

Computer Science Paper-I
Course CS-101: Problem Solving using Computer and 'C' Programming
After successfully completing this course, students will be able to:
  CO1: Students will understand algorithms and flowchart for solving problems using computers.
  CO2: Students will understand and can choose the loops and decision-making statements to solve the problem.
  C03: Student will implement different Operations on arrays and will use functions to solve the given problem.
  CO4: To enrich the students in logic development required for programming.
  CO5: To help the students to build carrier in various branches of software development.
  CO6: Students will understand difference between low level and high-level programming languages.

Computer Science Paper-II
Course CS-102: File Organization and Fundamentals of Database.
After successfully completing this course, students will be able to:
 CO1: Understand Basic RDB (Relational Database) Definitions - Understand a relational table schema (including keys and foreign key references).
 CO2: Read/write Unextended Relational Algebra Queries - Write and read (understand) queries in un-extended relational algebra.
 CO3: Read/write Simple SQL Queries - Write and read (understand) simple SQL queries (no embedded queries).
 CO5: Read/write Embedded SQL Queries - Write and read (understand) SQL queries using embedded subqueries without embedding operators
  CO6: Read/write SQL Queries with GROUP BY - Write and read (understand) SQL queries using the GROUP BY clause.
  CO7: Master the basics of SQL and construct queries using SQL
  CO8: Design/Read ER Diagrams - Design ER diagrams for new databases and read (understand) ER diagrams.
  CO9: Be familiar with basic database storage structures and access techniques- file and page organizations, indexing methods including B- tree, and hashing.
  CO10: Perform Normalization - Perform normalization based on functional dependency.

Course CS-103 Computer Science Practical Paper-I
After successfully completing this course, students will be able to:
  CO1: Identity the basic UNIX general purpose commands.
  CO2: Apply and change file and directories using UNIX commands.
  CO3: Apply pattern searching of word in the file.
  CO4: Illustrate flowcharts and algorithms to the given problems.
  CO5: Understand basic structure of c program and usage of variables operators, looping statements.

Course CS-104 Computer Science Practical Paper-II
After successfully completing this course, students will be able to:
  CO1: Design a responsive web site using HTML and CSS.
  CO2: Demonstrate rich internet applications.
  CO3: Demonstrate important HTML tags for designing static pages and separate design from content using CSS.
  CO4: Demonstrate array, string, function, and pointer.
  CO5: Master the basics of SQL and construct queries using SQL.
  CO6: Be familiar with a commercial relational database system by writing SQL using the system.

S. Y. B.Sc. Computer Science-Semester I

Computer Science Theory Paper I
Course CS-211: Data Structures using 'C'
After successfully completing this course, students will be able to:
CO1: Students will understand system related Programming such as Operating System functioning.
CO2: Students will capable to develop problem solving abilities using a computer.
CO3: To build the necessary skill set and analytical abilities for developing computer based solutions for real life problems.
CO4: To imbibe quality software development practices. To create awareness about process and product standards.
CO5: Students will train in professional skills related to Software Industry.
CO6: To prepare necessary knowledge which is related to operating system and base for research and development in Computer Science.

Computer Science Theory Paper II
Course CS-212: Relational Database Management System
After successfully completing this course, students will be able to:
CO1: Students will understand the concept of transaction and transaction processing.
CO2: To apply knowledge of Programming in pl/sql including stored function, cursor, trigger.
CO3: Students will get to know how to apply DML/DDL commands on database.
CO4: Acquaint the knowledge of recovery management.
CO5: Understanding the concept of client – server technology.

Computer Science Paper IV
Practical Course (CS-223 and CS-224): Annual
Course CS-224:Database Practicals & Mini Project using Software Engineering techniques
After successfully completing this course, students will be able to:
CO1: Students will get to know how to apply DML/DDL commands on database.
CO2: To apply knowledge of Programming in pl/sql including stored function, cursor, trigger.
CO3: Designing the normalized database.
CO4: Understanding the practical knowledge of exception handling.
CO5: Gathering data requirements and functional requirements

Course Outcomes

S. Y. B. Sc. Computer Science
T. Y. B.Sc. Computer Science Theory -Semester I
Course CS 331: System Programming
After successfully completing this course, students will be able to:
CO1: Students will understand the design and implementation of System programs.
CO2: Students will understand the role of System programs in program development.
CO3: Students will able to differentiate between System program and Application program.
CO4: Students will be able to analyze the working of Simulation of simple computer SMAC0
CO5: Students will understand the design structure of a simple editor, Assembler and macro processor for hypothetical simulated computer.
CO6: Students will understand the working of linkers and loaders and other development utilities.
CO7: Students will understand Complexity of Operating system as software.

