KRISHNASAMY COLLEGE OF SCIENCE, ARTS AND MANAGEMENT FOR WOMEN, CUDDALORE

DEPARTMENT OF COMPUTER SCIENCE

BACHELOR OF COMPUTER SCIENCE

CBCS PATTERN (2023-2024)

PYTHON PROGRAMMING

SUBJECT CODE: 23UCSCC13

Course Outcomes:

- Learn the basics of python, Do simple programs on python, Learn how to use an array.
- Develop program using selection statement, Work with Looping and jump statements, Do programs on Loops and jump statements.
- Concept of function, function arguments, Implementing the concept strings in various application, Significance of Modules, Work with functions, Strings and modules.
- Work with List, tuples and dictionary, Write program using list, tuples and dictionary.
- Usage of File handlings in python, Concept of reading and writing files, Do programs using files.

OUTCOME MAPPING

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	3	3	3	3	3	3
CO 2	3	3	3	3	2	3
CO 3	3	3	3	3	2	2
CO 4	3	3	3	3	2	3
CO 5	3	2	3	3	3	3
Weightage of course contributed to each PSO	15	14	15	15	13	14

PYTHON PROGRAMMING LAB

SUBJECT CODE: 23UCSCP14

Course Outcomes:

- Demonstrate the understanding of syntax and semantics of PYTHON language.
- Identify the problem and solve using PYTHON programming techniques.
- Identify suitable programming constructs for problem solving.
- Analyze various concepts of PYTHON language to solve the problem in an efficient way.
- Develop a PYTHON program for a given problem and test for its correctness.

OUTCOME MAPPING

CO/PSO	**PSO 1**	**PSO 2**	**PSO 4**	**PSO 5**	**PSO 6**
CO 1	**3**	**3**	**3**	**3**	**3**
CO 2	**3**	**3**	**3**	**2**	**3**
CO 3	**3**	**3**	**3**	**2**	**2**
CO 4	**3**	**3**	**3**	**2**	**3**
CO 5	**3**	**2**	**3**	**3**	**3**
Weightage of course contributed to each PSO	**15**	**14**	**15**	**13**	**14**

PROBLEM SOLVING TECHNIQUES

SUBJECT CODE: 23UCSCF17

Course Outcomes:

- Study the basic knowledge of Computers. Analyze the programming languages.
- Study the data types and arithmetic operations. Know about the algorithms.
- Develop program using flow chart and pseudocode.
- Determine the various operators. Explain about the structures.
- Illustrate the concept of Loops.
- Study about Numeric data and character-based data.
- Analyze about Arrays.

OUTCOME MAPPING

CO/PSO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**	**PSO 5**	**PSO 6**
CO 1	**3**	**3**	**3**	**3**	**3**	**3**
CO 2	**3**	**3**	**3**	**3**	**3**	**3**
CO 3	**3**	**2**	**3**	**3**	**3**	**3**
CO 4	**3**	**3**	**2**	**3**	**3**	**3**
CO 5	**3**	**3**	**3**	**3**	**3**	**2**
Weightage of course contributed to each PSO	**15**	**14**	**14**	**15**	**15**	**14**

DATA STRUCTURE AND ALGORITHMS

SUBJECT CODE: 23UCSCC23

Course Outcomes:

- Understand the concept of Dynamic memory management, data types, algorithms, Big O notation.
- Understand basic data structures such as arrays, linked lists, stacks and queues.
- Describe the hash function and concepts of collision and its resolution methods.
- Solve problem involving graphs, trees and heaps.
- Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data.

OUTCOME MAPPING

CO/PSO	**PSO 1**	**PSO 2**	**PSO 3**	**PSO 4**	**PSO 5**	**PSO 6**
CO 1	**3**	**3**	**3**	**3**	**3**	**3**
CO 2	**3**	**3**	**1**	**3**	**3**	**3**
CO 3	**3**	**2**	**3**	**2**	**3**	**2**
CO 4	**3**	**3**	**2**	**2**	**3**	**3**
CO 5	**3**	**3**	**3**	**3**	**3**	**3**
Weightage of course contributed to each PSO	**15**	**14**	**13**	**13**	**15**	**14**

DATA STRUCTURE AND ALGORITHMS LAB

SUBJECT CODE: 23UCSCP24

Course Outcomes:

- Understand the concept of Dynamic memory management, data types, algorithms, Big O notation.
- Understand basic data structures such as arrays, linked lists, stacks and queues.
- Describe the hash function and concepts of collision and its resolution methods.
- Solve problem involving graphs, trees and heaps.
- Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data.

