

(An Autonomous Institution Affiliated to Madurai Kamaraj University)
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Virudhunagar – 626 001.



Course Outcomes – BCA

I BCA

Semester I

Web Design with HTML and CSS

SUBJECT CODE: U22CAC11

| COs | CO Statement |
|-----|--------------------------------------------------------------------------|
| CO1 | Provide fundamental knowledge and expose to the concepts of website. |
| CO2 | Describe the various tags used for web page development. |
| CO3 | Understand the basic layout used in web pages. |
| CO4 | Familiarize the various types of CSS styles used to styling the website. |
| CO5 | Understand the process involving to developing a website. |

DISCRETE MATHEMATICS

SUBJECT CODE: U22MAAA11

| COs | CO Statement |
|-----------------|----------------------------------------------------------------------------|
| CO ₁ | Understand sets and perform operations and algebra on sets |
| CO2 | Determine the Properties of Relations, Equivalence Relation, Properties of |
| | Relations Matrix and Graph Representation of Relations |
| CO ₃ | Analyse logical propositions via truth tables. |
| CO4 | Perform the Matrix Operations and Rank of a Matrix |
| CO5 | Able to define the basic concepts of Graphs, Directed graphs and Weighted |
| | Graphs |

Lab: Web Design with HTML and CSS

SUBJECT CODE: U22CACP11

| COs | CO Statement |
|-----|-------------------------------------------------------------------|
| CO1 | Understand the important HTML tags for designing static pages and |
| | seperate design from content using Cascading Style sheet. |
| CO2 | Design and develop web pages using CSS styles, internal and/or |
| | external style sheets. |
| CO3 | Develop interactive web pages using Tables and Forms. |
| CO4 | Implement different types of Layouts in developing a web page. |
| CO5 | Able to create a website using HTML & CSS. |

Digital Principles and Computer Organization

SUBJECT CODE: U22CAC12

| COs | CO Statement |
|-----|----------------------------------------------------------------------------------------------|
| CO1 | To obtain basic idea about logic gates. |
| CO2 | To obtain knowledge arithmetic and combinational circuits. |
| CO3 | To have a thorough understanding of the basic structure and operation of a digital computer. |
| CO4 | To study the different ways of communicating with I/O devices and standard I/O interfaces. |
| CO5 | To study the hierarchical memory system including cache memories and virtual memory. |



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LAB: Office Automation

SUBJECT CODE: U22CASP11

SUBJECT CODE: U22CAC21

SUBJECT CODE: U22MAAA21

SUBJECT CODE: U22CACP21

| COs | CO Statement |
|-----|----------------------------------------------------------------------------|
| CO1 | Able to create folders and file operations such as copy, paste, delete and |
| COI | rename. |
| CO2 | Create and edit documents in Word, Excel, PowerPoint. |
| CO3 | Develop slideshow presentations using PowerPoint. |
| CO4 | Implement different types of Layouts in designing the documents. |
| CO5 | Able to use formula and charts using Excel worksheets. |

SEMESTER II

Programming in C

COs

CO₂

CO3

CO4

CO5

| CO Statement |
|-------------------------------------------------------------------------------|
| Describe the basic structure of C Program. |
| Understand the fundamentals of C Programming. |
| Develop an in-depth understanding of functional and logical concepts of C |
| Programming. |
| Implement basic operations on arrays, functions, pointers, structures, unions |
| and files. |
| Provide an exposure to problem-solving through C Programming. |

OPERATIONS RESEARCH

| COs | CO Statement |
|-----------------|-------------------------------------------------------|
| CO ₁ | Understand scopes and Modelling of OR |
| CO ₂ | Determine the standard and canonical form of LPP |
| CO ₃ | To enrich the knowledge of solving Assignment Problem |
| CO4 | Perform the Transportation problem and find the cost |
| CO5 | To solve the matrix in Game Theory |

LAB: C Programming

| COs | CO Statement |
|-----|-----------------------------------------------------------------------|
| CO1 | Develop programming skills using the fundamentals and basics of C |
| COI | Language. |
| CO1 | Develop programs using the basic elements like control statements, |
| CO2 | Arrays and Strings |
| CO3 | Enable effective usage of arrays, structures, functions and pointers. |
| CO4 | Implement files and command line arguments. |
| CO5 | Able to solve real-world problems through C Programming. |

