COURSE AND PROGRAM OUTCOMES

BCA (BACHELOR OF COMPUTER APPLICATIONS)

Course no :1.1

Fundamental Of Computers

Objective:

This course is designed with an objective so that the students will be able to

- Discuss about computers and their applications.
- Explain fundamental concepts of computer hardware and software and become familiar with a variety of computer applications, including word processing, spreadsheets, databases, and multimedia presentations.
- Explore about computer viruses and the operating system environment, both Windows and Linux.

Learning Outcome:

At the end of the course, students are expected to be able to:

- Identify computer hardware and peripheral devices
- Familiar with software applications
- Discuss about file management
- Accomplish creating basic documents, worksheets, presentations and databases
- Distinguish the advantages and disadvantages of different operating systems
- Explore about the computer viruses.

Course no: 1.2

Course Name:Mathematics-I

Objective:

This course is designed with an objective to

- *Illustrate the ideas and techniques from discrete mathematics which are widely used in* computer science.
- Introduce mathematical logic among students of Computer Science.
- Introduce set, function, relations, permutation and combinations which are used in database management, Programming Techniques, Turing Machine etc.
- Develop the use of matrix algebra techniques used in analyzing the relationship between the vertices of a graph and movement of robots and many other areas.

Learning outcomes

On completion of the course, the students will be able to:

- Define and explain various methods pertaining to Combinatorics, Matrix Algebra, Determinants and apply them through computer programs.
- Explain and apply the basic methods of discrete mathematics in Computer Science

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Course no : 1.3
Course Name: Digital Design

Objective:

This course is designed with an objective, so that the students will be able to

- Describe the fundamental principles of digital design.
- Represent and manipulate decimal numbers in different coding systems.
- Gaining experience with several levels of digital systems, from simple logic circuits *to programmable logic devices and hardware description language, analysis and* design is another likely outcome

Learning Outcome:

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

- Differentiate different number systems.
- Write Boolean algebra and the *operation* of logic components.
- *Construct logic circuit using logic gates.*
- Design both combinational and sequential logic circuits.

Course No:1.4
Course Name: Communicative English and Personality Development

Objective:

The course is designed with an objective to

- Acquire better communication skills.
- Have a better personality which can help in dealing with different situations.
- Have a positive attitude and constructive professional mind
- Listen for different needs and ideas

Learning Outcome:

On completion of the course, students will be able to:

- Exhibit professional attitude in their career perspectives.
- Show better communication skills
- Develop grooming techniques
- Builda constructive professional personality

Course no: 1.5
Course Name:Programming with C

Objective: The course is designed with an objective to

- Developing programming logic using C.

Learning Outcome: On completion of the course, students will be able to:

- Write programs using C as a language.
- Write the basic terminology used in computer programming

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Course no: 2.1
Course Name:Mathematics-II

Objective:

This course is designed with an objective to

- Describe problems of differential calculus and integral calculus.
- Introduce the idea of double and triple integral.
- Appreciate the purpose of using transforms to create a new domain in which it is easier to handle the problem that is being investigated.

Learning outcome

On completion of the course, students will be able to:

- Solve problems of differential calculus and integral calculus.
- Explain the idea of definite and multiple integrals.
- Find the Laplace and its inverse transforms of a function.

Course Code:2.2
Course Name:Data Structures

Objective: The course is designed with an objective to

- Demonstrate the major algorithms in data structures.
- Analyze performance of algorithms.
- Discuss which algorithm or data structure to use in different scenarios.
- Demonstrate the properties of various data structures such as stacks, queues, lists, trees.
- Demonstrate various sorting algorithms, including bubble sort, insertion sort, selection sort, heap sort, merge sort, quick sort.
- *Demonstrate understanding of various searching algorithms.*

Learning Outcome: On completion of the course, students will be able to:

- Distinguish between linear and non-linear data structure.
- Apply non-linear data structure in appropriate areas.
- Apply various sorting and searching algorithms in different problems.

Course No: 2.3
Course Name: Accounting And Financial Management

Objective:

This course is designed with an objective so that the students will be able to

- Discuss basics of accounts and accounting.
- Explain basics of finance and financial management.
- Apply financial tools for taking certain decisions.

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- Describe application of computer in accounting and finance

Learning Outcome:

- At the end of the course, students are expected to be able to discuss the concept of Accounting and Financial Management with practical Approach.

Course Code :2.4

Course Name: Computer Architecture & Organisation

Objective:

This course is designed with an objective to

- Describe the basic structure and operation of a digital computer.
- Describe the different ways of communicating with I/O devices and standard I/O interfaces

Learning outcome:

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

- Describe different components of computer.
- Identify high performance architecture design.
- Develop independent learning skills and be able to illustrate more about different computer architectures and hardware.
- Create an assembly language program to program a microprocessor system.

Course Code:2.5

Course Name: Object Oriented Programming Using Java

Objective:

The course is designed with an objective to:

- Explain Object-Oriented programming concepts and techniques using Java Programs.
- Explain exception handling and multithreading in Java,
  Demonstrate core Java Programs.