OUTCOME MAPPING

CO/PSO	PSO 1	PSO 2	PSO 3	PSO 4	PSO 5	PSO 6
CO 1	3	3	3	3	3	3
CO 2	3	3	1	3	2	3
CO 3	3	2	3	3	2	3
CO 4	3	3	2	3	2	3
CO 5	3	3	3	3	3	3
Weightage of course contributed to each PSO	15	14	13	15	13	15

ADVANCED EXCEL

SUBJECT CODE:23UCSES26

Course Outcomes:

- Handle large amounts of data.
- Aggregate numeric data and summaries into categories and subcategories.
- Filtering, sorting, and grouping data or subsets of data.
- Create pivot tables to consolidate data from multiple files.
- Presenting data in the form of charts and graphs.

OUTCOME MAPPING

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	2	3	2	2	3
CO2	2	2	2	3	2
CO3	2	3	2	2	2
CO4	3	2	3	3	2
CO5	2	2	3	2	2
Weightage of course contributed to each PSO	11	12	12	12	11

INTERNET AND ITS APPLICATIONS

SUBJECT CODE: 23USECG27

Course Outcomes:

- Acquire practical knowledge in internet concepts.
- Acquire the knowledge in e-mail concepts.
- Analyse the internet services.
- Analyse the web concepts and browsers.
- Knowledge in search engines.

OUTCOME MAPPING

CO/PO	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**
CO1	2	3	2	2	2
CO2	3	2	2	3	2
CO3	3	3	3	2	3
CO4	2	2	3	3	2
CO5	2	2	3	2	2
Weightage of course contributed to each PSO	12	12	13	12	11

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ANNAMALAI UNIVERSITY

MASTER OF COMPUTER SCIENCE

CBCS PATTERN

(With effect from 2023-2024)

ANALYSIS & DESIGN OF ALGORITHMS

SUBJECT CODE: 23PCSCC11

Course Outcomes

- Get knowledge about algorithms and determines their time complexity.
- Demonstrate specific search and sort algorithms using divide and conquer technique.
- Gain good understanding of Greedy method and its algorithm.
- Able to describe about graphs using dynamic programming technique.
- Demonstrate the concept of backtracking & branch and bound technique.
- Explore the traversal and searching technique and apply it for trees and graphs.

Outcome Mapping

COs	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	M	S	M	S	L	M	L	S	M
CO2	S	S	S	S	S	M	S	M	S	M
CO3	S	S	S	S	S	M	S	M	S	M
CO4	S	S	S	S	S	M	S	M	S	M
CO5	S	S	S	S	S	M	S	M	S	M

PYTHON PROGRAMMING

SUBJECT CODE: 23PCSCC12

Course Outcomes

- Understand the basic concepts of Python Programming
- Understand File operations, Classes and Objects
- Acquire Object Oriented Skills in Python
- Develop web applications using Python
- Develop Client Server Networking applications.

Outcome Mapping

COs	PO 1	PO 2	PO3	PO4	PO 5	PO6	PO7	PO 8	PO 9	PO1 0
CO1	S	S	M	S	S	S	M	M	S	M
CO2	S	S	S	S	S	S	S	M	S	M
CO3	S	S	S	S	S	S	S	M	S	M
CO4	S	S	S	S	S	S	S	M	S	M
CO5	S	S	S	S	S	S	S	M	S	M

ALGORITHM AND PYTHON LAB

SUBJECT CODE: 23PCSCP13

Course Outcomes

- Understand the concepts of object oriented with respect to C++ and able to write programs in Python using OOPS concepts.
- Able to understand and implement OOPS concepts and to understand the concepts of File operations and Modules in Python.
- Implementation of data structures like Stack, Queue, Tree, List using C++ and Implementation of lists, dictionaries, sets and tuples as programs.
- Application of the data structures for Sorting, Searching using different techniques and to develop web applications using Python.

Outcome Mapping

COs	PO 1	PO 2	PO3	PO4	PO 5	PO6	PO7	PO 8	PO9	PO10
CO1	S	S	M	S	S	S	M	M	S	S
CO2	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	S	S	S	S	M	S	S

OBJECT ORIENTED ANALYSIS AND DESIGN

SUBJECT CODE: 23PCSCE14-3

Course Outcomes

- Understand the concept of Object-Oriented development and modeling techniques
- Gain knowledge about the various steps performed during object design
- Abstract object-based views for generic software systems
- Link OOAD with C++ language
- Apply the basic concept of OOPs and familiarize to write C++ program.