LAB: Multimedia SUBJECT CODE: U22CASP21

| COs | CO Statement |
|-----|------------------------------------------------------------------------------|
| CO1 | To increase the ability to edit and add special features to the images. |
| CO2 | To increase the ability to create flash movie. |
| CO3 | To design various applications such as cards, invitations, certificates etc. |
| CO4 | To use various tools and Filters effectively. |



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COURSE OUTCOME

SEMESTER III Java Programming

Subject Code: U2CAC31

- > To understand fundamentals of java programming such as variables, Conditional and iterative execution, methods, etc.
- > To understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
- > To understand error-handling techniques using exception handling.
- ➤ To understand Applet and Graphics Programming.
- To understand I/O functionality to read from and write to text files.

Data Structure

Subject Code: U2CAC32

| CO1: | To understand the basics of Data Structures. |
|------|-----------------------------------------------------|
| CO2: | To gain knowledge about Linked lists and Stacks. |
| CO3: | To learn the working of queues and trees. |
| CO4: | To gain knowledge about graphs. |
| CO5: | To understand the sorting and searching techniques. |

Computers Based Financial Accounting

Subject Code: U1CCA3A / U1CEA3A

- ➤ Able to understand financial accounting
- > To gain knowledge in final accounts
- To be familiar with Tally

LAB: Java Programming

Subject Code: U2CAC3P1

- ➤ Able to create java programs that leverage the object-oriented features of java programming language.
- ➤ Able to create the interface program.
- Able to create and use threads, handle exceptions and write applets.



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LAB: Data Structure

Subject Code: U4CAS3P

| CO1: | To understand the basics of Data Structures. |
|------|------------------------------------------------|
| CO2: | To understand the Sorting techniques. |
| CO3: | To gain knowledge about Stacks and Queues. |
| CO4: | To learn the working of Trees and Linked List. |

SEMESTER IV

Relational Database Management System

Subject Code: U3CAC41/U2CAC51

| CO1: | Understand the basic concepts and the applications of database systems. |
|------|---------------------------------------------------------------------------------------------------|
| CO2: | Ability to define a problem at the view level and ability to understand the physical |
| | structure of the database to handle data. |
| CO3: | Utilize the knowledge of basics of SQL and construct queries using SQL. |
| CO4: | Ability to normalize the database and understand the internal data structure. |
| CO5: | Apply Relational Database theory and be able to write Relational Algebra expressions for queries. |
| CO6: | Use design principles for logical design of database using E-R method |

Advanced Java Programming

Subject Code: U3CAC42

| CO1: | Students will develop sophisticated GUI using AWT Components. |
|------|----------------------------------------------------------------------------------|
| CO2: | Students will develop interactive user interfaces using the Java Swing class and |
| | appropriate layout managers. |
| CO3: | Students can understand difference between Swing and AWT programming. |
| CO4: | Students to develop server side programs in the form of servlets. |
| CO5: | Students to develop Interactive/Dynamic Web Pages using JSP. |

Principles of Costing

Subject Code: U2CCA4A / U2CEA4A

- ➤ Able to know basics of cost accounting
- To acquire knowledge in marginal costing



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COURSE OUTCOME

SEMESTER V

Operating System

Subject Code: U3CAC51

- CO1: Learn the different types of operating systems and I/O Structure.
- CO2: Learn the process scheduling in the system, how processes communicate with each other.
- CO3: Learn the synchronization between the processes, when deadlock will happen, how to prevent and recover from deadlock.
- CO4: Learn memory management schemes and virtual memory concepts in the system.
- CO5: Learn different ways of directory implementation and allocation methods in operating system.

Data Communications and Networks

Subject Code: U1CAC52

- **CO 1:** Describe how computer networks are organized with the concept of layered approach.
- **CO 2:** To contrast the protocol architectures such as OSI and TCP/IP.
- **CO 3:** To explain how a collision occurs and how to solve it.
- **CO 4:** Identify the different types of network devices and their functions within a network
- **CO 5:** Describe how routing protocols work.
- **CO 6:** Define information security and to identify the challenges for information security

Mobile Application Development

Subject Code: U1CAC53

- CO1: Understand the Architecture, Devices and Applications of Android.
- CO2: Understand the Android Activity Life Cycle and User Interface.
- CO3: Develop Interactive android Applications using Concepts such as Intents and Fragments.

