DEPARTMENT OF COMPUTER SCIENCE PG PROGRAM OUTCOME AND COURSE OUTCOME

Krishnasamy College of Science, Arts & Management for Women, Cuddalore.

Program and Course Outcome

Program Outcome:

- The objective is to motivate the students in emerging technologies and acquire knowledge in various domains.
- Career options after BSC and MSC students can apply the optical & practical tools /techniques as Computer programmer ,Computer system analyst, System administrator, Computer support service specialist, higher studies like MSC, Projects in IT Companies.
- As software developers for designing, installing, testing & maintenance of software
- Technical writer/Developers
- Web Designer
- Software developers
- Testing
- Framework

SEMESTER : I

22PCSCC11: DESIGN AND ANALYSIS OF ALGORITHMS

COURSE OBJECTIVES

1. Learning basic concepts of Algorithm.
2. Method of sorting algorithms analyzed.
3. To Analyze Greedy Algorithm and Knapsack Problem.
4. To analyze Dynamic Programming.
5. To learn effective problem solving in Computing applications and analyze the algorithmic procedure to determine the computational complexity of algorithms.

COURSE OUTCOMES

At the end of the course, the student will be able to

1) Acquire knowledge on the concepts of Algorithm
2) Implementing various Algorithmic and sorting approach
3) Able to develop Greedy Algorithm.
4) Acquire knowledge in Dynamic Programming.
5) Develop Back tracking methods and its applications.

22PCSCC12: ADVANCED JAVA PROGRAMMING

COURSE OBJECTIVES

1) To get familiar with the concept of packages, interface.
2) Able to understand Inheritance and Exception handling in java.
3) To learn the concept of Graphical User Interface (GUI).
4) Analyse Network Programming, and database manipulation.
5) Student will be able to develop web application using Java Servlet and Java Server Pages technology.

COURSE OUTCOMES

At the end of the course, the student will be able to

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

22PCSCC13: ADVANCED DATABASE MANAGEMENT SYSTEM

COURSE OBJECTIVES

1) To understand the basic concepts and terminology related to DBMS and Relational Database Design.
2) To the design and implement Distributed Databases.
3) To apply normalization techniques to improve database design.
4) To understand advanced DBMS techniques to construct tables and write effective queries, forms, and reports.
5) Analyze a T/O based techniques for designing the database.

COURSE OUTCOMES

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

22PCSCP14: ALGORITHM LAB USING JAVA

COURSE OBJECTIVES

1) Implement Sorting algorithm methods.
2) Analyze DFS and BFS Algorithm methods.
3) To evaluate Back Tracking and Greedy Algorithm.
4) Implement Dijkstra's Algorithm.
5) To Develop Dynamic Programming.

COURSE OUTCOMES

1) To get Knowledge about Sorting Algorithm
2) To acquire techniques about DFS and BFS Algorithmic approach
3) To perform various Back track Programming techniques
4) To acquire knowledge in Dijkstra s Algorithm
   To become a better knowledge in algorithm

22PCSCP15: ADVANCED RDBMS LAB

COURSE OBJECTIVES

1) To explore the features of a Database Management Systems.
6. To interface a database with front end tools.
7. To understand the internals of a database system.
8. To use of different Evaluation Plans.
9. To interface of Concurrency & Transactions & Big Date Analysis Using Hadoop.

COURSE OUTCOMES

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

22PCSCE16-1: COMPILER DESIGN

COURSE OBJECTIVES

1) Discover principles, algorithms and techniques that can be used to construct various phases of compiler.
2) Acquire knowledge about finite automata and regular expressions.
3) Learn context free grammars, compiler parsing techniques.
4) Explore knowledge about Syntax Directed definitions and translation scheme.
5) Understand intermediate machine representations and actual code generation.

COURSE OUTCOMES

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

22PCSCO17-1: FUNDAMENTALS OF COMPUTER APPLICATION

COURSE OBJECTIVES

know about computer and basic applications of computer.
To get knowledge about operating system.
To aim at imparting a basic level appreciation Programme.
To Understand word processing.
To develop Word spread sheet and power point Presentation.

COURSE OUTCOMES

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

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SEMESTER:II

22PCSCC21: ADVANCED WEB TECHNOLOGY

COURSE OBJECTIVES

1) Explore the backbone of webpage creation by developing .NET skill.
2) Enrich knowledge about HTML control and web control classes.
3) Provide depth knowledge about ADO.NET
4) Understand the need of usability, evaluation methods for web services.
5) Developing Component based Programming.

COURSE OUTCOMES

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

22PCSCC22: DATA MINING AND BUSINESS INTELLIGENCE

COURSE OBJECTIVES

1) Demonstrate an understanding of the importance of data mining.
2) Understand principles of business intelligence.
3) Organize and prepare the data needed for data mining using pre-processing techniques.
4) Perform exploratory analysis of the data to be used for mining.
5) Implement the appropriate data mining methods like classification, clustering or Frequent Pattern mining on large data sets.

COURSE OUTCOMES

1) Analyse the concept of Data mining, Data Warehouse, Business Intelligence and OLAP.
2) Demonstrate data pre-processing techniques and application of association rule mining algorithms.
3) Apply various classification algorithms and evaluation of classifiers for the given problem.
4) Analyse data mining for various business intelligence applications for the given problem.
5) Apply classification and regression techniques for the given problem.

22PCSCC23 : DISTRIBUTED OPERATING SYSTEM

COURSE OBJECTIVES

1) To study Distributed operating system concepts.
2) To understand hardware, software and Communication in Distributed OS.
3) To learn the distributed resource management components.
4) Practices to learn concepts of OS and Program the principles of Operating Systems.
5) To Learn Linux Operating System.

COURSE OUTCOMES

1) Acquire knowledge on the concepts advanced operating system and approaches.
2) Implementing Lamport's Algorithm - Token Based Algorithms –Distributed Deadlock Detection Algorithm.
3) Gaining knowledge Distributed Resource Management–Distributed File Systems.
4) Acquire knowledge in Failure Recovery and Fault Tolerance.
5) To know the Features of Android OS, Ubuntu, Google ChromeOS and Linux operating systems.

22PCSCP24: ADVANCED WEB TECHNOLOGIES LAB

COURSE OBJECTIVES

1) Create simple Web service Programs.
2) Develop windows application based web services.
3) Accessing Database in Web services.
4) To create an application that simulates sending a SOAP message.
5) Develop a Web intranet/internet based Web Service Client.

COURSE OUTCOMES

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

22PCSCP25: DATA MINING LAB USING R

COURSE OBJECTIVES

1) To introduce the concept of data Mining as an important tool for enterprise data management and as a cutting-edge technology for building competitive advantage.
2) To enable students to effectively identify sources of data and process it for data mining.
3) To learn how to gather and analyze large sets of data to gain useful business understanding through the R language.
4) To impart skills that can enable students to approach business problems.
5) To analytically identifying opportunities to derive business value from data.

COURSE OUTCOMES

1) Use different features of R Programming language.
2) Pre process the data for mining for any data set.
3) Determine association rules.
4) Model the classifiers for classifying various data set.
5) Examine clusters from the available data.

22PCSCE26-2: OPEN SOURCE COMPUTING

COURSE OBJECTIVES

1) To understand the features of PHP.
2) To develop the different applications using PHP.
3) To demonstrate the applications using PHP with Mysql.
4) To understand the concepts of Perl.
5) To develop the applications using Perl.

COURSE OUTCOMES

1) Students are able to understand the features of PHP.
2) Students are able to develop the different applications using PHP.
3) Students are able to demonstrate the applications using PHP with Mysql.
4) Students are able to understand the concepts of Perl.
5) Students are able to develop the applications using Perl.

2PHUMR27: HUMAN RIGHTS

COURSE OBJECTIVES

1. To understands the conceptual background of Human Rights.
2. To study international and regional norms and institutional mechanisms of Human Rights.
3. To know the international concern for Human Rights.
4. To explores the emerging issues in international human rights.
5. To study the Classification of Human Rights.

COURSE OUTCOMES

At the end of the course, the student

1) will have knowledge about the conceptual background of Human Rights.
2) can apprise on International Human Rights norms and mechanisms.
3) can understand the emerging dimensions of Human Rights in international forum.
4) can explain about the Third Generation Human Rights
5) can discusses about Right to Clean Environment.

SEMESTER – III

22PCSCC31: DIGITAL IMAGE PROCESSING

COURSE OBJECTIVES

1) To provide complete knowledge on Digital Image Processing methods
2) Able to Understand image processing methods in Spatial domain and Frequency domain
3) To Understand Edge detection, Edge features and their applications.
4) To Provide concepts of Image Compression Models
5) Enable the students to understand the concepts and implement them empirically.

COURSE OUTCOMES

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

22PCSCC32: MACHINE LEARNING

COURSE OBJECTIVES

LO1	To introduce students to the basic concepts and techniques of Machine Learning.
LO2	To understand the regression methods, regularization methods.
LO3	To Analyze clustering methods and metrics.
LO4	To discover patterns in data and then make predictions based on often complex patterns to answer business questions, detect and analyze trends and help solve problems.
LO5	To introduce students to the state-of-the-art concepts and techniques of Machine Learning.

