BACHELOR OF COMPUTER APPLICATION (BCA)

PROGRAMME OUTCOME

At the end of the three year BCA programme the students will be able to:

- Understand, analyze and develop computer programs in the areas related to algorithm, web design and networking for efficient design of computer based system.
- Work in the IT sector as system engineer, software tester, junior programmer, web developer, system administrator, software developer etc.
- Apply standard software engineering practices and strategies in software project development using open source programming environment to deliver a quality of product for business success.

PROGRAM SPECIFIC OUTCOMES

- Equip themselves to potentially rich & employable field ofcomputer applications.

- Puruse higher studies in the area of Computer Science/Applications.

- Take up self-employment in Indian & global software market.

- Meet the requirements of the Industrial standards.

COURSE OUTCOMES

SYLLABUS FROM 2009 ONWARDDS

SEMESTER I

BCA 101 ENGLISH- COMMUNICATION SKILLS IN ENGLISH (Common Course)

On completion of the course the student should be able to:

- Develop the student's ability to use English language accurately and effectively by enhancing their communication skills
- Mastering the art of a professional business presentation
- Distinguish different communication process and its practical application
- More effective written communication

BCA102 MATHEMATICS - MATRICES, CALCULUS AND LAPLACE TRANSFORMS (Complementary)

On completion of the course the student should be able to:

- Reason mathematically about basic discrete structures such as numbers, sets, used in computer science.

- Familiar with Determinant and Matrices.

- Formulate Limit, Continuity and Differentiability.

- Demonstrate a working knowledge Definite and Indefinite Integrals.

BCA 103 BASIC STATISTICS (Complementary)
On completion of the course the student should be able to:

- Learn about Sampling Methods.

- Know the basic idea of Permutations and Combinations, and Probability Concepts.

- Familiar with Measures of Central Tendency and Measures of Dispersion Range.

- Apply knowledge of mathematics, science, and engineering.

- Design and conduct experiments, as well as to analyze and interpret data.

- Evaluate the probabilities and conditional probabilities.

- Evaluate expectations and conditional expectations of random variables.

- Approximate the distribution of sum of random variables using CLT.

- Construct point estimators using the method of maximum likelihood.

- Calculate the number of samples needed to construct confidence levels on the mean and variance of a normal distribution.

- Use linear regression analysis to develop an empirical model of experimental data.

BCA104: INTRODUCTION TO COMPUTERS (CORE)

On completion of the course the student should be able to:

- Familiar with parts of computer

- Understand the input and output devices.
- Basic ideas of storage devices, computer Networks and Operating System

BCA105: METHODOLOGY OF PROGRAMMING AND PROGRAMMING IN C (CORE)

On completion of the course the student should be able to:

- Analyze a given problem and develop an algorithm to solve the problem

- Improve upon a solution to a problem

- Use the 'C' language constructs in the right way

- Design, develop and test programs written in 'C'

- Use different data types in a computer program.

- Design programs involving decision structures, loops and functions.

- Understand the dynamics of memory by the use of pointers and Structures.

BCA106 SOFTWARE LAB I (CORE)

Upon successful completion of the course, a student will be able to:
- Understand the basic terminology used in computer programming.
- Write, compile and debug programs in Language.
- Create programs involving decision structures, loops, strings and functions.
- Design programs involving structures and pointers.

SEMESTER II

BCA 201: ENGLISH – READING LITERATURE IN ENGLISH (Common)
Upon successful completion of the course, a student will be able:
- To sensitize students to the aesthetic, cultural and social aspects of literature.
- To develop in the learners an appreciation of the subtle nuances of literary expression.
- To enable the learners to revalue literature as cultural and communicative events.
- To improve the learners' use of language as a means of subjective expression.

BCA 202: MATHEMATICS (Complementary)
Upon successful completion of the course, a student will be able to:
- Master the basic set theory.
- Familiar with propositional calculus.
- Know about Graphs and algorithms.

BCA203: ACCOUNTING AND PROGRAMMING IN COBOL (CORE)
Upon successful completion of the course, a student will be able to:

- Understand basic concepts of Accounting.