CO4: Develop android applications to manage user data using Databases, File Storage and Preferences.

CO5: Able to Export an Application to Android Play store and reach globally.

Elective 1: Web Technology

Subject Code: U3CAE51

- CO1: List the major elements of the PHP & MySQL work and explain why PHP is good for web development
- CO2: Learn how to take a static website and turn it into a dynamic website run from a database using PHP and MySQL.
- CO3: Analyze the basic structure of a PHP web application and be able to install and maintain the web server, compile, and run a simple web application.



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CO4: Learn how databases work and how to design one, as well as how to use phpMyAdmin to work with MySQL.

CO5: Learn different ways of connecting to MySQL through PHP, and how to create tables, enter data, select data, change data, and delete data. Connect to SQL Server and other data sources.

Elective 1: Data Mining

Subject Code: U3CAE52

CO1: To be familiar concepts of Data Mining and Warehousing and its operations.

CO2: To get exposed with Association rules in Data Mining.

CO3: To get exposed with Clustering techniques and Decision Trees in Data Mining.

CO4: To get familiar with Genetic Algorithm and Neural Network.

CO5: To get exposed with Web, Temporal and Spatial Mining.

Elective 1: TCP/IP

Subject Code: U3CAE53

CO1: To understand networking and its basics.

CO2: To understand about addressing and the media used for data transfer.

CO3: To gain knowledge about Internet Protocol.

CO4: To gain knowledge about User Datagram Protocol.

CO5: To gain knowledge about Transmission Control Protocol.

SBE- EMPLOYABILITY SKILLS

Subject Code: U1PS51

To enrich the Employability Skills by imparting Reasoning skills, Aptitude skills and General Knowledge.

NME - 1: Basics of Computer

Subject Code: U3CAN51

CO1: To understand the basic components of computer.

CO2: To know about the programming languages and operating systems.

CO3: To be aware of the generations of computer.

CO4: To identify the components of computer network.

CO5: To grasp about multimedia and future of computer.

Core 14 - Mobile Application Development Lab

Subject Code: U3CAC5P1

CO1: Develop android applications using Eclipse IDE.

CO2: Learn and Develop android real-time applications.

CO3: Export and Publish android applications.



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Core 15 - Web Technology Lab

Subject Code: U3CAC5P2

CO1: PHP code to produce outcomes and solve problems.

CO2: Display and insert data using PHP and MySQL.

CO3: Test, debug, and deploy web pages containing PHP and MySQL.

SEMESTER VI

Core 16 – Software Engineering

Subject Code: U2CAC61

- CO 1: Understand the phases in Software Development Process and Organizational Structure
- CO 2: Understand the size and cost estimation of the software.
- CO 3: Understand the Software Requirement specification and its needs.
- CO 4: Understand the Software design and its guidelines.
- CO 5: Understand the Verification, Validation Techniques and Maintainability of a Software

Core 17: Cryptography

Subject Code: U3CAC62

- CO1: To understand the fundamentals of Cryptography
- CO2: To acquire knowledge on standard algorithms used to provide confidentiality, integrity and authenticity.
- CO3: To understand the various key distribution and management schemes.
- CO4: To understand how to deploy encryption techniques to secure data in transit across data networks
- CO5: To design security applications in the field of Information technology

Elective 2 – Embedded Systems

Subject Code: U2CAE61

- CO1: Learn and obtain the basic concept of embedded systems
- CO2: Learn to apply and analyze the applications in various processors, Input/output interfacing and Bus Communication
- CO3: Learn interrupt service mechanisms and device driver concepts
- CO4: Learn the process of memory management and basic design of real time operating system
- CO5: Learn to write the programs for microcontroller and obtain basic knowledge of embedded Software Development tools



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Elective 2 – Computer Algorithms

Subject Code: U2CAE62

CO 1: Learn the concept of designing an algorithm to solve real world problems

CO 2: Learn greedy method, advanced tree and graph applications to select a proper pattern matching algorithm for given problem

CO 3: Learn and familiarize with basic paradigms and data structures to solve algorithmic problems.