Course Outcomes

CO1	Apply the machine learning concepts in real life problems.
CO2	To Implement and analyze existing learning algorithms, including well-studied methods for classification, regression, clustering.
CO3	To Identify machine learning techniques suitable for a given problem.
CO4	To Design application using machine learning techniques.
CO5	To Solve the problems using various machine learning techniques

22PCSC33: RESEARCH METHODOLOGY

COURSE OBJECTIVES

LO1	To demonstrate the knowledge of research processes (reading, evaluating, and developing);
LO2	To perform literature reviews using print and online databases;
LO3	To identify, explain, compare, and prepare the key elements of a research proposal/report;
LO4	To compare and contrast quantitative and qualitative research
LO5	To analyze Measurement concepts

Course Outcomes

CO1	Students are able to demonstrate knowledge of research processes (reading, evaluating, and developing);
CO2	Students are able to perform literature reviews using print and online databases;
CO3	Students are able to identify, explain, compare, and prepare the key elements of a research proposal/report;
CO4	Students are able to compare and contrast quantitative and qualitative research
CO5	Students are able to understand Concepts of Measurements.

22PCSCP34: IMAGE PROCESSING LAB

COURSE OBJECTIVES

LO1	To impart skills on the processing of digital images.
LO2	To learn the transformation of images from spatial domain to frequency domain.
LO3	To perform the edge deduction techniques.
LO4	To gain knowledge about compressing the images using suitable techniques.
LO5	To know the segmentation methods

Course Outcomes

CO1	Retrieve and display the image.
CO2	Transform the domain from spatial to frequency.
CO3	Apply suitable operators to detect the edge.
CO4	Perform the process of compression and segmentation using certain methods
CO5	Implementation the concept of erosion and dilation

22PCSCP35: MACHINE LEARNING LAB

COURSE OBJECTIVES

LO 1	To get an overview of the various machine learning techniques.
LO 2	To demonstrate python and its applications
LO 3	To familiarize various machine learning software libraries and data sets publicly available.
LO 4	To develop machine learning based system for various real-world problems.
LO 5	The knowledge of using machine learning to make predictions in a scientific computing environment

Course Outcomes

CO1	Understand the mathematical and statistical perspectives of machine learning algorithms through python programming.
CO2	Understand complexity of Machine Learning algorithms and their limitations;
CO3	Understand modern notions in data analysis-oriented computing;
CO4	Apply common Machine Learning algorithms in practice and implementing their own;
CO5	Perform experiments in Machine Learning using real-world data.

22PCSCE36-1: CLOUD COMPUTING

COURSE OBJECTIVES	
LO 1	The objective of this course is to provide students with the comprehensive and in-depth knowledge of Cloud Computing concepts
LO 2	Introducing and researching state-of-the-art in Cloud Computing fundamental issues
LO 3	To Understand Cloud Computing architecture and applications.
LO 4	To expose the students to frontier areas of Cloud Computing and information systems.
LO 5	To provide sufficient foundations to enable further study and research.

Course Outcomes	
CO1	To get depth knowledge Cloud concepts and technologies
CO2	To acquire various analytic service in cloud computing
CO3	Students are able to understand Cloud applications
CO4	To get knowledge in Python based cloud systems
CO5	To acquire knowledge in cloud architecture and security

SEMESTER - IV

22PCSCC41: ADVANCED COMPUTER NETWORKS

COURSE OBJECTIVES

LO 1	Focusing on advanced topics and is a must for anyone interested in doing research in computer networks.
LO 2	To build a solid foundation in computer networks concepts and design
LO 3	The course will expose students to the concepts of traditional as well as modern day computer networks –Wireless transmissions, Communication Satellites.
LO 4	The student understand concept of like Data Link Layer in the Internet & Medium Access Layer.
LO 5	Student's study this paper knows about Internet Transport Protocol (ITP), Network Security and Cryptography.

Course Outcomes

CO1	Analysis a basic concept of Network Hardware, software and different types of transmission techniques.
CO2	Design, Implement & Evaluate Wireless transmission & Communication Satellite.
CO3	Communicate Effectively the Medium Access Layer & Data Communication etc.
CO4	Recognize the principal of Routing Algorithm & Congestion Control Algorithm
CO5	Elaborate advanced network concept of Network Security & Cryptography

22PCSCC42: BLOCKCHAIN TECHNOLOGY

COURSE OBJECTIVES

LO1	To understand the history Blockchain
LO2	To Understand types and applications of Blockchain
LO3	To acquire knowledge about cryptography and consensus algorithms.
LO4	Deploy projects using Web and design.
LO5	To Understand blockchain based Security issues.

Course Outcomes

CO1	Contentedly discuss and describe the history, types and applications of Block chain
CO2	Gains familiarity with cryptography and Consensus algorithms.
CO3	Create and deploy projects using Web3j and design block chain based applications.
CO4	Implement an ICO on Ethereum
CO5	Design block chain based application with Swarm and IPFS

22PCSCE43-1: MOBILE COMPUTING

COURSE OBJECTIVES

LO1	To Introduce the concept of wireless devices with signal, Antenna, Radio Frequencies, Signal Propagation.
LO2	To Introduce wireless communication and networking principles
LO3	To know the connectivity of cellular networks, Wireless LAN, GSM, CDMA.
LO4	To introduce the WAP Architecture, MANET and Routing
LO5	To analyze next generation Mobile Communication System

Course Outcomes

CO1	To understand basic concepts of Mobile Communication.
CO2	To analyze next generation Mobile Communication System.
CO3	To understand network and transport layers of Mobile Communication.
CO4	Classify different types of mobile telecommunication systems
CO5	Analyze various protocols of all layers for mobile and ad hoc wireless communication networks.

22PCSCD44: PROJECT (INDUSTRIAL / RESEARCH)

COURSE OBJECTIVES

LO1	To provide insights in to rea l world challenges and problem those required IT Related solutions.
LO2	To empower the students to bring out the IT related solutions for the requirements.
LO3	To expose the students to have a broad idea of literature related to the Project domain.
LO4	To enable students to use all concepts of IT in creating a solution for a problem.
LO5	To improve the team building, communication and management skills of the students

Course Outcomes

CO1	Discover the most thrust areas in the field of Information Technology.
CO2	Develop a complete project for a particular problem domain.
CO3	Identify analyses, design and implement any IT related projects.
CO4	Compare and contrast existing solutions for developing a project.
CO5	Demonstrate an ability to work in teams and manage with good communication skill.

DEPARTMENT OF COMPUTER SCIENCE UG PROGRAM AND COURSE OUTCOME

SEMESTER :I
22UCSCC13: FUNDAMENTALS OF COMPUTERS

COURSE OBJECTIVES

1. An understanding of basic concepts of computer science.
2. An introduction to the fundamentals of hardware, software and programming.
3. To understand the concept of Number System.
4. To know the types of memory for storage purpose.
5. To understand the types of input devices to feed the data for action.

COURSE OUTCOMES

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

22UCSCC14: PROGRAMMING IN C

COURSE OBJECTIVES

1. To Provide complete knowledge of C language
2. Students will be able to develop logics which will help them to create programs,applications in C
3. By learning the basic programming constructs they can easily switch over to any other language in future.
4. To understand the concept of function types
5. To acquire knowledge about pointers.

COURSE OUTCOMES

1. To understand the concepts of data types and operators
2. To analyze the usages of the various programming constructs and functions
3. To interpret the importance of arrays and pointers
4. To identify the purpose of structures, unions, macros and bit fields
5. To develop programs using dynamic memory allocation and data file operations

22UCSCP15: PROGRAMMING IN C LAB
COURSE OBJECTIVES

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

COURSE OUTCOMES

1) Demonstrate knowledge on C programming constructs.
2) Study all the Basic Statements in C Programming.
3) Practice the usage of branching and looping statements.
4) Apply string functions and arrays usage.
5) Analysis the use of files and structures.

22UMATA01: MATHEMATICS - I

COURSE OBJECTIVES

To acquire knowledge on finding roots of the Transcendental and Algebraic equations by Numerical methods, applications of matrices and Numerical methods for solving Simultaneous Linear equations. To understand the Computations of Eigen values ,Eigen vectors, differential calculus ,the evaluation of double and Triple integrals for finding Area and Volume.

COURSE OUTCOMES

1) On successful completion of the course, the students will be able to
2) Attain knowledge on finding Approximate root for polynomial equations using Numerical methods.
3) Develop the skills of finding solutions of Simultaneous Linear equations.
4) Adopt techniques in solving problems involving Matrices
5) Provide skills on finding curvature and radius of curvature in Cartesian and polar co-ordinates.
6) Understand the applications of double and Triple integration in real life situation.

SEMESTER - II

22UCSCC23:PROGRAMMING WITH C++

COURSE OBJECTIVES

This course enables the students to know about:

1. Object Oriented concepts,C++ language features.
2. Classes, Objects,Inheritance, and Polymorphism.
3. Functions, Constructors, Streams and Files.

COURSE OUTCOMES

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

22UCSCP24: PROGRAMMING WITH C++ LAB

COURSE OBJECTIVES

The objectives of the course are to have students :

1) Identify and practice the object-oriented programming concepts and techniques,
2) Practice the use of C++ classes and class libraries, arrays, vectors, inheritance and file I/O stream concepts.

COURSE OUTCOMES

Ability to:

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

22UMATA02: MATHEMATICS - II

COURSE OBJECTIVES

To expand trigonometric functions, solving partial differential equations and learn about vector differentiation and integration, also too familiar with physical interpretation of divergence and curl of a vector. Learning Finite differences and applications of Interpolations in real life situations.