- Knowledge regarding how to create ledgers, journals and balance sheet.

- To create programs in COBOL.

- Knowledge about different type of files and file programs.

BCA204 : DATA STRUCTURES (CORE)
Upon successful completion of the course, a student will be able to:

- To access how the choices of data structure & algorithm methods impact the performance of program.

- To Solve problems based upon different data structure & also write programs.

- Choose an appropriate data structure for a particular problem.

BCA205 : FUNDAMENTALS OF DIGITAL SYSTEMS (CORE)
Upon successful completion of the course, a student will be able to:

- Perform conversions among different number systems, became familiar with basic logic gates and understand Boolean algebra and simplify simple Boolean functions by using basic Boolean properties & design of combinational circuits such as MUX, DEMUX, Encoder and Decoder etc.

- Understand the design of sequential Circuits such as Flip-Flops, Registers, and Counters.

- Obtain a basic level of Digital Electronics knowledge and set the stage to perform the analysis and design of Complex Digital electronic Circuits

BCA206 : SOFTWARE LAB II (CORE)
Upon successful completion of the course, a student will be able to:

- Know about the basic concepts of Function, Array and Link-list.

- Understand how several fundamental algorithms work particularly those concerned with Stack, Queues, Trees and various Sorting algorithms.

- Create basic COBOL Programs and File programs.

SEMESTER III

BCA301 : ADVANCED STATISTICAL METHODS (COMPLEMENTARY)

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

- Know about different types of distributions.

- Estimate different distributions

- Learn about how to conduct hypothesis Testing.

BCA302 : DESIGN AND ANALYSIS OF ALGORITHMS (CORE)

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

- Design and analyze the time and space efficiency of the data structure
- Design an algorithm by selecting appropriate design strategies.
- Identity the appropriate data structure for given problem
- Have practical knowledge on the application of data structures
- Apply graph and tree traverse technique to various applications.
- Implement dijkstra's algorithm, binary trees, travelling Sales person Problem.

BCA303: COMPUTER ORGANIZATION AND ARCHITECTURE (CORE)

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

- Understand the fundamentals of different instruction set architectures and their relationship to the CPU design.
- Understand the principles and the implementation of computer arithmetic.
- Learn about Primary and Secondary storage System.
- Learn about parallel computer structure and Pipelining.

BCA304: COMPUTER GRAPHICS (CORE)

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

- Provide comprehensive introduction about computer graphics system, design algorithms and two dimensional transformations.
- Make the students familiar with techniques of clipping, three dimensional graphics and three dimensional transformations.

BCA305 :OBJECT ORIENTED PROGRAMMING AND C++ (CORE)

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

- Understand the difference between object oriented programming and procedural oriented language and data types in C++.
- Program using C++ features such as composition of objects, Operator overloading, inheritance, Polymorphism etc.
- Simulate the problem in the subjects like Operating system, Computer networks and real world problems

BCA306 : SOFTWARE LAB III (CORE)

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

- Familiar with the students with OOPs concept
- create programs for various real world problems.

SEMESTER IV

BCA401: OPERATIONAL RESEARCH (COMPLEMENTARY)

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

- Formulate a real-world problem as a mathematical programming model
- Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand
- Understand the relationship between a linear program and its dual, including strong duality and complementary slackness
- Solve specialized linear programming problems like the transportation and assignment problems

BCA402 : MICROPROCESSORS AND PC HARDWARE (CORE)

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

- Learn about the architecture and programming of the microprocessor 8085 and 8086.
- Know the basic concepts of Motherboard and hard disk.

BCA403 : SYSTEM ANALYSIS AND DESIGN (CORE)
On successful completion of the course, a student will be able to:

- Understand the steps in software development.
- Know the tools for System Analysis and design.

BCA404 : DATA BASE MANAGEMENT SYSTEM (CORE)

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

- Gain a good understanding of the architecture and functioning of database management systems as well as associated tools and techniques, principles of data modeling using entity relationship and develop a good database design and normalization techniques to normalize a database.
- Understand the use of structured query language and its syntax, transactions, database recovery and techniques for query optimization.
- Acquire a good understanding of database systems concepts and to be in a position

to use and design databases for different applications.