Course CS 332: Theoretical Computer Science
After successfully completing this course, students will be able to:
CO1: Design a finite automaton to recognize a given regular language.

CO2: Transform a language into regular expression or finite automaton or transition graph and define deterministic and nondeterministic finite automata.

CO3: Prove properties of regular languages and classify them.

CO4: Define relationship between regular languages and context-free grammars. Prove properties of regular languages and classify them.

CO5: Building a context-free grammar for pushdown automata.

CO6: Determine whether a given language is context-free language or not and Prove properties of context-free languages.

C07: Design Turing machine and Post machine for a given language.

CO8: Students are exposed to a broad overview of the theoretical foundations of computer science

Course CS 333: Computer Networks I

After successfully completing this course, students will be able to:

CO1: Students will get acquainted with fundamentals of Networking like PAN, LAN, MAN, WAN, topologies and Home & Business applications of Networks.

CO2: Students will clear their basic concepts about the standards, their need & types of standards.

CO3: Students will know the design issues for the layers, layered architecture of the Network Models & functions performed at each layer.

CO4: Students will come to know the role played by different addresses at different layers of the network models.

CO5: Students will understand very basic networking hardware like transmission media types & tools description.

CO6: Students will be able to understand the need and importance of protocols at each layer in the communicating computers.

Course CS 334: Internet Programming I

After successfully completing this course, students will be able to:

CO1: Students will gain deep understanding of the use and implementation of HTML 5 and PHP language.

CO2: Students will be able to write well-structured, easily maintained, standards-compliant, responsive HTML code.

CO3: Students will get acquainted with Object Oriented Web applications.

CO4: Students will be able to create PHP programs that use various PHP library functions, files and directories manipulations.

CO5: Students will understand database connection & information retrieval from database.

CO6: Students will be able to apply a structured approach to identifying needs, interests, and functionality of a website.

Course CS 335: Programming in Java I

After successfully completing this course, students will be able to:

CO1: Students will learn about the basic concepts of Object-Oriented Programming language like Objects, Classes, Inheritance, Polymorphism etc.

CO2: They will implement those concepts in programming using Java language.

CO3: They will get an insight of how to handle unexpected problems and conditions in programming code and mechanisms of how to recover from them.

CO4: They will understand the concepts of designing Graphical User Interface and client side program execution on browser.

CO5: They will work on how to create files and transfer data to and from files through program coded in Java.

Course CS 336: Object Oriented Software Engineering

After successfully completing this course, students will be able to:

CO1: To inculcate the Analytical and thinking ability.

CO2: To develop structured sets of simple user-defined classes using Object-Oriented principles to achieve overall programming goals.

CO3: To understanding the significance of Object Orientation Technique in Software engineering.

CO4: To employ formal methods to produce effective software designs as solutions to specific tasks.

CO5: To locate, read and summarize relevant literature, from both traditional and electronic media, to extend understanding of the topic.

CO6: To understand the components of Unified Modeling Language (UML) by learning the all Symbolic notation.

CO7: To understand techniques and diagrams related to structural modeling as well as behavioral modeling.

CO8: To develop error identification and testing strategies for code development by understanding techniques of Object-Oriented analysis, object-oriented design and object oriented testing.

T. Y. B.Sc. Computer Science Practical -Semester I & II

Course CS 347: Lab Course I: System Programming & Operating System

After successfully completing this course, students will be able to:

CO1: Design and implement System programs with minimal features to understand their complexity.

CO2: Design and implement simulations of operating system level procedures.

Course CS 348: Lab Course II: Programming in Java

After successfully completing this course, students will be able to:

CO1: Implement core Java programs to solve simple problems.

CO2: Implement Client and Server end Java programs.

Course CS 349: Lab Course III: Programming in PHP & Project

After successfully completing this course, students will be able to:

CO1: Implement Simple PHP programs to solve simple problems

CO2: Study basics of Networking concepts & develop a project in java or PHP.

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