COURSE OUTCOMES

1) On successful completion of the course, the students will be able to
2) Attain knowledge on finding the expansions of trigonometric functions and concept of hyperbolic and inverse hyperbolic functions.
3) Provide a basic knowledge of Partial Differential equations and develops knowledge on handle practical problems.
4) Adopt techniques in solving problems involving vector and scalar functions

5) Provide skills on finding derivatives and gradients on vector differentiation and Integration.
6) Understand the applications of differentiation and integration in real life situation.

22UCSCE26 -1: DIGITAL LOGIC FUNDAMENTALS

COURSE OBJECTIVES

To Understand the basic concepts of Digital Circuits and Logic design of Computers.

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.

22UCSCE26-2: FUNDAMENTALS OF ALGORITHMS

COURSE OBJECTIVES

1) To know how to analyze the performance of algorithms.
2) To understand how the choice of data structures and algorithm design methods impacts the performance of programs.
3) To solve problems using algorithm design methods such as the greedy method, divide and conquer, dynamic programming, and backtracking.

COURSE OUTCOMES

1) To learn the method of analyzing algorithms.
2) To understand Recursion and backtracking principles.
3) To gain knowledge on the tree and graph algorithms.
4) To understand the sorting and searching algorithms.
5) To learning the working principles of Greedy, Divide-and-Conquer and Dynamic programming algorithms.

22UCSCE26-3: SYSTEM SOFTWARE

COURSE OBJECTIVES

1) To understand the relationship between system software and machine architecture.
2) To know the design and implementation of assemblers
3) To know the design and implementation of linkers and loaders.
4) To have an understanding of macro processors.
5) To have an understanding of system software tools.

COURSE OUTCOMES

1. Understand the relationship between system software and machine architecture.
2. Know the design and implementation of assemblers
3. Know the design and implementation of linkers and loaders.
4. Understanding of macro processors and its implementation.
5. Understanding of system software tools

SEMESTER:III

22UCSCC33 : PROGRAMMING IN JAVA

COURSE OBJECTIVES

1. Understand fundamentals of programming such as variables, conditional and iterative execution, methods, etc.
2. Understand fundamentals of object-oriented programming in Java, including defining classes, invoking methods, using class libraries, etc.
3. Be aware of the important topics and principles of software development.
4. Have the ability to write a computer program to solve specified problems.
5. Be able to use the Java SDK environment to create, debug and run simple Java programs.

COURSE OUTCOMES

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

22UCSCP34: PROGRAMMING IN JAVA LAB

COURSE OBJECTIVES

1. The main objective of JAVA Programming Lab is to provide the students a strong foundation on programming concepts and its applications through hands-on training.
2. To practice the Object, Class, inheritance and recursion concepts in Java programming.
3. To implement and gain knowledge in packages, interfaces, exception and thread handling.
4. To write programs to implement graphics, applets and event handling.
5. To implement AWT classes and windows fundamentals.

COURSE OUTCOMES

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

22UCSCE36-2 : COMPUTER GRAPHICS

COURSE OBJECTIVES

1. To understand the fundamentals about Computer Graphics.
2. To familiar with Scanners and I/O devices.

To be exposed to 2D and 3D Transformations and clipping

COURSE OUTCOMES:

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

22USTAA01: STATISTICS-I

To understand and computing statistical Methods by which to develop the programming Skills.

22UCSCS38 : FUNDAMENTALS OF DATA STRUCTURES

Understand the basic concept of algorithms.

COURSE OBJECTIVES

1. To introduce the various data structures and their implementations.
2. Evaluate the performance of various sorting algorithms.
3. Understanding the stack and queues
4. Evaluate the trees and sorting methods.

COURSE OUTCOMES:

1. Understand basic data structures such as arrays, linked lists, stacks and queues
1. Describe the hash function and concepts of collision and its resolution methods
2. Solve problem involving graphs, trees and heaps
3. Apply Algorithm for solving problems like sorting, searching, insertion and deletion of data
4. Demonstrate advantages and disadvantages of specific algorithms and data structures.

SEMESTER IV

22UCSCC43 : PYTHON PROGRAMMING

COURSE OBJECTIVES

1. Describe the core syntax and semantics of Python programming language.
1. Discover the need for working with the strings and functions.
2. Illustrate the process of structuring the data using lists, dictionaries, tuples and sets.
3. Understand the usage of Files and Graphics.
4. Understand the usage of sets and Dictionaries, Recursive Functions.

COURSE OUTCOMES

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

22UCSCP44 : PYTHON PROGRAMMING LAB

COURSE OBJECTIVES

1. To implement the python programming features in practical applications.
2. To write, test, and debug simple Python programs.
3. To implement Python programs with conditionals and loops.
4. Use functions for structuring Python programs.
5. Represent compound data using Python lists, tuples, sets, dictionaries, turtles, Files and modules.

COURSE OUTCOME:

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

22USTAA02: STATISTICS-II

COURSE OBJECTIVES

To understand and computing statistical Methods by which to develop the programming Skills

22UCSCS48: SOFTWARE ENGINEERING

COURSE OBJECTIVES

1. To introduce the software development life cycle models.
2. To introduce concepts related to Requirements engineering, modelling.
3. To provide an insight into design engineering.
4. To understand user interface design and quality assurance.
5. To know the testing strategies.

COURSE OUTCOME:

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

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

22UCSCC51 : DATA COMMUNICATION NETWORKS

COURSE OBJECTIVES

1. To learn the Network concepts in Computers and its methods to communicate the data.
2. To Study the OSI Model and practice the layers
3. To Understand the importance of Physical Layers and Media.
4. To Study the Guided and Unguided media with concepts of Switching.
5. To learn the Error detection & Correction Codes and solve the problems.

COURSE OUTCOME:

1. Learn the basic of Computer Networks and Internet.
2. Describe the OSI Model and practice the layers
3. Understanding the importance of Physical Layers and Media.
4. Describing Study the Guided and Unguided media with concepts of Switching.
5. Understanding the Error detection & Correction Codes and solve the problems.

22UCSCC52 : COMPUTER SYSTEM ARCHITECTURE
COURSE OBJECTIVES

1. To learn functions of digital circuits and data representation.
2. To understand basic computer, memory organization and design.
3. To gain knowledge on CPU, Memory, Pipeline, Vector and Multi-Processors.

COURSE OUTCOME:

1. Gain knowledge on Digital circuits and Data representation.
2. Analyze some of the design issues in terms of speed, technology, cost, performance.
3. Understand the architecture and functionality of central processing unit.
4. Exemplify in a better way the I/O and memory organization.

22UCSCC53 : WEB TECHNOLOGY
COURSE OBJECTIVES

To understand the fundamental concepts and role of Web Technology.

1. To learn the Process of CSS.
2. To understand the web pages.
3. To gain insight on script objects.
4. To Know Java Script libraries.

COURSE OUTCOME:

1. Understand the structure of the documents in Web.
2. Remember and understand the table handling tags.
3. Understand and organize CSS.
4. Implement scripts in web page.
5. Evaluate script objects

22UCSCC54 : RELATIONAL DATABASE MANAGEMENT SYSTEM
COURSE OBJECTIVES

1. Gain a good understanding of the architecture and functioning of Database Management Systems as well as associated tools and techniques.
2. Understand and apply the principles of data modelling using Entity Relationship and develop a good database design.

3. Understand the use of Structured Query Language (SQL) and its syntax.
4. Apply Normalization techniques to normalize a database.
5. Understand the need of transaction processing and learn techniques for controlling the consequences of concurrent data access.

COURSE OUTCOME:

1. Describe the fundamental elements of relational database management systems.
2. Explain the basic concepts of relational data model, entity-relationship model, relational database design, relational algebra and SQL.
3. Design ER-models to represent simple database application scenarios
4. Improve the database design by normalization.
5. Study the core concepts of DBMS.

22UCSCP55 : WEB TECHNOLOGY LAB

COURSE OBJECTIVES

1. To impart Practical Training in Control panel tools.
2. Familiarize with HTML Tags.
3. Build programs using Java script.
4. Provide knowledge on working with events and methods

COURSE OUTCOME:

1. Study all the Basic tools.
2. Practice the usage of web page creation and usable objects.
3. Apply various effects on webpage.
4. Analysis the use of java script and HTML code.
5. Understand the user-defined functions and implement in Java script.

22UCSCP56: RELATIONAL DATABASE MANAGEMENT SYSTEM LAB
COURSE OBJECTIVES

1. To have a glimpse on the basic sql operations.
2. To develop various sql queries.
3. To understand the aggregate operations.

4. To have competence in joins.
5. To have knowledge about views.

COURSE OUTCOME:

1. Students get practical knowledge on designing and creating relational database systems.
2. Understand various advanced queries execution such as relational constraints, joins, set operations, aggregate functions, trigger, views and embedded SQL.
3. Use of various software to design and build ER Diagrams, UML, Flow chart for related database systems.
4. Students will be able to design and implement database applications on their own.
5. Will be able to create views.

22UCSCE58-1 : DATA MINING AND WAREHOUSING

COURSE OBJECTIVES

1. To introduce data mining principles and techniques.
2. To introduce the concepts of Data Warehousing, difference between database and data warehousing.
3. To describe and demonstrate basic data mining algorithms, methods, tools,
4. To describe ETL Model and the Star Schema to design a Data Warehouse.
5.