CO 4: Learn different classes of problems with reference to their computation difficulties

CO 5: Learn major algorithms, design paradigms and methods of analysis in algorithm design

Elective 2 – Cloud Computing

Subject Code: U2CAE63

CO1: To understanding cloud computing terminology.

CO2: To implement virtualization in cloud.

CO3: To gain knowledge about how to migrate our applications to the cloud.

CO4: To know the applications and standards of cloud

CO5: To know the future of cloud computing through mobile and microservices

SBE-6 - Internet of Things

Subject Code: U3CAS61

CO1: To understand the basics of IoT and Machine to Machine Communication

CO2: To gain knowledge about the protocols used for Communication.

CO3: To gain knowledge about processing of data acquired from IoT.

CO4: To understand the working principles of Sensors.

CO5: To understand the basics of Embedded Devices.

NME 2 - Introduction to Multimedia

Subject Code: U3CAN61

CO1: To know the resources and products of multimedia

CO2: To understand the multimedia architecture

CO3: To use the text, graphics in multimedia

CO4: To understand the digital audio format

CO5: To know the multimedia video format

Project and Viva - Voce

Subject Code: U1CA6PR

CO1: Designed to help students develop practical ability and knowledge about practical tools techniques in order to solve real life problems related to the industry, academic institutions and computer science research.

CO2: Involves practical work for understanding and solving problems in the field of computing.



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CO3: Students will select individually Commercial or Technical Project based on Application D evelopment Technologies.

CO4: With the known technologies they can develop the software.

Dot Net Programming Lab

Subject Code: U3CAC6P1

CO1: Basic Programming in Dot NET Environment.

CO2: To develop Windows based applications in Dot NET using VB and C#.

CO3: Proficient to develop Web applications using ASP.NET

Core 19 - Multimedia Lab

Subject Code: U3CAC6P2

CO1: To increase the ability to edit and add special features to the images.

CO2: To increase the ability to create flash movie.

CO3: To design various applications such as cards, invitations, certificates etc.



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COURSE OUTCOME

SELF LEARNING

BCA - UNIX and Shell Programming

Subject Code: U1CASL51

- > To know about to get through understanding of the kernel.
- > To understand the file organization and management.
- > To know the various system calls.
- > To have knowledge of process architecture, process control and scheduling and memory management.

SYSTEM SOFTWARE

Subject Code: U1CASL52

- ➤ It covers the design and implementation of various types of system utilities software.
- > It illustrates how the utility software interacts with operating system.



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Course Outcomes - MCA

I MCA

Semester I

SUBJECT: Digital Principles and Computer Organization

SUBJECT CODE: P22CAC11/ P20CAC11

| COs | CO Statement |
|-----|------------------------------------------------------------|
| CO1 | To obtain basic idea about digital logic design |
| CO2 | To obtain knowledge arithmetic and combinational circuits. |
| CO3 | To understand the basics of a computer |
| CO4 | To understand the architecture of computer. |
| CO5 | To obtain in-depth knowledge of micro programming. |

SUBJECT: Java Programming

SUBJECT CODE: P22CAC12

| COs | CO Statement |
|-----|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Demonstrate the principles of object oriented programming concepts and solve simple problems using the fundamental syntax and semantics of the java programming language |
| CO2 | Understand the behavior of primitive data types, operators and decision & iteration control structures. |
| CO3 | Demonstrate the ability to use class and its types, constructor, overloading, overriding and arrays in a Java program. |
| CO4 | Understand the concept of package, interface, multithreading, exception handling. |
| CO5 | Acquire the knowledge about applet class and creating the applet animation programs. |

SUBJECT: Open Source Technology

SUBJECT CODE: P22CAC13/ P20CAC13

| COs | CO Statement |
|-----|-------------------------------------------------------------------------------|
| CO1 | Learn the basic concepts in PHP and gain knowledge of dynamic website. |
| CO2 | Learn arrays, strings and date functions in PHP. |
| CO3 | Learn different types of functions and its uses in PHP |
| CO4 | Learn the basic design of database, table creation and modifications in MySQL |
| CO5 | Learn to build Dynamic web site using PHP and Database connectivity. |