Outcome Mapping

COs	PO 1	PO2	PO3	PO4	PO5	PO6	PO 7	PO8	PO9	PO10
CO1	S	S	S	M	S	M	S	M	S	S
CO2	S	S	S	M	S	M	S	M	S	S
CO3	S	S	S	M	S	M	S	M	S	S
CO4	S	S	S	M	S	M	S	M	S	S
CO5	S	S	S	M	S	M	S	M	S	S

INTERNET OF THINGS

SUBJECT CODE: 23PCSCE15-2

Course Outcomes

- Understand about IoT, its Architecture and its Applications
- Understand basic electronics used in IoT & its role
- Develop applications with C using Arduino IDE
- Analyze about sensors and actuators
- Design IoT in real time applications using today's internet &wireless technologies.

Outcome Mapping

COs	PO 1	PO 2	PO3	PO4	PO 5	PO6	PO7	PO 8	PO9	PO1 0
CO1	M	M	M	S	M	S	M	M	S	M
CO2	M	S	M	S	M	S	M	S	S	S
CO3	S	S	S	S	M	S	M	S	S	S
CO4	S	S	S	S	S	S	S	S	S	S
CO5	S	S	S	S	S	S	S	S	S	S

DATA MINING AND WAREHOUSING

SUBJECT CODE: 23PCSCC21

Course Outcomes

- Understand the basic data mining techniques and algorithms
- Understand the Association rules, Clustering techniques and Data warehousing contents
- Compare and evaluate different data mining techniques like classification, prediction, Clustering and association rule mining
- Design data warehouse with dimensional modeling and apply OLAP operations
- Identify appropriate data mining algorithms to solve real world problems.

Outcome Mapping

Cos	PO 1	PO 2	PO3	PO4	PO 5	PO6	PO7	PO 8	PO9	PO10
CO1	S	M	S	S	S	S	M	M	M	M
CO2	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	S	S	S	S	M	S	S
CO5	S	S	S	S	S	S	S	M	S	S

DATA MINING AND ADVANCE JAVAPROGRAMMING LAB

SUBJECT CODE: 23PCSCP22

Course Outcomes

- Able to write programs using R for Association rules, Clustering techniques and simple Java programmes.
- To implement data mining techniques like classification, prediction and must be capable of implementing JDBC and RMI concepts.
- Able to use different visualizations techniques using R and able to write
- Applets with Event handling mechanism.
- To apply different data mining algorithms to solve real world applications and To create interactive web based applications using servlets and JSP.

Outcome Mapping

COs	PO 1	PO 2	PO 3	PO 4	PO 5	PO 6	PO 7	PO 8	PO 9	PO 10
CO1	S	S	M	S	S	S	M	M	S	S
CO2	S	S	S	S	S	S	S	M	S	M
CO3	S	S	S	S	S	S	S	S	S	S
CO4	S	S	S	S	S	S	S	M	S	S

ADVANCED JAVA PROGRAMMING

SUBJECT CODE: 23PCSCC23

Course Outcomes

- Understand the advanced concepts of Java Programming
- Understand JDBC and RMI concepts
- Apply and analyze Java in Database
- Handle different event in java using the delegation event model, event listener and class
- Design interactive applications using Java Servlet, JSP and JDBC.

Outcome Mapping

Cos	PO1	PO2	PO3	PO4	PO5	PO6	PO7	PO8	PO9	PO10
CO1	S	S	S	S	S	S	M	M	M	S
CO2	S	S	S	S	S	S	S	M	S	S
CO3	S	S	S	S	S	S	S	M	S	S
CO4	S	S	S	S	S	S	S	M	S	S
CO5	S	S	S	S	S	S	S	M	S	S

ADVANCED OPERATING SYSTEMS

SUBJECT CODE: 23PCSCE24-3

Course Outcomes

- Understand the design issues associated with operating systems
- Master various process management concepts including scheduling, deadlocks and distributed file systems
- Prepare Real Time Task Scheduling
- Analyze Operating Systems for Handheld Systems.

Outcome Mapping

Cos	PO 1	PO2	PO 3	PO 4	PO5	PO 6	PO 7	PO8	PO 9	PO 10
CO 1	S	M	S	S	S	S	M	M	M	M
CO 2	S	M	S	S	S	S	S	M	S	M
CO 3	S	M	S	S	S	S	S	M	S	M
CO 4	S	M	S	S	S	S	S	M	S	M
CO 5	S	M	S	S	S	S	S	M	S	M

MOBILE COMPUTING

SUBJECT CODE: 23PCSCE25-1:

Course Outcomes

- Understand the need and requirements of mobile communication
- Focus on mobile computing applications and techniques
- Demonstrate satellite communication in mobile computing
- Analyze about wireless local loop architecture.
- Analyze various mobile communication technologies.