COURSE OUTCOMES:

1. To understand the fundamentals of Data mining.
2. To perform Association rule mining in large data set.
3. To learn the classification and prediction techniques.
4. To gain knowledge on Data warehousing fundamentals.
5. To understand how to use Data warehousing tools.

SEMESTER – VI
22UCSCC61 : OPERATING SYSTEM

COURSE OBJECTIVES

To understand the fundamental concepts and role of Operating System.

1. To learn the Process Management and Scheduling Algorithms
2. To understand the Memory Management policies
3. To gain insight on I/O and File management techniques
4.

COURSE OUTCOMES

1. Understand the structure and functions of Operating System
2. Compare the performance of Scheduling Algorithms at CPU and Disk
3. Analyze resource memory management techniques
4. Examine the storage management Techniques
5. Study the fundamental concepts of I/O systems, system protection and security.

22UCSCC62 : DOTNET PROGRAMMING
COURSE OBJECTIVES

1. To enable students to learn IDE of Microsoft visual studio .Net
2. To understand the functioning of various controls
3. To gain skills on Graphical User Interface Controls and Databases
4. To Learn data access mechanism provided .net.
5. To Create a web application using .net.

COURSE OUTCOMES

1. Illustrate the usage of validation Controls, Ad Rotator Control
2. Display required output using controls
3. Illustration of file uploading methods
4. Interpret interactive design using web forms
5. Develop real time applications using database

22UCSCC63 : IOT AND ITS APPLICATIONS

COURSE OBJECTIVES

1. To learn the concepts of IoT and its protocols.
2. To learn how to analysis the data in IoT.
3. To develop IoT infrastructure for popular applications.
4. To introduce the Python Scripting Language which is used in many IoT devices
5. To report about the IoT privacy, security and vulnerabilities solution.

COURSE OUTCOMES

1. To understand the fundamentals of Internet of Things.
2. To know the basics of communication protocols and the designing principles of Web connectivity.
3. To gain the knowledge of Internet connectivity principles.
4. Designing and develop smart city in IoT.
5. Analyzing and evaluate the data received through sensors in IOT.

22UCSCC64 : MOBILE COMPUTING

COURSE OBJECTIVES

1. To understand the fundamental concepts and role of mobile computing.
2. To learn the Media Access control and Telecommunication system.
3. To understand the basic concepts of satellite and broadcasting systems.
4. To gain knowledge about wireless LAN.
5. To learn functionality of network and transport layer in mobile computing.

COURSE OUTCOME:

1. Understand the fundamental concepts and role of mobile computing.
2. Know the Media Access Control management and GSM and Bluetooth concepts.
3. Attain the knowledge in satellite systems, audio and video broadcasting systems.
4. Understand the wireless LAN and Bluetooth concepts and functionalities.
5. Know the functionalities of network and transport layer.

22UCSCP65 : LINUX OPERATING SYSTEM LAB
COURSE OBJECTIVES

1. To learn Process management and scheduling.
2. To understand the concepts and implementation of memory management policies.
3. To understand the various issues in Inter Process Communication.

Course Outcomes

1. Understand the process management policies and scheduling process by CPU.
2. Analyze the memory management and its allocation policies.
3. Implement page replacement algorithms
4. Evaluate the requirement for process synchronization.
5. Understand the main concepts of operating system.

22UCSCP66: DOTNET PROGRAMMING LAB
COURSE OBJECTIVES

1. To learn about basic features of ASP.NET and its controls.
2. To create an ASP.NET application using standard .NET Controls.
3. To gain knowledge about E-Mail registration.
4. To implement SQL connection.
5. To get skill about controls in ASP.NET

COURSE OUTCOMES:

1. Learners will be able to design web applications using ASP.NET.
2. Learners will be able to use ASP.NET controls in web applications.
3. Learners will be able to create database driven ASP.NET web applications and web services.
4. Can Design various applications.
5. Having skills about Ad Rotator Control

22UCSCE68-3: CLOUD COMPUTING
COURSE OBJECTIVES

1. To understand the fundamental concepts and role of cloud computing.
2. To learn the Media Types and working method of cloud computing.
3. To understand the concepts of cloud computing architecture.
4. To gain knowledge about virtualization in cloud computing.
5. To learn storage, security and different applications such as Microsoft, Google and Amazon.

COURSE OUTCOME:

1. Understand the fundamental concepts of cloud computing.
2. Know the cloud computing types and working models.
3. Attain the knowledge in cloud computing architecture and reference models.
4. Understand the virtualization concepts in cloud computing.
5. Know the storage m security and different vendor's applications in cloud computing.

213 - BACHELOR OF COMPUTER APPLICATONS (BCA)
Under CBCS
(Applicable to the candidates admitted in Affiliated Colleges in the academic year 2022 -2023 ONLY)

Program and Course Outcome

Program Outcome:

- The objective is to motivate the students in emerging technologies and acquire knowledge in various domains.
- Career options after BCA the students can apply the optical & practical tools /techniques as Computer programmer ,Computer system analyst, System administrator, Computer support service specialist, higher studies like MCA, Projects in IT Companies.

- ❖ As software developers for desiging, installing, testing & maintenance of software
- ❖ Technical writer/Developers
- ❖ Web Designer

Course Outcome:

Subject Code & Subject Title: 22UBCAC13 & PROGRAMMING IN C

COURSE OBJECTIVES

- To understand simple algorithms
- To understand language constructs
- To understand and develop programming skills in C.
- To understand the basic concepts of decision making and looping statements.
- To understand the concepts of arrays, structures, union, pointers and files.

COURSE OUTCOMES

- The Student will be able to understand the concepts of Constants, Variables, and Data Types, Operators and Expressions
- The Student will be able to understand the concepts of Managing Input and Output Operations, Decision Making and Branching, Decision Making and Looping.
- The Student will be able to understand the concepts of Arrays, Character Arrays and Strings, User Defined Functions.
- The Student will be able to understand the concepts of Structure and Unions, Pointers, File Management in C.
- The Student will be able to understand the concepts of Fundamental Algorithms, Factoring Methods.

Subject Code & Subject Title: 22UBCAC14 & DIGITAL COMPUTER FUNDAMENTALS

COURSE OBJECTIVES

- Develop an understanding of digital circuit design and analysis.
- Learn design techniques for working with digital electronic devices, and their application to solving problems.
- Learn analysis skills to effectively report on the design, analysis and data of projects so that others can understand their methodology and results.
- Become familiar with digital design, analysis and simulation tools.
- Develop effective written communication skills using various media tools.

COURSE OUTCOMES

After completing the Course successfully, the student will be able to

- Identify the logic gates and their functionality.
- Perform number conversions from one system to another system.
- Design basic electronic circuits (combinational circuits).
- Perform a comparative analysis of the components of different memory Units.
- Perform number conversions.

Subject Code & Subject Title: 22UBCACP15 & PROGRAMMING IN C LAB

COURSE OBJECTIVES

- Apply the specification of syntax rules for numerical constants and variables, data types.
- Usage of Arithmetic operator, Conditional operator, logical operator and relational operators and other C constructs.
- Write C programs using decision making, branching, looping constructs
- Apply and Write C programs to implement one dimensional and two dimensional arrays
- Writing programs using functions

COURSE OUTCOMES

- Read, understand and trace the execution of programs written in C language.
- Write the C code for a given algorithm.
- Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
- Write programs that perform operations using derived data types.
- Know concepts in problem solving

Subject Code & Subject Title: 22UMFOA01 & MATHEMATICAL FOUNDATIONS

COURSE OBJECTIVES:

To learn how to apply fundamental mathematical tools and techniques used in most fields of science and mathematics.

Subject Code & Subject Title: 22UBCAC23 & C++ AND DATA STRUCTURES

COURSE OBJECTIVES

- To Understand the Principles of Object Oriented Programming
- To understand the concepts of Classes and Objects
- To Understand the Concepts of Inheritance
- To Understand the Concepts of Data Structures
- To Understand in developing C++ programs

COURSE OUTCOMES

- To learn the basic concepts Object oriented programming.
- To learn the control structures and arrays.
- To implementing the constructors & File opening and closing.
- To learn the fundamentals of stack & Queue operations.
- To learn the concepts of graphs, sorting & searching methods.

Subject Code & Subject Title: 22UBCAP24 & C++ & DATA STRUCTURE LAB

COURSE OBJECTIVES

1. To Impart Practical Training in C++ Programming Language

Subject Code & Subject Title: 22UBCACE26-3 & INTERNET AND ITS APPLICATIONS

COURSE OBJECTIVES

- Illustrate basic concepts of Internet.
- Understand Apply the necessary of Internet Explorer.
- Analyze, design and implement Email system.
- Demonstrate the Hyper Text Markup languages
- To learn the E-marketing & its usage.

COURSE OUTCOMES

- Explain basic usages of internet and its applications.
- Define and demonstrate the use of Web Browsers.
- To Explain the E-Mail applications.
- To demonstrate the HTML & its tags.
- To Know the E-Marketing and its advertisements.

Subject Code & Subject Title: 22USMAA02 & STATISTICAL METHODS AND THEIR APPLICATIONS

COURSE OBJECTIVES

- To know about statistics
- To know about measures of central tendencies and dispersion
- To know about correlation and regression
- To know the concept of probability and distribution
- To apply test of significance

COURSE OUTCOMES

- Understand the various concepts of statistics.
- know about measures of central tendencies and dispersion
- know the concept of correlation and regression
- apply the concept of probability distribution
- test the population parametric value

DEPARTMENT OF PHYSICS
ACADEMIC-2022-2023

PROGRAM OUTCOMES:

To enter top educational and research institutes in India and abroad, there is a well-refined entrance test procedure. Several entrance tests are conducted at national level.