BCA405 : VISUAL PROGRAMMING TECHNIQUES (CORE)

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

- Design, create, build, and debug Visual Basic applications.
- Explore Visual Basic's Integrated Development Environment(IDE).
- Implement syntax rules in Visual Basic programs.
- Explain variables and data types used in program development.
- Apply arithmetic operations for displaying numeric output.
- Write and apply decision structures for determining different operations.
- Write and apply loop structures to perform repetitive tasks.
- Write and apply procedures, sub-procedures, and functions to create manageable code.

BCA406: SOFTWARE LAB IV (CORE)
On successful completion of the course, a student will be able to:

- Design, create, build, and debug Visual Basic applications.
- Apply arithmetic operations for displaying numeric output.
- Apply decision structures and loop structures for determining different operations.
- Write and apply procedures, sub-procedures, and functions to create manageable code.
- Create one and two dimensional arrays for sorting, calculating, and displaying of data.
- Write Visual Basic programs using object-oriented programming techniques including classes, objects, methods, instance variables, composition, and inheritance, and polymorphism.
- Write Windows applications using forms, controls, and events
- Write SQL Queries in DDL, DML and DC commands for complex applications.

SEMESTER V

BCA501 : COMPUTER NETWORKS

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

- Explain how communication works in computer networks and to understand the basic terminology of computer networks
- Explain the role of protocols in networking and to analyze the services and features

of the various layers in the protocol stack.

- Understand design issues in network security and to understand security threats, security services and mechanisms to counter.

BCA 502 : OPERATING SYSTEMS

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

- Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system.
- Provide students knowledge of memory management and deadlock handling algorithms.
- Implement various algorithms required for management, scheduling, allocation and communication used in Operating System.

BCA 503: JAVA PROGRAMMING

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

- Understand the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements;
- Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.
- Demonstrate the principles of object oriented programming;
- Demonstrate simple data structures like arrays in a Java program.
- Understand the concept of package, interface, multithreading and File handling in java.
- Make use of members of classes found in the Java API (such as the Math class).

BCA504: OPEN COURSE -INTERNET, WEB DESIGNING and CYBER LAWS

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

- Understand the basic working of Internet and its main services.
- Create web pages using HTML.
- Acquire knowledge about Cyber Crime and the facilities for secure communication.

BCA505: SOFTWARE LAB V

On successful completion of the course, a student will be able to create programs of the

following types:

- Programs using classes and methods

- Programs using one dimensional and two dimensional arrays.

- Programs using strings and inheritance.

- Programs using interfaces and Packages.

- Programs to implement the exception handling mechanism

- Programs using multithreading

BCA506: SOFTWARE DEVELOPMENT LAB I (Mini Project)

- To make the student confident in designing a system based on **System Analysis & Design** course, using **VB** and **SQL Server/ORACLE**

SEMESTER VI

BCA601: WEB TECHNOLOGY

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

- Understand, analyze and apply the role of languages like HTML, DHTML,CSS, XML, JavaScript, VBScript, ASP, PHP and protocols in the workings of the web and web applications. Analyze a web project and identify its elements and attributes in comparison to traditional projects.

- Understand, analyze and create web pages using HTML, DHTML and Cascading Styles Sheets.

- Understand, analyze and build dynamic web pages using JavaScript and VB Script (client side programming).

- Understand, analyze and build interactive web applications.

- Understand, analyze and build web applications using PHP.

- Understand, analyze and create XML documents and XML Schema.

BCA602: SOFTWARE ENGINEERING

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

- Select and implement different software development process models.

- Extract and analyze software requirements specifications for different projects.

- Develop some basic level of software architecture/design.

- Apply standard coding practices.

- Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.

- Identify and implement of the software metrics.

- Apply different testing and debugging techniques and analyzing their effectiveness.

ELECTIVE - BCA603 (B): LINUX OPERATING SYSTEM

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

- To know the basic concepts of Linux Operating System.

- Familiar with Linux commands.