Outcome Mapping

Cos	PO 1	PO 2	PO3	PO4	PO 5	PO6	PO7	PO 8	PO9	PO1 0
CO 1	L	M	L	L	M	S	M	M	M	M
CO 2	S	S	S	M	M	S	M	S	S	S
CO 3	S	S	S	S	M	S	S	S	S	S
CO 4	S	S	S	S	S	S	S	S	S	S
CO 5	S	S	S	S	S	S	S	S	S	S

OBJECT ORIENTED PROGRAMMING THROUGH JAVA, HTML BASICS

SUBJECT CODE: 23PCSCS26

Course Outcomes

- Develop a proper understanding of Web Development Architecture.
- Create application using React components.
- Perform Navigation using Routes.
- Build Web Applications using React with Redux.
- Perform ReactJS animations.

Outcome Mapping

COs	PO 1	PO 2	PO3	PO4	PO 5	PO6	PO7	PO8	PO9	PO1 0
CO1	S	M	S	M	S	L	M	L	S	M
CO2	S	S	S	S	S	M	S	M	S	M
CO3	S	S	S	S	S	M	S	M	S	M
CO4	S	S	S	S	S	M	S	M	S	M
CO5	S	S	S	S	S	M	S	M	S	M

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CBCS PATTERN

(With effect from 2022-2023)

FUNDAMENTALS OF COMPUTERS

Subject Code: 22UCSCC13

Course Outcomes:

- Explain the needs of hardware and software required for a computation task.
- Can have the knowledge about the generations of computers.
- Understand the concept of output device.
- Having the skill about the various types of languages.
- Understand the concept of file processing.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	2	3	2
CO3	3	3	2	2	3
CO4	3	2	3	3	2
CO5	2	2	3	2	2

PROGRAMMING IN C

Subject Code:22UCSCC14

Course Outcomes:

- To understand the concepts of data types and operators
- To analyze the usages of the various programming constructs and functions

- To interpret the importance of arrays and pointers
- To identify the purpose of structures, unions, macros and bit fields
- To develop programs using dynamic memory allocation and data file operations

OUTCOME MAPPING:

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	2	3	2
CO3	3	2	2	2	2
CO4	3	2	3	3	3
CO5	2	2	3	2	2

PROGRAMMING IN C - LAB

Subject Code: 22UCSCP15

Course Outcomes:

- To Develop Programs In C Using Basic Constructs.
- Familiarize The Different Control And Decision Making Statements In "C"
- Build Programs Using Arrays And Strings.
- Provide Knowledge On Working With Files And Functions.
- To Understand The Concepts of Structures.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	2	2	2	3	2
CO3	3	3	2	2	3
CO4	2	2	3	3	2
CO5	2	2	3	2	2

PROGRAMMING WITH C++

Subject Code: 22UCSCC23

Course Outcomes:

- Able to understand OOPs concept, C++ language features.
- Able to understand and apply the concepts of Classes & Objects, friend function, constructors and destructors in program design.
- Able to design & implement various forms of inheritance, and String classes.
- Able to apply and analyze operator overloading, and runtime polymorphism.
- Able to analyze and explore various Stream classes, I/O operations and Exception handling.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	3	3	2
CO3	2	3	2	2	2
CO4	2	2	3	3	2
CO5	2	2	3	2	3

PROGRAMMING WITH C++ LAB

Subject Code: 22UCSCP24

Course Outcomes:

- Creating simple programs using classes and objects in C++.
- Implement Object Oriented Programming Concepts in C++.
- Develop applications using stream I/O and file I/O.
- Implement simple graphical user interfaces.
- Implement Object Oriented Programs using templates and exceptional handling concepts.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	2	3
CO2	3	2	3	3	2
CO3	2	3	2	2	2
CO4	3	2	3	3	2

DIGITAL LOGIC FUNDAMENTALS

Subject Code: 22UCSCE26-1

Course Outcomes:

1) To learn the basic design of Computers, Number Systems and Binary Codes.
2) To understand the Boolean algebra and the Logic Gates Operations.
3) To learn and practice the K-Map Simplifications.
4) To study the Design Procedure of Adders, Subtractors and Multilevel Circuits.
5) To understand Flipflops, its types and the design of Counters.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	3	3	2
CO3	3	3	2	2	3
CO4	2	2	3	3	2
CO5	2	2	3	2	2