- After B.Sc. degree, students are eligible for the MRNAT / IIT-JAM exam conducted by various institutions. Another exam like Graduate Aptitude Test in Engineering (GATE) is also conducted by universities for admission in M.Tech programme.
- JEST exam is another entrance examination conducted by Science and Engineering Research Board (SERB) for admission in integrated MTech, Ph.D. courses in the institutes that demand JEST scores.
- Students having B.Sc. degree can enter M.Sc. programme based on JEST score. TIFR enrol students in its master course in integrated course M.Sc./Ph.D. by conducting a national level test.
- If the student is willing to go abroad for higher studies then he must clear the Graduate Record Examination (GRE) to get admission in a graduate programme abroad. From the job perspective, there are various jobs for a physics student that he can opt after completing his study. He can be a Physicist, a lecturer, a professor in university, a scientist in various research centres in the country, a radiologist, a scientific advisor, an entrepreneur, a researcher in a top organization mentioned earlier.

I-B.SC PHYSICS
SUBJECT: PROPERTIES OF MATTER AND SOUND
SUBJECD CODE: 22UPHYC13
COURSE OBJECTIVES

1. To expound the fundamentals of elastic properties of solids.
2. To understand the surface properties of liquids and the experimental methods.
3. To explain the viscous properties of liquids and gases, Poiseuille's formula.
4. To elaborate the SHM, resonance phenomena, determination of frequency and loudness.
5. To get an idea of the ultrasonic generation method, reverberation, acoustics of buildings and use in oil and gas industry.

COURSE OUTCOMES

On completion of the course, the student would have learn the following:

1. Theory of Elasticity and bending of beams, Couple per unit twist of a wire, Torsional pendulum ideas.
2. Have knowledge on surface properties of liquids and its determination methods.
3. Understood the viscous behaviour of liquids and gasses.
4. understood the Physics of sound and its applications
5. Learned the method of producing ultrasonic waves and its applications. The concepts of acoustic comfort and the theories used in building acoustics, use of sound in oil industry

SUBJECT: HEAT AND THERMODYNAMICS
SUBJECT CODE: 22UPHYC14
COURSE OBJECTIVES

1. To get an idea about the specific heat capacity and its determination.
2. To understand the kinetic theory of gases and gas laws.
3. To get acquainted with transmission of heat and radiation laws.
4. To understand the low temperature Physics and Superconductivity.
5. To learn the thermodynamic system and its laws.

COURSE OUTCOMES

1. After the completion this Course, the student would acquire the following:
2. Get an idea about the specific heat capacity and its determination methods.
3. Understood the kinetic theory of gases and gas laws.
4. Get acquainted with transmission of heat process and radiation laws.
5. Understood the method of generating low temperature and Superconductivity.
6. Learn the thermodynamic system and its associated laws.

SUBJECT: MECHANICS
SUBJECT CODE: 22UPHYC23

COURSE OBJECTIVES:

1. To learn the laws of conservation and collision of bodies
2. To understand and calculate the moment of inertia of different bodies
3. To know the laws of gravitation, variation of 'g' and gravitational field
4. To learn the central force motion, centre of mass, variable mass systems
5. To understand the friction, centre of gravity and flow of fluids

COURSE OUTCOME

After the completion of the Course the student would understand the following:

1. The laws of conservation and collision of bodies
2. Calculate the moment of inertia of rigid body systems
3. Laws of gravitation, variation of 'g' and gravitational field and potential
4. The central force motion, centre of mass and variable mass systems
5. The friction, centre of gravity and flow of fluids

PRACTICAL – I CODE: 22UPHYP24

COURSE OBJECTIVES

To understand and learn the measurement of

1. Elastic properties of solids.
2. Physical properties of liquids

3. Thermal properties of matter
4. Optical and electrical properties of materials and semiconductors
5. Frequency of vibration, relative density, and acceleration due to gravity

COURSE OUTCOMES

The student will be learn to determine the following physical properties:

1. Elastic properties of solids.
2. Physical properties of liquids
3. Thermal properties of matter
4. Optical and electrical properties of materials and semiconductors
5. Frequency of vibration, relative density, and acceleration due to gravity

SUBJECT: FUNDAMENTALS OF PHYSICS
SUBJECT CODE: 22UPHYE26–2

COURSE OBJECTIVES

1. To know the units, dimensions and measurement of various physical quantities.
2. To acquire knowledge on different states of matter and conversion between them.
3. To know different types of energy.
4. To know about pressure, temperature and their simple measuring devices.
5. To understand principles of mirrors and lenses

COURSE OUTCOMES

Students studying Fundamentals of Physics course would have learnt the following:

1. units and dimensions of various fundamental physical quantities
2. Different states of matter and conversion between them.
3. Types of energy and its conservation.
4. Pressure and temperature and their measurement using simple devices.
5. Principle and use of mirrors, lenses and scattering of light.

II-YEAR PHYSICS

SUBJECT: Electricity, Magnetism & Electromagnetism
SUBJECT CODE: 21UPHYC33
Course Objectives

1. Familiarize with the concept of electric flux, electric potential and capacitors.
2. To know the principles current and thermo electricity.
3. Understand the magnetic effects of electric current.
4. Study the unification of electric and magnetic phenomena.
5. To gain knowledge about Maxwell's equations.

Course Outcomes

1. After studied unit-1, the student will be able to know fundamentals coulomb's law and Gauss's law and also able to derive the expression for electric potential, capacitance of a parallel plate capacitor.

2. After studied unit-2, the student will be able to derive the expression for temperature coefficient resistance of a coil using Carey Foster's Bridge and able to know how to calibrate the ammeter and voltmeter. Also able to learn the thermo electricity concept.
3. After studied unit-3, the student will be able to explain the concepts of self and mutual inductance using electromagnetic induction phenomenon.
4. After studied unit-4, the student will be able to distinguish the dia, para and ferro magnetic materials based on different theories.
5. After studied unit-5, the student will be able formulate the expression for displacement current and Maxwell's equations.

SUBJECT: Basic Electrical Technology
SUBJECT CODE: 21UPHY534

Course Objectives

1. Students can know the basic principles of electricity.
2. To expose the knowledge on different kinds of cells and batteries.
3. To state the different theorems for DC circuits and know the function of DC Generat or /motor.
4. To acquire the basic ideas of alternating voltage and current.
5. To know the principle of transformers and motors.

Course Outcomes

1. After studied unit-1, the student will be able to know principle of Voltage, Current, Resistance, Ohm's law and Electrical safety.

2. After studied unit-2, the student will be able to distinguish between cells and batteries and able to explain the different types of batteries.
3. After studied unit-3, the student will be able to understand the Wheastone's bridge, Thevenin and Norton's theorem and also able to describe the function of DC generator and motor.

SUBJECT: Waves and Optics
SUBJECT CODE: 21UPHYC43

Course Objectives

1. To expose the knowledge of different types of waves motion and oscillations.
2. To study the property of surface tension and viscosity of a liquid.
3. To learn the different types of aberrations and phenomenon of interference.
4. To teach the Fresnel's and Fraunhofer's class diffraction and its applications.
5. To know the basics of polarization phenomenon.

Course Outcomes

1. After studied unit-1, the student will be able to formulate the equation for plane
2. Progressive wave and able to understand the concept of simple harmonic motion and other types of waves
3. After studied unit-2, the student will be able study the property of surface tension of a
4. Liquid and know how the surface tension varies with temperature and also able to explain the property of viscosity of a liquid.
   After studied unit-3, the student will be able to describe the different optical of a lens
5. System and able to design the eyepieces. Also able to know the phenomenon of interference and its applications.
   After studied unit-4, the student will be able to distinguish between Fresnel class of
6. Diffraction and Fraunhofer class of diffraction. Also formulate the expression for resolving power of telescope, microscope, prism and grating.
   After studied unit-5, the student will be able to explain the phenomenon of
7. Polarization and able to study the double refraction in uniaxial crystals. Also they can define optical activity, specific rotation and know the applications of polaroids.

III-B.SC PHYSICS
SUBJECT : ATOMIC AND MOLECULAR PHYSICS
SUBJECT CODE: CPH51

Course Objectives

1. To study the properties of cathode and positive rays and can formulate the expression for e/m
2. To know the structure of the atom and to understand the spectral lines.
3. To understand effects of magnetic field on atomic spectra
4. To acquire the knowledge about photoelectric effect and can derive the expression for Einstein's photoelectric equation.
5. To teach various energy levels viz., rotational, vibrational etc.and can understand the principle of Infrared spectroscopy, Raman effect and Laser

Course Outcomes

1. After studied unit-1, the student will be able to know the properties of cathode rays and positive rays. Also will be able to study the determination of specific charge of an electron.
2. After studied unit-2, the student will be know the different atom models and can get an idea about coupling schemes.
3. After studied unit-3, the student will be able to study the Zeeman effect, Paschen Back effect and Stark effect.
4. After studied unit-4, the student will be able to know the basic idea of photoelectric effect and can able to derive the equation for Einstein's photoelectric equation.
5. After studied unit-5, the student will be able to study the rotational and vibration energy of a molecule and also learn the Infrared spectra, Raman Effect and Laser.