SUBJECT: Software Engineering

SUBJECT CODE: P22CAC14/ P20CAC14

| COs | CO Statement |
|-----|------------------------------------------------------------------------------|
| CO1 | Understand and demonstrate basic knowledge in software engineering. |
| CO2 | Understand various life cycle models of software engineering. |
| CO3 | Be familiar with the concepts such as software project management techniques |
| | and requirements analysis and specification. |
| CO4 | Learn Virtual Storage Organization and its Management Strategies. |
| CO5 | Apply testing principles on software project and understand the maintenance |
| | concepts. |



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SUBJECT: Operating System

SUBJECT CODE: P22CAE11

| COs | CO Statement |
|-----|-------------------------------------------------------------------------------|
| CO1 | Get an introduction about Operating System and Process Management concepts. |
| CO2 | Learn about Asynchronous Concurrent Processes and Concurrent Programming. |
| CO3 | Learn about Deadlock situations and precautions, Real Storage Management in |
| | System. |
| CO4 | Learn Virtual Storage Organization and its Management Strategies. |
| CO5 | Learn about Processor Scheduling algorithms and Disk Scheduling algorithms in |
| | detail. |

SUBJECT: Computer Graphics SUBJECT CODE: P22CAE12/ P20CAE12

| COs | CO Statement |
|-----|-----------------------------------------------------------------|
| CO1 | Understand the basic Graphics Applications and Graphic Devices. |
| CO2 | Familiarize the algorithms for Graphical display. |
| CO3 | Illustrate the 2D transformations. |
| CO4 | Know the windowing and clipping algorithms. |
| CO5 | Understand the techniques of 3D transformations and Animation. |

SUBJECT: Distributed Operating Systems SUBJECT CODE: P22CAE13/ P20CAE13

| COs | CO Statement |
|-----|---------------------------------------------------------------------------|
| CO1 | Provide the fundamental concepts of distributed operating system. |
| CO2 | Familiarize message passing and synchronization techniques. |
| CO3 | Analyze RPC models working and distributed shared memory. |
| CO4 | Know the synchronization and resource management approaches. |
| CO5 | Understand the process management and distributed file processing models. |

SUBJECT: LAB: Java Programming SUBJECT CODE: P22CAP11/ P20CAP11

| COs | CO Statement |
|-----|---------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Implement Object Oriented programming concept using basic syntaxes of control Structures, strings and function for developing skills of logic building activity |
| CO2 | Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem |
| CO3 | Demonstrate how to achieve reusability using inheritance, interfaces and packages and describes faster application development can be achieved. |
| CO4 | Demonstrate understanding and use of different exception handling mechanisms and concept of multithreading for robust faster and efficient application development. |



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SUBJECT CODE: P22CAP12

SUBJECT CODE: P22CAC21

SUBJECT: LAB: Open Source Programming

| COs | CO Statement |
|-----|----------------------------------------------------------------------------------------|
| CO1 | To implement simple PHP Scripts |
| CO2 | Toimplement functions in PHP |
| CO3 | To perform MySQL Queries through PHP |
| CO4 | To perform advanced PHP techniques such as File upload, sessions, and authentications. |

SEMESTER II

SUBJECT: Python Programming

| COs | CO Statement |
|-----|-------------------------------------------------------------------------------------------|
| CO1 | Understand the basic concepts such as data types, Operators, Control Statements in Python |
| | |
| CO2 | Understand Arrays, Strings, and Functions in Python |
| CO3 | Understand Classes and Objects, Inheritance |
| CO4 | Understand Exceptions, Date and Time functions in Python |
| CO5 | Work on Database Connectivity in Python and Data Science using in Python |

SUBJECT: Relational Database Management System SUBJECT CODE: P22CAC22

| COs | CO Statement |
|-----|------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Draw the ER diagram for enterprise applications |
| CO2 | Analyze the consequence of algebra in designing relational model and create database using query languages with constraints and security |
| CO3 | Normalize databases to reduce cost due to redundancy constraints |
| CO4 | Assess different types of scheduling and recovery techniques for concurrent transactions |
| CO5 | Validate the query evaluation plan and optimize to reduce memory complexity |