PROGRAMMING IN JAVA

Subject Code: 22UCSCC33

Course Outcomes:

- Competence on the development of small to medium sized application programs that demonstrate professionally acceptable coding.
- Demonstrate the concept of object oriented programming through Java.
- Apply the concept of Inheritance, Modularity, Concurrency, Exceptions handling and data persistence to develop java program.
- Develop java programs for applets and graphics programming.
- Understand the fundamental concepts of AWT controls, layouts and events.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	2	3	2
CO3	3	3	2	2	2
CO4	2	2	3	3	3
CO5	2	2	3	2	3

PROGRAMMING IN JAVA LAB

Subject Code: 22UCSCP34

Course Outcomes:

- Understand the basic concepts of Java Programming with emphasis on ethics and principles of professional coding.
- Demonstrate the creation of objects, classes and methods and the concepts of constructor, methods overloading and inheritance.
- Construct Java programs using Multithreaded Programming and Exception Handling.
- Understand the implementation of Graphics and Applets.
- Implementation of AWT controls, layouts and windows fundamentals.

CO1	2	3	2	2	3
CO2	3	2	2	3	2
CO3	3	3	2	2	3
CO4	2	2	3	3	2
CO5	2	3	3	2	3

OUTCOME MAPPING

COMPUTER GRAPHICS

Subject Code: 22UCSCE36-2

Course Outcomes:

- Remember the basic concepts of Graphics system.
- Understanding scanner systems and I/O Devices.
- Apply 2D Transformations.
- Evaluate 3D Transformations.
- Implement the Visual surface techniques.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	2	3	3
CO3	2	3	2	2	2
CO4	3	2	3	3	2
CO5	2	2	3	2	2

PYTHON PROGRAMMING

Subject Code: 22UCSCC43

Course Outcomes:

- To Understand the principles of Python and acquire skills in programming in python
- To develop the emerging applications of relevant field using Python
- Interpret the fundamental Python syntax and semantics and be fluent in the use of Python control flow statements.
- Able to develop simple turtle graphics programs in Python
- To Understand the Files, Exception handling, object oriented programming principles in Python.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	2	3
CO2	2	2	2	3	2
CO3	3	3	2	2	2
CO4	2	2	3	3	3
CO5	2	2	3	2	2

PYTHON PROGRAMMING LAB

Subject Code: 22UCSCP44

Course Outcomes:

- Understand the numeric or real-life application problems and solve them.
- Apply a solution clearly and accurately in a program using Python.
- Apply the best features available in Python to solve the situational problems.
- Understand the concept of file handling in Python.
- Apply the recursive methods in Python.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	2	3	2
CO3	2	3	2	2	2
CO4	3	2	3	3	3
CO5	2	2	3	2	2

SOFTWARE ENGINEERING

Subject Code: 22UCSCS48

Course Outcomes:

- The concepts of software processes and software process models.
- Describe the scenario-based and class-based models of software systems.
- Apply design concepts and frame conceptual models for a given project.
- Calculate effort estimation using COCOMO model.
- Explain the testing strategies for ensuring software quality and agile development process.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	3	2	2	3	2
CO3	3	3	2	2	2
CO4	3	2	3	3	2
CO5	2	2	3	2	2

FUNDAMENTALS OF INFORMATION TECHNOLOGY

Subject Code: 22UCSCN37

Course Outcomes:

- Students understand Major components of Computer System and its working principles.
- Students learn and understand the Role of an Operating System and basic terminologies of networks.
- Students understand how the Information Technology aids for the Current scenario.
- Students understand the Computer Software.
- Students understand internet applications.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	3
CO2	2	2	2	3	2
CO3	2	3	2	2	2
CO4	3	2	3	3	2
CO5	2	2	3	2	2

INTERNET TECHNOLOGY

Subject Code: 22UCSCN47

Course Outcomes:

- Students understand the Fundamentals of Internet, Connectivity and its resource Requirements.
- Students understand the Internet Technology and its applications.
- Students understand the basis of WWW and Web Browsers.
- Students learn how to Mailing system and applications of Internet.

- Students understand relay chat that is how to read e- contents.