SUBJECT: Relativity and Quantum Mechanics
SUBJECT CODE: CPH52

Course Objectives

1. To teach the fundamental aspects of relativity and special theory of relativity.
2. Ability to understand the concepts of matter waves and to study the phase velocity and group velocity.
3. To learn the Heisenberg's Uncertainty Principle and to derive the time dependent and time independent Schrödinger equation.
4. To apply the Schrödinger's equation to various quantum mechanical systems.
5. To expose the ideas of postulates of quantum mechanics and operators.

Course Outcomes

1. After studied unit-1, the student will be able to know the frames of reference and able to formulate the Galilean Transformation equations and Lorentz Transformation equations.
2. After studied unit-2, the student will be understand the matter waves and can derive an equation for de Broglie wavelength. Also able to distinguish between phase velocity and group velocity and demonstrate Davison &Germer experiment.
3. After studied unit-3, the student will be able to state the Heisenberg's Uncertainty. Principle and able to derive the time dependent and time independent Schrödinger's equations.
4. After studied unit-4, the student will be able to know the basic idea of photoelectric.effect and can able to derive the equation for Einstein's photoelectric equation.
5. After studied unit-5, the student will be able to learn postulates of quantum mechanics, operators and also able to acquire knowledge on Dirac's bra and ket notations.

SUBJECT: Basic and Applied Electronics
SUBJECT CODE: CPH53

Course Objectives

1. Students will gain knowledge about semiconducting diodes and transistors.
2. To teach the different types of amplifiers and oscillators.
3. To learn the working multi vibrators and wave shaping circuits.
4. To study the basics of fabrication of integrated circuits and fundamentals of operational amplifiers.
5. To expose the various applications of OP-AMP and 555 Timer.

Course Outcomes

1. After studied unit-1, the student will be able to classification of solids on the basis of
   band theory and know the construction, working and applications of semiconducting diodes and transistors.
2. After studied unit-2, the student will be able to design the RC-coupled amplifier and
   to study its frequency response curve. Also students will be able to classify the power amplifiers, to learn the h-parameters and to able to design oscillator circuits.

3. After studied unit-3, the student will be able to understand the multi vibrators using
   transistors and can able to study the different wave shaping circuits.
4. After studied unit-4, the student will be able to know the basic idea of integrating
   circuits and able to fabricate diode, transistors, resistor and capacitors. Also students will be study the structure of operational amplifier and its parameters.
5. After studied unit-5, the student will be able to analyze the different applications of
   Op-amp circuits like adder, subtract or etc. and also able to demonstrate 555 Timer and its applications.

SUBJECT: Cell Phone Technology
SUBJECT CODE: CSPH55

Course Objectives

1. To learn the back ground information about cellular system.
2. To study the various mobile standards.
3. To teach the chip level information of mobile phones.
4. To expose the idea about trouble shooting of problems in mobile phones.
5. To acquire the knowledge about mobile service tools.

Course Outcomes

1. After studied unit-1, the student will be able understand the cellular communication
   system.
2. After studied unit-2, the student will be able to study the smart phones and various
   mobile standards like 1G,2G, etc.
3. After studied unit-3, the student will be able to learn chip level information and Soldering and disordering the various components.
4. After studied unit-3, the student will be able to understand the network problems and
   SIM card problems and to learn the trouble shooting process.
5. After studied unit-5, the student will be able to know how to use the ultrasonic Cleaner, mobile virus and other service tools.

SUBJECT: Digital Electronics
SUBJECT CODE: CEPH54

Course Objectives

1. Understanding the different number systems and conversion between them and also to study the basic logic gates.
2. To teach the laws of Boolean algebra, De Morgan's theorems and other logic circuits.
3. To Study combination of logic circuits and understanding concepts of various flip- flops.
4. To expose the knowledge on various registers and counters.
5. To learn the digital to analog and analog to digital converters.

Course Outcomes

1. After studied unit-1, the student will be able to gain knowledge between different
   types of number systems, and their conversions. Also able to study the various Binary codes and to design basic logic gates.
2. After studied unit-2, the student will be able to describe laws of Boolean Algebra, De Morgan's theorems. Also able to demonstrate K-Map and simplification of logic expressions and to design universal gates using NAND and NOR gates.
3. After studied unit-3, the student will be able to explain the Multiplexer, Demultiplexer and Decoder. Students can know the functions of various Flip-Flop circuits.
4. After studied unit-4, the student will be able to conceptualize the classification of registers and counters.
5. After studied unit-5, the student will be able to know how to convert digital to analog and analog to digital using different methods.

SUBJECT: Nuclear and Particle Physics
SUBJECT CODE: CPH61

COURSE OBJECTIVES

1. To have a clear idea about the fundamentals of nucleus and its structure.
2. To understand the concept of radioactivity.
3. To have a clear understanding of the design and working of particle accelerators and detectors.
4. To understand the nuclear reactions and the nuclear reactors.
5. To gain knowledge about the elementary particles

Course Outcomes

1. After studying Unit 1, the student will have a clear idea about the fundamentals of
   nucleus and its structure.

2. After studying Unit 2, the student would have understood the concept of radioactivity.
3. After studying Unit 3, the student will be having a clear understanding of the design
   and working of particle accelerators and detectors.
4. After studying Unit 4, the student will be having a thorough understanding about the nuclear reactions and nuclear reactors.
5. After studying Unit 5, the student would have gained adequate knowledge about the elementary particles like pions, muons, hyperons etc.

SUBJECT: Solid State Physics
SUBJECT COBE: CPH62

Course Objectives

1. To gain the knowledge of the crystal system and to know the different crystal structure
2. To know the different types of bonding in crystals and to know the basics of Super conductors and their applications.
3. To learn how the X-ray diffraction helps to know the crystal structure and to know the
   defects present in the crystals
4. To know the different types of magnetism and their theories.
5. To understand the electric polarization in a dielectric material.

Course Out Comes

1. After studied unit-1, the student will be able to Distinguish between crystalline and \amorphous solids, Classify the crystal systems and able to understand the crystal structure
2. After studied unit-2, the student will be able to relate the X-ray diffraction with crystal structure and explain the various differences in properties of solids due to crystal imperfections .
3. After studied unit-3, the student will be able to understand the different types of 50

SUBJECT: Materials Science
SUBJECT CODE: CEPH63B

Course Objectives

1. To teach the classification of engineering materials and properties.

2. To discuss the mechanical and thermal behaviour of materials.
3. To expose the knowledge on polymers, ceramics and nonmaterial.
4. To study the basics of smart materials.
5. To learn the idea of energy storage materials

Course Out Comes

1. After studied unit-1, the student will be able to know the origin engineering materials and its classification. Also students will be able to learn the bonding character and its Properties
2. After studied unit-2, the student will be able to describe mechanical properties like elastic behavior and thermal properties like heat capacity, thermal conductivity etc.
3. After studied unit-3, the student will be able to know the basics of polymers, ceramics and nanomaterial.
4. After studied unit-4, the student will be able to explain definition and types of smart materials.
5. After studied unit-5, the student will be able to conceptualize the energy storage materials.

SUBJECT: Medical Physics
SUBJECT CODE: CEPH64B

Course Objectives

1. To have a fundamental knowledge about the characteristics and production of X-rays.
2. To understand the concept of radiation physics.
3. To have a clear understanding of the design and working of Medical imaging techniques.
4. To understand the concepts and ideas behind radiation therapy.
5. To gain knowledge about the protective measures in radiation therapy

Course Outcomes

1. After studying Unit 1, the student will have a clear idea about the fundamentals of the production and characteristics of X-rays.
2. After studying Unit 2, the student would have understood the concept of radiation units and radiation detectors.
3. After studying Unit 3, the student will have a clear understanding of the design and working of Medical imaging techniques and computer tomography scanner.

4. After studying Unit 4, the student will be having a thorough understanding about the diagnostic nuclear medicine and some medical instrumentation.
5. After studying Unit 5, the student would have gained adequate knowledge about the protective measures to be undertaken in radiation therapy.
6. After studied unit-4, the student will be able togain the knowledge of magnetism in
   material sand able to distinguish different magnetic materials. Also able to understand the phenomena of superconductivity and their applications
7. After studied unit-5, the student will be able to explain the electric polarization in
   dielectric materials and also gain the knowledge in dielectric breakdown mechanisms in a dielectric material.

DEPARTMENT OF MATHEMATICS

PROGRAMME OUTCOME
2022-2023

Students who successfully complete the UG mathematics major will be able to:

- Demonstrate an understanding of the foundations and history of mathematics
- Perform computations in higher mathematics
- Read and understand middle-level proofs, write and understand basic proofs
- Develop and maintain problem-solving skills
- Use mathematical ideas to model real-world problems
- Communicate mathematical ideas with others
- Utilize technology to address mathematical ideas

With that skill set, graduates are well prepared to begin rewarding careers in:

- Education
- Statistics
- Actuarial science
- Mathematics, both pure and applied

By the end of a degree program in Mathematics, a student will have the versatility to work effectively in a broad range of analytic, scientific, government, financial, health, technical and other positions.