SUBJECT: Data Communications And Networks

SUBJECT CODE: P22CAC23/ P20CAC23

| COs | CO Statement |
|-----|----------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Identify the role of each layer in computer networks and its protocols. |
| CO2 | Encode the data for transmission in wired and wireless medium. |
| CO3 | Develop scheme for error detection and correction. |
| CO4 | Select flow control algorithm at link to link level. |
| CO5 | Evaluate the performance of various routing algorithms and Analyse the flow control and congestion control algorithms for QoS at end to end level. |



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SUBJECT: Mobile Computing

| SUBJECT | CODE | P22CA | E21/P200 | CAE21 |
|----------------|-----------|-------|-------------|-------------------------|
| SODJECI | VV/////// | 144 | 11/41/14/17 | $-\Delta \Box \Delta I$ |

| COs | CO Statement |
|-----|------------------------------------------------------------------------------------------|
| CO1 | Provide the basic concepts of mobile computing. |
| CO2 | Understand the working principles of GSM and SMS. |
| CO3 | Familiarize the techniques of GPRS and WAP. |
| CO4 | Classify the techniques of Wireless LAN and designing applications for handheld devices. |
| CO5 | Know the evolution of IMS and security issues of mobile computing. |

SUBJECT: Data Mining SUBJECT CODE: P22CAE22/P20CAE22

| COs | CO Statement |
|-----|-----------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Remember the concepts of the data mining techniques, algorithms, methods and tools. |
| CO2 | Understand an application by using various data mining techniques to identify a pattern that evolves in various business domains. |
| CO3 | Apply the patterns that can be extracted on application of data mining techniques in various domains. |
| CO4 | Analyze the market needs by applying suitable OLAP operations. |
| CO5 | Learn how data warehousing has become mainstream. |

SUBJECT: Cloud Computing

SUBJECT CODE: P22CAE23

| COs | CO Statement |
|-----|------------------------------------------------------------------------|
| CO1 | Understand cloud computing architecture, Advantages and Disadvantages. |
| CO2 | Understand deployment models and Services Models. |
| CO3 | Implement virtualization in cloud. |
| CO4 | Illustrate networking and open source for cloud. |
| CO5 | Know security and future of cloud computing. |

SUBJECT: Internet and Web Designing

SUBJECT CODE: P22CAN21

| COs | CO Statement |
|-----|-----------------------------------------------------------------------------|
| CO1 | Understand the basic concepts of Internet and WWW. |
| CO2 | Design web pages using HTML Basic Tags and understand the various sections. |
| CO3 | Understand how to insert ordered and unordered lists within a web page. |
| CO4 | Understand how to insert link and table within a web page. |
| CO5 | Understand how to insert frames and forms within a web page. |



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SUBJECT CODE: P22CAP21

SUBJECT: LAB: Python Programming

| COs | CO Statement |
|-----|--------------------------------------------------------------------------------------------|
| CO1 | Create programs using the basic concepts such as data types, Control Statements in Python. |
| CO2 | Create programs using the concepts such as Arrays, Strings, and Functions in Python. |
| CO3 | Create programs using the concepts such as Classes and Objects, Inheritance |
| CO4 | Create programs using Exceptions, Database Connectivity in Python. |

SUBJECT: LAB: Relational Database Management System

SUBJECT CODE: P22CAP22

| COs | CO Statement | |
|-----|---------------------------------------------------------------------------------------------|--|
| CO1 | Populate and query a database using SQL DML/DDL commands | |
| CO2 | Declare and enforce integrity constraints on a database using a state-of-the-art RDBMS | |
| CO3 | Do Programmes on PL/SQL including stored procedures, stored functions, cursors and packages | |
| CO4 | Design and build a GUI application using any programming language as front end | |



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COURSE OUTCOME

SEMESTER IIICryptography and Network Security

Subject Code: P19CAC31

| CO1: | To understand the fundamentals of Cryptography. |
|--------------|------------------------------------------------------------------------------------|
| CO2: | To acquire Knowledge on standard algorithms used to provide confidentiality, |
| | integrity and authentication. |
| CO3 : | To understand the various key distribution and management schemes. |
| CO4: | To understand how to deploy encryption techniques to secure data in transit across |
| | data networks. |
| CO5 : | To design security applications in the field of information technology. |