OUTCOME MAPPING

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	2
CO2	3	2	2	3	2
CO3	3	3	3	2	3
CO4	2	2	3	3	2
CO5	2	2	3	2	2

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CBCS PATTERN

POST GRADUATE

(With effect from 2022-2023)

DESIGN AND ANALYSIS OF ALGORITHMS

SUBJECT CODE: 22PCSCC11

COURSE OUTCOMES

- Acquire knowledge on the concepts of Algorithm
- Implementing various Algorithmic and sorting approach
- Able to develop Greedy Algorithm.
- Acquire knowledge in Dynamic Programming.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	2	2
CO2	3	3	2	2	2
CO3	2	3	3	2	2
CO4	1	3	3	2	1
CO5	2	3	3	3	2

ADVANCED JAVA PROGRAMMING

SUBJECT CODE:22PCSCC12

Course Outcomes

- Identify classes, objects, members of a class and the relationships among them needed for a finding the solution to specific problem.
- Use the Java language for writing well-organized, complex computer programs with both command line and graphical user interfaces.
- Identify and describe common abstract user interface components to design GUI in Java using Applet & AWT along with response to events
- Apply Servlets and JSP for creating Web based applications using JDBC
- Design and Develop various application by integrating any of Servlets, JSPs, Swing and Applet using Database.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	2	2
CO2	3	3	2	2	2
CO3	2	3	3	2	2
CO4	1	3	3	2	1
CO5	2	3	3	3	2

ADVANCED DATABASE MANAGEMENT SYSTEM

SUBJECT CODE: 22PCSCC13

Course Outcomes

- Exposure for students to write complex queries including full outer joins, self-join, sub queries, and set theoretic queries.
- Know how of the file organization, Query Optimization, Transaction management, and database administration techniques.
- Elaborate the concept of Concurrency control and Failure Recovery.
- Illustrate concept of CC on B++ tree, Optimistic CC
- Use Modern database such as XML and relational databases.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	2	3
CO2	2	3	2	2	2
CO3	3	2	2	2	2
CO4	2	3	3	2	2
CO5	3	2	2	3	2

ALGORITHM LAB USING JAVA

SUBJECT CODE: 22PCSCP14

Course Outcomes

- To get Knowledge about Sorting Algorithm
- To acquire techniques about DFS and BFS Algorithmic approach

- To perform various Back track Programming techniques
- To acquire knowledge in Dijikstra' s Algorithm
- To become a better knowledge in algorithm.

Outcome Mapping

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	2	3
CO2	2	3	2	2	2
CO3	3	2	2	2	2
CO4	2	3	3	2	2
CO5	3	2	2	3	2

ADVANCED RDBMS LAB

SUBJECT CODE: 22PCSCP15

Course Outcomes

- Ability to use databases for building web applications.
- Gaining knowledge about the internals of a database system.
- To use of ER Modeling, Database Design & Normalization
- Implement the plan using Web Applications Using PHP & My SQL
- Analysis various Query Evaluation plans, Big Data Analysis.

Outcome Mapping

COS/POS	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	2	3
CO2	3	3	2	3	2
CO3	2	3	3	2	2
CO4	2	2	3	2	3
CO5	3	3	2	3	2

COMPILER DESIGN

SUBJECT CODE: 22PCSCE16-1.

Course Outcomes

- To provide sound knowledge in Lexical Analysis.
- To understand the importance of context-free Grammar.
- To explore knowledge in Semantic Analysis.
- To know the Variants of Syntax trees.
- To identify Code generations and code optimization.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	3	2
CO2	2	3	3	3	2
CO3	3	2	2	3	3
CO4	2	2	3	3	3
CO5	3	2	3	3	2

FUNDAMENTALS OF COMPUTER APPLICATION

SUBJECT CODE: 22PCSCO17-1

Course Outcomes

- Students are able to know about computer and basic applications of computer.
- Students are able to get knowledge about operating system.
- Students are able to aim at imparting a basic level appreciation Programme.
- Students can able to make spread sheets and its styles.
- Students get knowledge about Power point presentation.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	3	1
CO2	2	3	3	1	2
CO3	2	2	3	2	2
CO4	2	2	3	2	2
CO5	2	2	1	3	1

ADVANCED WEB TECHNOLOGY

SUBJECT CODE: 22PCSCC21

Course Outcomes

- Acquire knowledge on the concepts of .Net
- Implementing various HTML controls and Visual studio projects
- Able to develop applications using ADO .Net
- Acquire knowledge in web services
- Develop websites which contains adaptive web pages.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	2	3	2	2	2
CO2	2	2	2	3	3
CO3	3	3	2	3	3
CO4	3	2	3	3	3
CO5	3	1	3	3	2

DATA MINING AND BUSINESS INTELLIGENCE

SUBJECT CODE: 22PCSCC22

Course Outcomes

- Analyse the concept of Data mining, Data Warehouse, Business Intelligence and OLAP.
- Demonstrate data pre-processing techniques and application of association rule mining algorithms.