Students who successfully complete the PG mathematics major will be able to:

- To cultivate a mathematical attitude and nurture the interests,
- To motivate for research in mathematical sciences,
- To train computational scientists who can work on real life challenging problems

B.Sc., Mathematics 2022-23
Semester I
COURSE CODE :22UMATC13
COURSE TITLE : CLASSICAL ALGEBRA
22UMATC13
COURSE OBJECTIVES

In this course students are exposed to topics like Theory of Equations, Summation of Series, Matrices and Elementary Number Theory. The stress is on the development of problem solving skills.

COURSE OUTCOMES

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

1. Apply the fundamental concept of theory of equations and to find solutions.
2. Apply Descarte's rule, Horner's method, Newton Raphson methods for finding approximate solutions.

3. Apply summation of series using Binomial, Exponential and Logarithmic series for finding approximations.
4. Apply the elementary number theory for highest power of prime number.
5. Apply the elementary number theory for Fermat's and Wilson's theorem.

COURSE CODE :22UMATC14
COURSE TITLE DIFFERENTIAL CALCULUS AND TRIGONOMETRY
COURSE OBJECTIVES

To inculcate the basics of differentiation and their applications, the notion of curvatures, radius of curvature in Cartesian and polar coordinates ,Evolutes & Involutes, students can be trained to understand the basic concepts of Trigonometry.

COURSE OUTCOMES

6. On successful completion of the course, the students will be able to
7. To know the basic concepts of Successive approximations and Lebnitz's theorem
8. Know the principles of Maxima and Minima for 2 variables.
9. Find the radius of curvature for Cartesian and Polar coordinates,Evolutes and Involutes.
10. Know the expansions of Trigonometric functions.
11. Understand the concepts of Hyperbolic and Inverse Hyperbolic functions, Logarithm of Complex numbers, summation of Trigonometry series, Gregory series.

COURSE CODE :22UPHYA01
COURSE TITLE :PHYSICS – I
COURSE OBJECTIVES

1. To understand the concept of elasticity and strength of solid materials, viscous properties of liquids and surface tension.
2. To acquire knowledge on centre of gravity, state of equilibrium and stability of floating.
3. To study the heat capacity, conduction, convection, and radiation
4. To understand conversion of heat into mechanical work.
5. To know the phenomena of light such as interference, diffraction, polarization, and their applications

COURSE OUTCOMES

Students studying this coursewould understand the following:

1. Fundamentals of elasticity, theory of bending, flow of liquids and viscous forces and surface tension
2. centre of gravity of bodies of different shapes, equilibrium of states and forces involved in stability of floating.
3. transmission of heat by the processof conduction, convection, and radiation.
4. various laws involved in heat transformation, thermodynamics, and the concept of entropy
5. the phenomena like interference diffraction, and polarization, optical activity of liquids and its uses.

COURSE CODE:22UENVS 18

COURSE TITLE: ENVIRONMENTAL STUDIES

Course Objectives

1. To gain knowledge about the importance of environmental sciences and natural resources.
2. To learn the concept, structure and function of ecosystem and the importance of biodiversity.
3. To understand and gain knowledge about environmental pollution and management.
4. To impart knowledge about social issues and human population.
5. To acquire the skills for identifying and solving pollution problem.

Course Outcomes

After completion of this course, students will be able to gain knowledge in 1. The scope and importance of environmental science and natural resources. 2. The structure and functions of Ecosystem and biodiversity and its conservation. 3. The problem of environmental pollution and its management. 4. The social issues and human population. 5. They will identify and solve the pollution problem.

Semester II

COURSE CODE:22UMATC23
COURSE TITLE: INTEGRAL CALCULUS
COURSE OBJECTIVES

In this paper the student is exposed to the idea of integration and different methods of integration. To acquaint the student with mathematical tools needed in evaluating multiple integrals and their usage. The application of integration to the evaluation of areas and volumes is also introduced.

COURSE OUTCOMES

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

2. Solve problems using the different methods of integration.
3. Solve problems in techniques of Reduction formulae and Bernoulli's formula.
4. Solve problems in Change of order of integration and Properties of definite integrals.
5. Solve problems in double and triple integrals.
6. Apply double and triple integrals in finding area and volume.

COURSE CODE:22UMATC24

COURSE TITLE : ANALYTICAL GEOMETRY 3D

COURSE OBJECTIVES

This paper aims to understand the fundamental concepts of Analytical Geometry in Three Dimension, such as Distance between points,Projections,Angle between planes,Line of intersection of two planes,Length of perpendicular,Symmetrical form of the equations of a line,Coplanar lines, Shortest distance between two given lines,Centre and radius of Sphere,Equation of a circle on a sphere, The equation of Right circular cone and cylinder, Central quadrics

COURSE OUTCOMES

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

1. Explain fundamental concepts of analytical geometry in 3D, about direction cosines of a line and the plane, equation and plane.
2. Know the straight line, symmetric form of equation of a line, equation of a line passing through two given points, the plane and the straight line, intersection of three planes.

3. Understand the Length of perpendicular distance, Coplanar lines.
4. Solve problems on Symmetrical form of the equations of a line, Shortest distance between two given lines,Centre and radius of Sphere
5. Find the equation of Sphere, the length of the tangent form of point to sphere, equation of a circle on a sphere, intersection of two spheres, cone, cylinder and central quadrics.

COURSE CODE:22UPHYA02

COURSE TITLE: PHYSICS II

COURSE OBJECTIVES

1. To understand the concept and laws of electrostatics, working of capacitors.
2. To acquire knowledge on current electricity, electromagnetic induction and resonance circuits.
3. To understand the atom models, X-rays and nuclear properties and reactions.
4. To study fundamentals of solid-state electronics diodes and transistors.
5. To know the number system, logic gates and basic digital circuits.

COURSE OUTCOMES

Students studying Allied Physics-II would have learnt the following:

1. Electric intensity, potential and capacitor principle and its types.
2. laws used in electrical circuits, specific resistance measurement and laws of electro magnetic induction.
3. various atom models, nuclear models, fission and fusion reactions.
4. solid state electronic devices diode and transistor, their characteristics and applications.
5. the number systems, conversion between them and logic gates and digital circuits.

COURSE CODE:22UPHYP02

COURSE TITLE: PHYSICS PRACTICAL

COURSE OBJECTIVES

1. To know the method of determining elastic properties of solids
2. To learn the experimental method to determine surface tension and viscous properties of liquids
3. To acquire knowledge of measurement of optical properties of solid
4. To acquire knowledge to measure the size of very small objects.
5. To gain knowledge of finding thermal properties of liquids
6. To obtain the electrical properties of a conductor and to perform experiments to study the semiconductor devices and digital circuits.

COURSE OUTCOMES

After Completion of the Allied Physics Practical course the student would be conversant in measuring the

1) elastic properties
2) surface tension
3) Viscous
4) Thermal
5) electrical
6) optical properties and
7) acquired knowledge of semiconductor diodes and digital gates.

COURSE CODE:22UMATE26-2

COURSE TITLE: MATRIX THEORY

COURSE OBJECTIVES

In this course students are trained to develop skills in finding rank,inverse, Eigen values, Eigen vectors and quadratic forms.

COURSE OUTCOMES

8) On successful completion of the course, the students will be able to:
9) Find the rank and inverse of a matrix.

10) To understand the symmetric,skew symmetric,Hermitian ,orthogonal and Unitary matrices

11) Find Eigen Values and Eigen Vectors.

12) Diagonalize the matrix using similarity transformation.

13) Find the nature of Quadratic forms.

COURSE CODE : 22UVALE27

COURSE TITLE : Value Education

Course Objectives

1. To incorporate human values in educational system.
2. To imbibe deeper understanding of the need and importance of value-based living.
3. To develop an honorable character
4. To make the students understand how values lead to success.
5. To make the student realize that all the problems can be solved by one's innate goodness

Course Outcomes

1. The students understand the importance of value-based living.
2. Students become aware of the Universal Value System.
3. Students learn how success is directly value based
4. Students develop an honorable character.
5. Students learn to face all the problems courageously.

COURSE CODE : 22USOFS28

COURSE TITLE : Soft Skills

Course Objectives:

1. To develop the receptive skills of listening and reading.
2. To improve the skills of interpreting and transcoding information.
3. To develop the presentation skills of speaking and writing.
4. To improve communication skills with reference to Personal and interpersonal Interaction.

5. To enhance the personality traits with regard to employability.

Course Outcomes:

The students understand the receptive skills of listening and reading.

1. Students learn how to interpret and transcode information.
2. Students learn Personal and Interpersonal Skills of Speaking.
3. Students learn to write without mistakes.
4. Students become aware of the effect of Good Personality Traits.

MSc. MATHEMATICS

SEMESTER: I

COURSE CODE : 22PMATC11

COURSE TITLE : ADVANCED ABSTRACT ALGEBRA

COURSE OBJECTIVES

To learn the importance of Sylow's Theorems

1. To learn the basic concepts of Direct Products and ideas of polynomials
2. To attain depth knowledge about the algebraic structure of extension fields
3. To provide the use of Galois theory in discussing the existence of roots of the polynomials
4. To learn about finite fields and important theorem related to division rings.

COURSE OUTCOMES

At the end of the course, the student will be able

5. To find the number of Sylow sub groups.
6. To find the number of non-Isomorphic Abelian groups.
7. To understand fields and roots of polynomials.
8. To find the splitting field, Galois group of the given polynomial.
9. To check whether the given polynomial is solvable by radicals or not.