- Understand shell programming

- Familiar with system administration

- Understand various types of servers

BCA 604 : SEMINAR

While preparing for the general seminar, it provides opportunity for students to

- Develop skills in presentation and discussion of research topics in a public forum.
- Exposure to a variety of research projects and activities in order to enrich their academic experience

BCA 605: SOFTWARE DEVELOPMENT LAB II (MAIN PROJECT)

While doing a project:
- It makes the student confident in designing an Online Project
- Students are trained to meet the requirements of the Industry.

REVISED SYLLABUS – FROM 2017 ONWARDS
SEMESTER I

EN1CCT01 ENGLISH I – FINE TUNE YOUR ENGLISH (Common Course)

The course is intended to introduce the students to the basics of grammar, usage and effective communication. On completion of the course the student should be able to:

- Confidently use English in both written and spoken forms

- Use English for formal communication effectively

- Have a practical and humorous approach to language learning

- Get equipped with current trends in grammar and usage

MM1CMT31 DISCRETE MATHEMATICS (I) (Complementary)
After completion of course students are expected to be able to:

- Understand, analyze and create mathematical arguments.

- Understand sets, perform operations and algebra on sets, describe sequences and summations.

- Understand basic concepts of number theory and familiarize public and private key cryptosystems.

- Determine properties of relations, identify equivalence and partial order relations, sketch relations.

ST1CMT31 – BASIC STATISTICS AND INTRODUCTORY PROBABILITY THEORY (Complementary)

On completion of the course the student should be able to:

- Learn about sampling theory.

- Learn to draw Graphs and Diagrams

- Understand basic Idea of Permutations and Combinations and Probability concepts

- Familiarity with Measures of Central tendency and Measures of Dispersion

- Analyse data using correlation and regression concepts

- Evaluate the Probabilities and Conditional probabilities

- Learn about random variables and its types

- Evaluate expectations of random variables

CS1CRT01 -COMPUTER FUNDAMENTALS AND DIGITAL PRINCIPLES (Core)

Upon successful completion of the course, a student will be able to:

- Understand Theory Of Digital Design And Computer Organization To Provide An Insight Of How Basic Computer Components Are Specified.

- Understand The Functions Of Various Hardware Components And Their Building Blocks

- Understand And Appreciate Boolean Algebraic expressions to digital design

- An in depth understanding of sequential! Combinational circuits

- An in depth understanding of realization of different combinational/sequential circuits

- An in depth understanding of different stages of an instruction execution

- An in depth understanding of how different hardware components are related and work in coordination

- An ability to understand computer buses and input/output peripherals

CS1CRT02-METHODOLOGY OF PROGRAMMING AND C LANGUAGE (Core)

Upon successful completion of the course, a student will be able to:

- Analyze a given problem and develop an algorithm to solve the problem

- Improve upon a solution to a problem

- Use the 'C' language constructs in the right way

- Design, develop and test programs written in 'C'

- Understand the basic terminology used in computer programming

- Write, compile and debug programs in C language.

- Use different data types in a computer program.

- Design programs involving decision structures, loops and functions.

- Explain the difference between call by value and call by reference

- Understand the dynamics of memory by the use of pointers and Structures.

- Use different data structures and create/update basic data files.

CS1CRP01-SOFTWARE LAB I (Core)

Upon successful completion of the course, a student will be able to:
- Demonstrate use of data types, simple operators(expressions)
- Demonstrate decision making statements (if and if-else, nested structures)
- Demonstrate decision making statements (switch case)
- Demonstrate use of simple loops
- Demonstrate use of nested loops
- Demonstrate menu driven programs and use of standard library functions.
- Demonstrate writing c programs in modular way (use of user defined functions)
- Demonstrate recursive functions.
- Demonstrate use of arrays (1-d arrays) and functions

- Demonstrate use of multidimensional array(2-d arrays) and functions
- Demonstrate use of pointers
- Demonstrate concept of strings (strings and pointers)
- Demonstrate array of strings.
- Demonstrate structures (using array and functions)
- Demonstrate nested structures and unions
- Demonstrate file handling (text files)

SEMESTER II

EN2CCT03 – ENGLISH II – ISSUES THAT MATTER (Common)

By the completion of the course the learner should be able to:

- Identify the major issues of contemporary significance

- Respond rationally and positively to the issues raised

- Internalize the values imparted through the selections

- Be sensitized to contemporary issues of concern

MM2CMT03 - DISCRETE MATHEMATICS (II) (Complementary)

After completion of course students are expected to be able to:

- Define graphs, trees and their properties.