- Apply various classification algorithms and evaluation of classifiers for the given problem.
- Analyse data mining for various business intelligence applications for the given problem.
- Apply classification and regression techniques for the given problem.

Outcome Mapping

	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	3	3
CO2	3	3	3	2	2
CO3	3	3	3	2	1
CO4	2	3	3	3	1
CO5	2	3	3	3	2

DISTRIBUTED OPERATING SYSTEM

SUBJECT CODE: 22PCSCC23

Course Outcomes

- Acquire knowledge on the concepts advanced operating system and approaches.
- Implementing Lamport's Algorithm - Token Based Algorithms –Distributed Deadlock Detection Algorithm.
- Gaining knowledge Distributed Resource Management–Distributed File Systems.
- Acquire knowledge in Failure Recovery and Fault Tolerance.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	2	1
CO2	2	3	1	3	2
CO3	3	2	2	3	3
CO4	3	3	3	3	3
CO5	3	2	3	3	3

ADVANCED WEB TECHNOLOGIES LAB

SUBJECT CODE: 22PCSCP24

Course Outcomes

- Acquire Excellent knowledge and execute simple web service programs.
- Implementing various techniques in web services.
- Able to develop applications based web services from existing programs.
- Using SOAP techniques.
- Develop Client server based web Services.

Outcome Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	2	2
CO2	2	1	2	3	2
CO3	3	2	1	3	3
CO4	3	2	3	1	3
CO5	3	2	3	3	2

DATA MINING LAB USING R

SUBJECT CODE: 22PCSCP25

Course Outcomes

- Use different features of R Programming language.
- Preprocess the data for mining for any dataset.
- Determine association rules.
- Model the classifiers for classifying various dataset.
- Examine clusters from the available data.

Outcome Mapping

CO/PO	PO1	PO2	PO3	PO4	PO5
CO1	1	2	2	3	3
CO2	2	2	3	3	2
CO3	1	3	3	1	2
CO4	1	3	3	2	2
CO5	2	3	3	2	2

OPEN SOURCE COMPUTING

SUBJECT CODE: 22PCSCE26-2

Course Outcomes

- Students are able to understand the features of PHP.
- Students are able to develop the different applications using PHP.
- Students are able to demonstrate the applications using PHP with Mysql.
- Students are able to understand the concepts of Perl.

- Students are able to develop the applications using Perl.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	2	3
CO2	2	2	2	3	2
CO3	2	2	3	2	3
CO4	2	3	2	3	3
CO5	3	2	2	3	2

DIGITAL IMAGE PROCESSING

SUBJECT CODE: 22PCSCC31

Course Outcomes

- Analyze the concepts and fundamentals of Digital Image Processing
- Demonstrate Spatial domain and Frequency domain and its applications
- Analysis of residual based technique, Canny edge detection and their applications.
- Apply Image Compression techniques
- Use different features of Image Segmentation.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	2	2
CO2	2	1	2	3	2
CO3	3	2	2	3	3
CO4	3	2	3	1	3
CO5	3	2	3	3	1

MACHINE LEARNING

SUBJECT CODE: 22PCSCC32

Course Outcomes

- APPLY THE MACHINE LEARNING CONCEPTS IN REAL LIFE PROBLEMS.
- TO IMPLEMENT AND ANALYZE EXISTING LEARNING ALGORITHMS, INCLUDING WELL-STUDIED METHODS FOR CLASSIFICATION, REGRESSION, CLUSTERING.
- TO IDENTIFY MACHINE LEARNING TECHNIQUES SUITABLE FOR A GIVEN PROBLEM.
- TO DESIGN APPLICATION USING MACHINE LEARNING TECHNIQUES.
- TO SOLVE THE PROBLEMS USING VARIOUS MACHINE LEARNING TECHNIQUES.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	2	2
CO2	3	3	3	2	2
CO3	3	3	3	2	2
CO4	2	3	3	1	2
CO5	2	3	3	2	2

RESEARCH METHODOLOGY

SUBJECT CODE: 22PCSC33

Course Outcomes

- Students are able to demonstrate knowledge of research processes (reading, evaluating, and developing);
- Students are able to perform literature reviews using print and online databases
- Students are able to identify, explain, compare, and prepare the key elements of a research proposal/report.
- Students are able to compare and contrast quantitative and qualitative research
- Students are able to understand Concepts of Measurements.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	2	2
CO2	3	3	3	2	2
CO3	3	3	3	2	2
CO4	2	3	3	3	2
CO5	2	3	3	2	2