Principles of Compiler Design

Subject Code: P19CAC32

| CO1: | To understand the functionality of each phase involved in Compilation process. |
|--------------|----------------------------------------------------------------------------------------|
| CO2: | Implement the parsing techniques including Bottom-up and Top-down parsing for |
| | the |
| | given programming construct described in Context Free Grammar. |
| CO3 : | Understand the different representations of intermediate code. |
| CO4: | Apply different error recovery routines to recover the errors seen at different phases |
| | of compilation. |
| CO5 : | Generate the machine code by considering all the functionalities involved in |
| | different phases of the compilation process. |

Cloud Computing

Subject Code: P19CAC33

| CO1: | To understand the different services of cloud computing |
|------|---------------------------------------------------------|
| CO2: | To learn about hardware and infrastructure |
| CO3: | To know the standards of cloud |
| CO4: | To know how to develop an applications |
| CO5: | To study the migration and future of cloud |



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Internet of Things (IoT)

Subject Code: P19CAC34

| CO1: | Understand the concepts of Internet of Things. |
|-------------|--------------------------------------------------------------------------------------|
| CO2: | Determine the Market Perspective of IoT and Data Management in IoT. |
| CO3: | Design IoT applications in different domain and be able to analyze their performance |
| CO4: | Implement basic IoT applications on embedded platform. |
| CO5: | Application of IoT in Industrial and Commercial Building Automation and Real |
| | World Design Constraints |

Digital Image Processing

Subject Code: P19CAE31

| CO1: | To be familiar with digital image fundamentals. |
|--------------|--------------------------------------------------------------------------|
| CO2: | To get exposed with simple image enhancement techniques in Spatial and |
| | Frequency domain. |
| CO3 : | To get exposed with simple Image restoration and Segmentation techniques |
| CO4 : | To get familiar with image compression methods. |
| CO5: | To represent image in the form of different features. |

Embedded Systems

Subject Code: P19CAE32

- To understand the concept of Embedded Systems and architecture of advanced Processors.
- To understand the working principle of Processors.
- To understand the programming methods for designing an Embedded System.
- To gain knowledge about the hardware and software tools used to develop an Embedded System.
- To know about inter process communication

ANDROID PROGRAMMING

Subject Code: P19CAE33

- To discuss about android programming and its tools.
- To discuss about user interface, menus and views.
- To discuss about publishing android apps.



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LAB: Dot Net Programming

Subject Code: P19CAP32

- To let the students gain knowledge about the programming concepts in .Net Framework such as:
- How to create and use new types (enumerations, classes, and structures), and explain the differences between reference types and value types.
- Write efficient code that includes appropriate sequence, selection and iteration constructs.
- To familiar with Framework libraries, inbuilt function, interfaces

SEMESTER IV Project and Viva-voce

Subject Code: P19CA4PV

- To solve real life problems in the Industry/Academic Institutions/Computer science research.
- The Project and Viva-voce is one that involves practical work for understanding and solving problems in the field of computing.
- Students will do individually Commercial or Technical Project based on their Industry /Academic Institutions needs.
- With the known/needed technologies they can develop the software.



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COURSE OUTCOME

SELF LEARNING

Software Testing

Subject Code: P19CASL31

- > To learn about the purpose and levels of software testing.
- > To learn about the different types of testing.
- > To identify the bugs and failures in the software.
- > To find ways to solve the bugs and failures in the software.
- > To implement the various testing methods in the software.

XML

Subject Code: P19CASL32

- ➤ Able to get an idea about XML.
- Able to know about XML Processing and Validation.
- > To Creating and Processing XML Documents.



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COURSE OUTCOMES UNDERGRADUATE

III - Year

V - Semester

Employability Skills

Subject Code: U1PS51

In this course, the students will

| CO1: | Enrich them with the employability skills like reasoning skills and aptitude skills. |
|------|--------------------------------------------------------------------------------------|
| CO2: | Get adequate exposure to various types of competitive examinations. |
| CO3: | Get enough training in OMR based answer sheet. |



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COURSE OUTCOMES UNDERGRADUATE

I - Semester

Subject Code: U1VE11

Value Education

In this course, the students will

| CO1: | Learn to choose their own personal moral and spiritual values. |
|------|----------------------------------------------------------------|
| CO2: | Learn to become responsible citizens. |
| CO3: | Get sensitized to value formation. |