- Define fundamental logic operations and relate Boolean expressions to truth tables and logic diagrams.

- Solve systems of linear equations in matrix form.

- Acquire ability to describe computer programs in a formal mathematical manner

CS2CRT04 -DATA BASE MANAGEMENT SYSTEMS (Core)

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

- Master the basic concepts and understand the applications of database systems.

- Construct an Entity-Relationship (E-R) model from specifications and to transform to relational model.

- Construct unary/binary/set/aggregate queries in relational algebra.

- Understand and apply database normalization principles.

- Construct SQL queries to perform CRUD operations on database. (Create, Retrieve, Update, Delete)

- Understand principles of database transaction management, database recovery, security.

- Analyze Data Base design methodology.

- Acquire knowledge in fundamentals of Data Base management system.

- Analyze the difference between traditional file system and dbms.

- Handle with different Data Base languages. Draw various data models for Data Base and write queries mathematically.

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CS2CRT05-COMPUTER ORGANIZATION AND ARCHITECTURE (Core)

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

- Understand the fundamentals of different instruction set architectures and their relationship to the CPU design.

- Understand the principles and the implementation of computer arithmetic.

- Understand the Primary and Secondary storage System.

- Learn about parallel computer structure and Pipelining.

CS2CRT06-OBJECT ORIENTED PROGRAMMING USING C++ (Core)

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

- Understand fundamental constructs of OOP.
- Get the knowledge of UML with skills to draw UML diagrams.
- Get the knowledge of different forms of OO Implementation.
- Apply object oriented programming concepts in problem solving through C++.
- Gain the basic knowledge on Object Oriented concepts.
- Develop applications using Object Oriented Programming Concepts
- To demonstrate the differences between traditional imperative design and object- oriented design
- To explain class structures as fundamental, modular building blocks
- To understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code.
- To write small/medium scale C++ programs with simple graphical user interface
- Understand the file handling and error handling mechanisms in C++

CS2CRP02-SOFTWARE LAB- II (Core)
OOPS LAB

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

- Programs using Control Structures
- Programs using Functions
- Programs using Arrays
- Programs using Inline Functions
- Programs using Classes
- Programs using Constructors and Destructors

- Programs using Friend Functions

- Programs using Operator Overloading\

- Programs using Inheritance

- Programs using Virtual Functions

- Programs using Files

- Programs using Strings

DBMS LAB

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

- Understand about SQL Fundamentals.

- Understand about Unary & Binary table operations.

- Understand about Handle with different Data Base languages.

- Understand about table View, Log &Triggers.

- Understand different database packages (Oracle/ mysql/ DB2/ etc) Commit& Rollback.

- Understand about handling online Transactions.

- Handle database connectivity with front-end.

- Learn about Queries Using DDL- DML commands

- Learn about Queries using AND- OR- NOT operation, Union- Intersection and Projection, Join Operation

- Learn about Sorting and Grouping

- Learn about Nested queries using SQL

- Learn about Built-in functions of SQL

- Learn about Update operations using SQL

- Learn about Use of SQL forms

SEMESTER III

ST3CMT32 – ADVANCED STATISTICAL METHODS (Complementary)

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

- Learn about different types of distributions

- Estimate different distributions

- Construct point estimators using the method maximum likelihood

- Learn about how to conduct hypothesis testing

CS3CRT07-COMPUTER GRAPHICS (Core)

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

- Provide comprehensive introduction about computer graphics system

- Design algorithms to generate the basic primitives

- Understand 2d transformations.

- Familiar with techniques of clipping, three dimensional graphics and three dimensional transformations.

- Familiar with animations

CA3CRT01-MICROPROCESSOR AND PC HARDWARE (Core)

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

- Learn about the architecture and programming of the microprocessor 8085

- Learn about the basic concepts of Motherboard different buses and hard disk.