Learning Outcome:

On completion of the course, students will be able to:

- Implement the OOP concepts of encapsulation, inheritance and polymorphism in java.
- Apply Java programming syntax, control structures and Java programming concepts.
- *Develop Java programs.*
- Differentiate Object Oriented approach from Procedural Approach

Course no: 3.1

Course Name: Mathematics III

Objective:

This course is designed with an objective to

- Introduce the basic notions of groups, rings, fields.
- Demonstrate graphs as a modeling tool in computer science.

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- Describe graph & tree concepts and their applications in network security.

Learning outcome

On completion of the course, students will be able to:

- Describe algebraic structures like groups, ring and field.
- Define the notion of vector space and describe its various properties.
- Solve problems by applying *graph* theoretic results and algorithms

Course Code: 3.2
Course Name: Formal Language and Automata Theory

Objective:

This course is designed with an objective to

- Identify different formal language classes and their relationships
- Design grammars and recognizers for different formal languages

Learning Outcomes:

On completion of this course, the students will be able to:

- Design automata, regular expressions and context-free grammars accepting or generating a certain language;
- Make transformation between equivalent deterministic and non-deterministic finite automata, and regular expressions;
- Simplify automata and context-free grammars;
- Determine if a certain word belongs to a language or not.

Course no.:3.3

Course Name: Software Engineering

Objective:

The course is designed with an objective to:

- Demonstrate software process models such as the waterfall and evolutionary models.
- Discuss the role of project management including planning, scheduling, risk management, etc.
- Define software engineering and explain its importance.

Learning Outcome:

On completion of the course, students will be able to:

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- Create software from the root level starting from requirement gathering to maintenance with the appropriate SDLC.
- *Define software engineering and explain its importance.*

- Identify the processes to be followed in the software development life cycle.

Course No:3.5

Course Name:Operating System

Objective:

This course is designed with an objective to

- Discuss and explain the basic concepts of Operating System, process management, memory management, file management, Input / Output management and the potential problem of deadlocks.

Learning Outcome:

At the end of the course, students are expected to be able to:

- Describe the general architecture of computers,
- Describe, contrast and compare differing structures for operating systems,
- Analyze theory of processes, resource control (concurrency etc.), physical and virtual memory, scheduling, I/O and files

Course No:4.1

Course name - Introduction to Artificial Intelligence

Objective:

The course is designed with an objective to

- Discuss about Artificial Intelligence and its importance.
- Explain Problems and Heuristic Searches.
- Illustrate Knowledge representation and Predicate logic.

Learning Outcome:

On completion of the course, students will be able to:

- Identify different types of AI agents.
- Apply various AI search algorithm
- Comprehend fundamentals of knowledge representation

Course No: 4.2

Course Name: Database Management System

Objective:

The course is designed with an objective to

- Construct simple and moderately advanced database queries using Structured Query *Language (SQL)*

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- Apply logical database design principles, including E-R diagrams and database normalization.

Learning Outcomes:

On completion of this course, the student will be able to:

- Describe the principles of the relational database Access
- Define and manipulate data using SQL
- Construct and normalize conceptual data models.

Course no:4.3

Course Name:Data Communication and Computer Network

Objective:

The course is designed with an objective to

- Introduce Data Communications and Computer Networks.
- Enable students to design and deployment of networks.

Learning Outcome:

On completion of the course, students will be able to:

- Describe various concepts of data communication and computer networks.
- Illustrate the Layers of ISO/OSI and TCP/IP reference model.
- Design , install and deploy networks

Course no: 4.4

Course Name:Scientific Computing using Mathematical Software

Objective:

This course is designed with an objective to

- Introduce numerical techniques that can be used on computers.
- Make the students develop computer programs.
- Interpret the reliability of numerical results,
- Explain the possible uses of numerical methods, matrices .

Learning Outcomes:

On completion of the course the student will be able to

- Develop numerical methods that account for accuracy, convergence and stability.
- Design algorithms to solve numerical problems.
- Develop codes for numerical methods.

Course Code: 5.1

Course Name:Introduction to Computer Graphics

Objective:

The Course is design with an objective to:

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- Discuss different graphics packages, demonstrate functionality of display devices.
- Explain all aspects of computer graphics including hardware, software and applications.
- *Illustrate how an animation is created.*

Learning outcome:

On completion of this course students will able to:

- Develop graphical algorithm to design different graphical pattern
- Design simple graphical pattern using C
- Resolve programming problem using graphics packages.

Course Code: 5.2

Course Name:Operations Research

Objective:

This course is designed with an objective to

- Discuss definition, scope, objectives, phases, models & limitations of operations *research*
- Analyze managerial problems in industry so that they are able to use resources (capitals, materials, staffing, and machines) more effectively
- Explain graphical method, simplex method and duality.
- Solve transportation problem.
- Describe how to write case study report.

Learning outcome

On completion of the course students will be able to:

- Discuss the importance and value of Operations Research and mathematical modeling involving practical problems in industry.
- Model mathematically real life managerial decision making problems.
- Use computer tools to solve a mathematical model for a practical problem.
- Construct case study report.