IMAGE PROCESSING LAB

SUBJECT CODE: 22PCSCP34

Course Outcomes

- Retrieve and display the image.
- Transform the domain from spatial to frequency.
- Apply suitable operators to detect the edge.
- Perform the process of compression and segmentation using certain methods
- Implementation the concept of erosion and dilation.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	3	3	2	3
CO2	3	3	2	2	1
CO3	3	2	3	2	2
CO4	3	3	2	2	1
CO5	3	3	3	3	3

MACHINE LEARNING LAB

SUBJECT CODE: 22PCSCP35

Course Outcomes

- Understand the mathematical and statistical perspectives of machine learning algorithms through python programming.
- Understand complexity of Machine Learning algorithms and their limitations;
- Understand modern notions in data analysis-oriented computing;
- Apply common Machine Learning algorithms in practice and implementing their own.
- Perform experiments in Machine Learning using real-world data.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	2	2	3	2	2
CO2	2	3	3	2	2
CO3	2	3	3	3	2
CO4	2	3	3	2	3
CO5	2	3	3	3	2

CLOUD COMPUTING

SUBJECT CODE: 22PCSCE36-1

Course Outcomes

- To get depth knowledge Cloud concepts and technologies
- To acquire various analytics service in cloud computing
- Students are able to understand Cloud applications
- To get knowledge in Python based cloud systems
- To acquire knowledge in cloud architecture and security.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	3	3
CO2	3	3	3	2	2
CO3	3	3	2	3	2
CO4	3	3	2	3	2
CO5	3	3	3	2	2

WEB SERVICES

SUBJECT CODE: 22PCSCO37-3

Course Outcomes

- Understand & Identify basic concept of Web Services & Web Service applications.
- Explain the Concept of Web services Architecture and its characteristics
- Student Learn about current trends in SOAP Web Services.
- Illustrate about UDDI Registries & Programming with UDDI.
- Elaborate about Virtualization, Virtual Machine (VM) Technology, Virtual Machine Monitor or Hypervisor in current trends.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	2	3
CO2	2	3	2	2	2
CO3	2	3	3	2	3
CO4	3	2	3	3	3
CO5	2	2	3	2	2

ADVANCED COMPUTER NETWORKS

SUBJECT CODE: 22PCSCC41

Course Outcomes

- Analysis a basic concept of Network Hardware, software and different types of transmission techniques.
- Design, Implement & Evaluate Wireless transmission & Communication Satellite.

- Communicate Effectively the Medium Access Layer & Data Communication etc.
- Recognize the principal of Routing Algorithm & Congestion Control Algorithm.
- Elaborate advanced network concept of Network Security & Cryptography.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	2	2	2	2	3
CO2	2	2	2	3	2
CO3	2	2	3	2	3
CO4	2	3	2	3	3
CO5	3	2	2	3	2

BLOCKCHAIN TECHNOLOGY

SUBJECT CODE: 22PCSCC42

Course Outcomes

- Contentedly discuss and describe the history, types and applications of Block chain
- Gains familiarity with cryptography and Consensus algorithms.
- Create and deploy projects using Web3j and design block chain based applications.
- Implement an ICO on Ethereum
- Design block chain based application with Swarm and IPFS.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	2	3
CO2	2	2	3	2	2
CO3	3	2	2	2	2
CO4	3	3	2	2	2
CO5	3	2	3	2	3

MOBILE COMPUTING

SUBJECT CODE: 22PCSCE43-1

Course Outcomes

- To understand basic concepts of Mobile Communication.
- To analyze next generation Mobile Communication System.
- To understand network and transport layers of Mobile Communication.
- Classify different types of mobile telecommunication systems
- Analyze various protocols of all layers for mobile and ad hoc wireless communication networks.

Outcome Mapping

COs / POs	PO1	PO2	PO3	PO4	PO5
CO1	3	2	2	2	2
CO2	3	2	2	2	3
CO3	3	2	2	3	2
CO4	3	3	2	2	2
CO5	3	2	2	1	1

PROJECT (Industrial / Research)

SUBJECT CODE: 22PCSCD44

Course Outcomes

- Discover the most thrust areas in the field of Information Technology.
- Develop a complete project for a particular problem domain.
- Identify analyses, design and implement any IT related projects.
- Compare and contrast existing solutions for developing a project.
- Demonstrate an ability to work in teams and manage with good communication skill.

Outcome Mapping

COs/POs	PO1	PO2	PO3	PO4	PO5
CO1	3	3	2	3	3
CO2	3	3	3	2	3
CO3	3	3	3	3	2
CO4	3	3	2	3	3
CO5	3	3	2	3	3