- Learn about the basic of different types of memory and memory modules

CA3CRT02-OPERATING SYSTEMS (Core)

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

- Learn about operating systems, functions of operating systems, system calls.

- Learn about process coordination and process scheduling algorithms

- Learn about memory management, critical section and deadlock handling algorithms.

- Learn about file management and disk scheduling algorithms

- At the end of the course, students will be able to implement various algorithms required for management, scheduling, allocation and communication used in Operating System.

CS3CRT08-DATA STRUCTURE USING C++ (Core)

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

- To understand different types of data structures and its basic operations.

- Implement appropriate searching and sorting techniques for a given problem.

- Ability to describe basic operations and its applications of stack, queue and linked list.

- To understand operations of Tree and its variations.

- Ability to understand file and its organization.

- To understand Hashing and Collision Resolution Technique.

CA3CRP03-SOFTWARE LAB III (Core)

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

- Demonstrate array operations such as insertion, deletion, searching, sorting etc.

- Demonstrate stack operations and its applications.

- Demonstrate queue and circular queue operations.

- Demonstrate the operations of linked list and its different types.

- Demonstrate the operations of binary search tree.

SEMESTER IV

MM4CMT03 - OPERATIONS RESEARCH (Complementary)

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

- Formulate a real-world problem as a mathematical programming model

- Understand the theoretical workings of the simplex method for linear programming and perform iterations of it by hand

- Solve specialized linear programming problems like the transportation and assignment Problems

- An idea about game theory and its applications

CS4CRT09-DESIGN AND ANALYSIS OF ALGORITHMS (Core)
On completion of the course, the student will be able to:

- Analyze the performance of algorithms using time and space complexity.

- Understand different algorithm design techniques and to choose appropriate algorithm design techniques for solving problems.

- Describe the divide-and-conquer paradigm and explain how the problems can be solved using it and then analyze the complexity of the algorithms.

- Understand the greedy paradigm and can study the basic problems that can be solved by greedy approach, then analyze the complexity of the algorithms.

- Understand the dynamic paradigm and can study the basic problems that can be solved by dynamic approach, then analyze the complexity of the algorithms.

- Explain the basic traversal and searching techniques (BFS and DFS).

- Describe the backtracking techniques and explain the problems solved by backtracking approach.

CA4CRT03- SYSTEM ANALYSIS & SOFTWARE ENGINEERING (Core)
On completion of the course, the student will be able to:

- Understand the steps in Software Development.

- Select and implement different software development process models.

- Extract and analyze software requirements specifications for different projects.

- Develop some basic level of software architecture/design.

- Apply standard coding practices.

- Define the basic concepts and importance of Software project management concepts like cost estimation, scheduling and reviewing the progress.

- Identify and implement of the software metrics.

- Apply different testing and debugging techniques and analyzing their effectiveness.

CS4CRT10-LINUX ADMINISTRATION (Core)
On completion of the course, the student will be able to:

- To know the basic concepts of Linux Operating System.

- Familiar with Linux commands.

- Understand shell programming

- Familiar with system administration

- Understand various types of servers

CS4CRT11-WEB PROGRAMMING USING PHP (Core)

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

- Understand the fundamentals of web

- Develop basic WebPages

- Use different styles to the webpage elements

- Create, modify and format the contents of webpage with CSS

- Create dynamic., Interactive WebPages using JavaScript

- Apply basic controls of elements with JavaScript

- Use JavaScript to validate form entries

- Study the server side scripting language, PHP

- Understand the PHP Get and Post methods working difference

- Develop knowledge of MySQL commands

- Use PHP to access a MySQL database

CS4CRP04-SOFTWARE LAB IV (Core)
On completion of the course, the student will be able to:

- Design a basic website using HTML and CSS to demonstrate responsive web design

- Implement dynamic WebPages with validation using JavaScript objects by applying different event handling mechanism

- Use PHP scripts to handle html forms

- Create PHP programs that use various PHP library functions

- Develop PHP programs to understand the difference between GET & POST Methods

- Implement PHP programs of cookie and session

- Develop simple web application using server side PHP and database connectivity using MySQL