Course Code: 5.3

Course Name: Internet & Web Programming Technology

Objective: The course is designed with an objective to

- Design a webpage using HTML and CSS.
- Make an interactive webpage using JavaScript.
- Use Server side scripting language to make a dynamic webpage.

Learning Outcome: *On completion of the course, students will be able to:*

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- Design dynamic and interactive web pages by embedding Java Script code in HTML and using Java Script to validate user input.
- Apply CSS in WebPages.
- Recognize the HTML and XML DOM.
- Create website using Server Side Scripting language.
    - Apply AJAX in WebPages.

Course no:TH:5.4

Course Name:Cloud Computing

Objective:

The course is designed with an objective to

- To introduce the broad perceptive of cloud architecture and model
- *To understand the concept of Virtualization.*
- To be familiar with the lead players in cloud.
- To understand the features of cloud simulator
- To apply different cloud programming model as per need.
- To be able to set up a private cloud.
- To understand the design of cloud Services.
    - To learn to design the trusted cloud Computing system

Learning Outcome:

On completion of the course, students will be able to:

- Compare the strengths and limitations of cloud computing
- Identify the architecture, infrastructure and delivery models of cloud computing
- Apply suitable virtualization concept.
- Choose the appropriate cloud player.
- Choose the appropriate Programming Models and approach.
- *Address the core issues of cloud computing such as security, privacy and* interoperability Design Cloud Services
- Set a private cloud

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COURSE AND PROGRAM OUTCOMES :

POST GRADUATE DIPLOMA OF COMPUTER APPLICATION (P.G.D.C.A.) COURSE

Course No: 101
Course Name: Fundamental of Computer

Objective:

The course is designed with an objective to

- Discuss about computers and their applications,
- Explain the concept of various number systems
- Explain fundamental concepts of computer hardware and software,
- Discuss the various operating system environments.
- Introduce the various features of Microsoft Office.

Learning Outcome:

On completion of the course, students will be able to

- Identify computer hardware and peripheral devices,
- Differentiate various number systems,
- Distinguish the advantages and disadvantages of various operating systems.
- Use Microsoft Office suite.

Course No: 102
Course Name: Programming with C

Objective:

The course is designed with an objective to

- Explain the fundamental concepts of C programming language.
- Demonstrate C coding.
- Explain the skills for problem solving using C Program.

Learning Outcome:

On completion of the course, students will be able to

- Comprehend fundamental concepts of C program.
- Develop C code for different problems.

Course No: 103
Course Name: Relational Database Management System

Objective:

The course is designed with an objective to

- Discuss the concept of database
- Explain data modeling and database design.
- Discuss the use of SQL

Learning Outcome:

On completion of the course, students will be able to

- Define database.
- Explain the advantages of database.
- Construct database model.
- Use RDBMS's back end and front end tools.

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Course No: 104
Course Name: Data Communication and Computer Network

Objective:
The course is designed with an objective to

- Introduce basics of Data Communications and Computer Networks

Learning Outcome:
On completion of the course, students will be able to

- Describe fundamental concepts of data communication and computer networks.
- Illustrate the Layers of ISO/OSI and TCP/IP reference model.

Course No: 105
Course Name: Project I

Objective:
The course is designed with an objective to

- Explain basics of system analysis and design.
- Implement the concepts of 1st semester courses.

Learning Outcome:
On completion of the course, students will be able to

- Comprehend fundamental concepts of system analysis and design
- Use and apply the concepts of courses of the 1st semester PGDCA programme.

Course No: 201
Course Name: Introduction to Multimedia

Objective:
The course is designed with an objective to

- Introduce the fundamental elements of multimedia.
- Describe how still images, sound, and video can be digitized on the computer.

Learning Outcome:
On completion of the course, students will be able to

- Summarize the key concepts in current multimedia technology.
- Create quality multimedia software titles.

Course No: 202
Course Name: Desktop Publishing

Objective:
The course is designed with an objective to

- Introduce PageMaker, CorelDraw and Photoshop
- Explain the basics of different kinds of printings

Learning Outcome:
On completion of the course, students will be able to

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Course No: 203
Course Name: Internet & Web Technology

Objective:

The course is designed with an objective to

- Discuss different technology aspects of internet.
- Explain about importance of E-commerce, internet security,
- Explain how an internet works.
- Write program in HTML, java Scripts to design web pages

Learning Outcome:

On completion of the course, students will be able to

- Develop and publish web sites.
- Resolve Code and troubleshoot HTML web pages, incorporating CSS and JavaScripts.

Course No: 204
Course Name: Mobile Technology

Objective:

The course is designed with an objective to

- Discuss different mobile operating system.
- Discuss different methods for mobile application development.

Learning Outcome:

On completion of the course, students will be able to

- Explain different mobile operating system.
- Discuss various mobile technologies.
- Develop mobile applications.

Course No: 205
Course Name: Project II

Objective:

The course is designed with an objective to

- Implement the concepts in real life applications.

Learning Outcome:

On completion of the course, students will be able to

- Use and apply the concepts of courses of the PGDCA programme.

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