SEMESTER V

CS5CRT12-COMPUTER NETWORKS (Core)

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

- Explain how communication works in computer networks and to understand the basic terminology of computer networks
- Explain the role of protocols in networking and to analyze the services and features of the various layers in the protocol stack.
- Understand design issues in Network Security and to understand security threats, security services and mechanisms to counter.
- Familiar with basic devices like repeaters, bridges, gateways and quality of service
- Understand the network security, common threats, firewalls, and cryptography

CS5CRT13-IT AND ENVIRONMENT (Core)

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

- Familiar with Internet
- Understand the multidisciplinary nature of environmental studies
- Familiar with Learning Management System (LMS), MOODLE,INFLIBNET,NPTEL etc
- Understand the impact of IT on society in terms of language and culture
- Understand new threats and new opportunities in IT
- To know about E-Waste, its impact and management of E-waste in India.
- To understand Green Computing and its scope.
- To know about Human Right and basic international Human Right Document.
- To understand the Coordination of United Nations in Human Right.
- Understand the monitoring mechanism of Human Right in UN.
- To know the Human Rights in Indian Constitution.
- Awareness of Human rights of Women, Children, Minorities and Prisoners.

CS5CRT14-JAVA PROGRAMMING USING LINUX (Core)

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

- Understand the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements;

- Implement, compile, test and run Java programs comprising more than one class, to address a particular software problem.

- Demonstrate the principles of object oriented programming;

- Demonstrate the ability to use simple data structures like arrays in a Java program.

- Understand the concept of package, interface, multithreading and File handling in java.

- Make use of members of classes found in the Java API (such as the Math class).

- Familiar with JDBC connection

CS5OPT01-- OPEN COURSE – INFROMATICS AND CYBER SECURITY (Core)

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

- Understand the basic working of Internet and its main services.

- Know various features, advantages and disadvantages of internet.

- Learn to create blogs.

- Understand how internet can be used in teaching and learning.

- Acquire knowledge about Cyber Crime and the facilities for secure use of computers.

- Learn the causes, symptoms and prevention of cyber addiction.

CS5CRP05 -SOFTWARE LAB V (Core)

On completion of the course students will be able to create programs of the following types

- Programs using classes and methods

- Programs using one dimensional and two dimensional arrays.

- Programs using strings and inheritance.

- Programs using interfaces and Packages.

- Programs to implement the exception handling mechanism

- Programs using multithreading

- Program using JDBC

C5CRP01-SOFTWARE DEVELOPMENT LAB I (MINI PROJECT IN PHP) (Core)

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

- To make the student confident in designing a system based on System Analysis

& Software Engineering course, using PHP and MySQL

SEMESTER VI

CA6CRT04 -CLOUD COMPUTING (Core)

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

- Understand the basic about cloud computing
- Learn about cloud computing architecture and types
- Learn about cloud application platforms

CS6CRT15 – MOBILE APPLICATION DEVELOPMENT – ANDROID (Core)

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

- Understand about the architecture and features of Android
- Understand about the Android user interface
- Learn to use SQLite Database in Android
- Introduction and use of to JSON and XML

CS6CBT02 – Elective – DATA MINING (Core)

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

- Understand the basic about data mining, classification and major issues
- Learn about Data Warehouse and OLAP technology
- Learn about cluster Analysis and major clustering methods

CA6SMP01 – SOFTWARE LAB VI& SEMINAR (Core)
SOFTWARE LAB VI

On completion of the course students will be able to create programs of the following types

- Installation and configuration of Eclipse and Development Tools
- Creating simple apps using Interface Tools
- Creating Andoid Apps using SQLite
- Familiarizing with JSON and XML

SEMINAR

While preparing for the general seminar, it provides opportunity for students to

- Develop skills in presentation and discussion of research topics in a public forum.
- Exposure to a variety of research projects and activities in order to enrich their academic experience

CA6PRP02 – SOFTWARE DEVELOPMENT LAB II (MAIN PROJECT) (Core)

While doing a project:
- It makes the student confident in designing an Online Project with advanced technologies on their choice
- Students are trained to meet the requirements of the Industry.