COURSE CODE : 22PMATC12

COURSE TITLE : ADVANCED REAL ANALYSIS

COURSE OBJECTIVES

1. To give the students a thorough knowledge of real valued functions and their properties.
2. To discuss the concepts of Riemann –stieltjes integral and its properties.
3. To develop the concept of analysis in abstract situations.

COURSE OUTCOMES

Our successful completion of this course, students will be able to

4. Demonstrate an understanding the theory of function of bounded variations,sequence Of functions, Riemann-stieltjes integrals.
5. To apply the theory in the course to solve a variety of problems at an appropriate Level of difficulty.
6. Demonstrate skills in constructing rigorous mathematical analysis.
7. The student will gain confidence in proving theorems and solving problems.
8. Student will understand the generalized concept of Differential Calculus.

COURSE CODE : 22PMATC13

COURSE TITLE : ORDINARY DIFFERENTIAL EQUATIONS

COURSE OBJECTIVES

1.To develop strong background on finding solutions to linear differential equations with constant and variable coefficients and also singular points.

2.To study existence and uniqueness of the solutions of first order differential equations.

COURSE OUTCOMES

After successful completion of the course the student will be able to:

1. Understand the concept of Wronskian formula
2. Understand the concept of initial value problems
3. Understand the concept of Existence and uniqueness theorems
4. Understand the Bessel Function.
5. Understand the Lipschitz condition.

COURSE CODE :22PMATC14

COURSE TITLE : OPTIMIZATION TECHNIQUES

COURSE OBJECTIVES

To enlighten the students in the field of operations research.

1. To help the students to apply OR techniques in business and management problems.
2. To provide a mathematical programming for finding applications in diverse fields Including engineering, computer science and economics.

COURSE OUTCOMES

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

1. Ability to apply the theory of optimization methods and algorithms to develop and For solving various types of optimization problems.
2. Ability to go in research by applying optimization techniques in real value problems
3. Analyze decision making under certainty and uncertainty by game theory.
4. Understand unconstrained and constrained optimization problems.
5. Understand Non-Linear programming problems.

22PMATE15-2: MATHEMATICAL STATISTICS

COURSE CODE :22PMATE15-2

COURSE TITLE : MATHEMATICAL STATISTICS

COURSE OBJECTIVES

To study random variables and its applications.

To explore probability distributions.

. To understand moments and their functions.

. To introduce significance tests.

. Concepts of ANOVA

COURSE OUTCOMES

After completion of this course the student will be able to

1. Apply the concepts of random variables in real life situations.

2. Identify the type of statistical situation to which different distributions can be applied.

COURSE CODE : 22PCSCO17-1

COURSE TITLE : FUNDAMENTALS OF COMPUTER APPLICATION

COURSE OBJECTIVES

1. To know about computer and basic applications of computer.
2. To get knowledge about operating system.
3. To aim at imparting a basic level appreciation Programme.
4. To Understand word processing.
5. To develop Word spread sheet and power point Presentation.

COURSE OUTCOMES

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

SEMESTER: II

COURSE CODE :22PMATC21

COURSE TITLE : ADVANCED LINEAR ALGEBRA

COURSE OBJECTIVES

1. To aim learning the students to solve systems of linear equations using multiple methods, matrix operations including inverses
2. To establish basic properties of algebra of polynomials over a field
3. To apply principles of matrix algebra
4. To investigate determinant of matrices and its properties
5. To understand the canonical forms of matrices and its properties.

COURSE OUTCOMES

Students will be introduced to and have the knowledge of many mathematical concepts, Examples and Counter Examples, Proof Techniques and Problem Solving studied in Linear Algebra such as

1. Systems of linear equations
2. The algebra of linear Equations
3. The algebra of Polynomials
4. Determinant functions
5. Diagonalization, Decompositions.

COURSE CODE :22PMATC22

COURSE TITLE : MEASURE THEORY AND INTEGRATION

COURSE OBJECTIVES

1. To generalize the concept of integration using measures.
2. To develop the concept of analysis in abstract situations.
3. To discuss convergence in measure and properties of L^p Space.

COURSE OUTCOMES

1. Students will be able to get knowledge of many mathematical concepts
2. Examples and counter examples
3. Problem solving techniques
4. Understand the fundamental studies in measurable sets, measurable functions and convergence in measure.
5. Student will understand the generalized concept of convergence in measure.
6. Student will understand the measurability in a product space.

COURSE CODE :22PMATC23

COURSE TITLE : PARTIAL DIFFERENTIAL EQUATIONS

COURSE OBJECTIVES

1. To introduce to the students the various types of partial differential equations.
2. How to solve the partial differential equations.

COURSE OUTCOMES

1. on successful completion of the course, the student will be able to:
2. Solve various types of first order PDE.

3. Solve various types of second order PDE.
4. Solve Elliptic differential equation.
5. Solve Parabolic differential equation.
6. Solve Hyperbolic differential equation

COURSE CODE :22PMATC234

COURSE TITLE : CLASSICAL DYNAMICS

COURSE OBJECTIVES

- Classical mechanics afford the student an opportunity to master many of mathematics techniques.
- It is certainly true that classical mechanics today is far from being a closed subject.
- Alternate means exist in the curriculum for acquiring the mathematics needed in other branches
- To give a details knowledge about the mechanical system of particles, applications of Lagrange's equations and Hamilton's equations as well as the theory of Hamilton Jacobi Theory.

COURSE OUTCOMES

1. Be able to solve the Lagrange's equations for simple configurations using various methods
2. Be able to understand the concept of Hamilton Jacobi Theory.
3. Be able to understand the concept canonical Transformations
4. To develop skills in formulating and solving physics problems
5. Able to get idea of dynamical systems are of relatively recent origin, the concept of motion in phase- space and its geometrical depiction is simple

COURSE CODE :22PMATE25-1

COURSE TITLE : NUMBER THEORY AND CRYPTOGRAPHY

COURSE OBJECTIVES

The course aim is to introduce the concept divisibility and Euclidean algorithm, quadratics residues and reciprocity, encryption and decryption, primality test.

COURSE OUTCOMES

- Students able to understand the divisibility and Euclidean algorithm.

- Students able to understand quadratics residues and reciprocity.
- Students able to analyse encryption and decryption.
- Students able to do the primality test.
- Students able to the determine the elliptic curve primality test.

COURSE CODE : 2PHUMR27
COURSE TITLE: HUMAN RIGHTS

COURSE OBJECTIVES

LO1.To understands the conceptual background of Human Rights.
LO2. To study international and regional norms and institutional mechanisms of Human Rights.
LO3.To know the international concern for Human Rights.
LO4.To explores the emerging issues in international human rights.
LO5.To study the Classification of Human Rights

COURSE OUTCOMES :

At the end of the course, the student
CO 1: will have knowledge about the conceptual background of Human Rights.
CO 2: can apprise on International Human Rights norms and mechanisms.
CO 3: can understand the emerging dimensions of Human Rights in international forum.
CO4. can explain about the Third Generation Human Rights
CO5. can discusses about Right to Clean Environment.

BBA PROGRAMME OUTCOME

1. Students will exhibit understanding of broad business concepts and principles.

2. Students will exhibit critical thinking skills to address diverse business challenges and opportunities.

- Students will be able to identify and define problems and opportunities.
- Students will demonstrate problem solving skills by gathering and assessing appropriate information.
- Students will demonstrate use of appropriate techniques to effectively manage business challenges.

3. Model business professionalism and demonstrate effective written and oral communication skills.

- Students will be able to effectively communicate management concepts, plans and decisions in oral presentations.
- Students will be able to effectively communicate management concepts, plans and decisions in written reports.
- Students will demonstrate professional conduct within any team activities.

OBJECTIVES

1. To provide the basic and essential knowledge regarding various activities undertaken and necessary to run socially responsible business organization

2. To teach certain basic skills and aptitude to be helpful in taking up any particular activity in a business

3. To inculcate global view of the industrial and organizational establishments and their functions which support the business system.

4. To make them responsible to specialize in the areas of management like human resource, finance, operations, marketing and systems.

5. To inform the micro level concepts of business and management like insurance, retail marketing, supply chain, knowledge management etc.,

6. To develop the culture of business and entrepreneurial aptitude among the people at large

7. To provide an opportunity of higher education in the field of business administration for the discontinued students of school education.

8. To enhance the availability of continuing education to the rural people, economically weaker section of the society and women.

9. To make the unemployed as employed and entrepreneurs by providing the necessary skills and knowledge of business and administration.

Krishnasamy College of Science, Arts and Management for Women,

DEPARTMENT OF BUSINESS ADMI NISTRATION

COURSE OUTCOME

I YEAR - I SEMESTER & II SEMESTER

22UBBAC13 - PRINCIPLES OF MANAGEMENT

COURSE OBJECTIVES

- To familiarize the students with principles of management concepts.
- To provide an insight about the management functions of planning, organizing, staffing, directing & controlling.
- To enumerate the importance of organizing and organizational structure.
- To make them understand on the importance of HR practices and motivation.
- To enable them to understand the techniques of co-ordinations.

COURSE OUTCOMES

- At the end of the course, the students will be able to
- Understand the basic concept of management and practices
- Understand the proper planning, elements and techniques of planning recognise and apply the skills necessary for carrying out effective management practices.
- Understand the different organization structure need for departmentation.
- Understand the basic concepts of staffing process in the human resource department and theories of motivation.
- Understand the problems and stages in controlling process & coordination.

22UBBAC14 - FINANCIAL ACCOUNTING

COURSE OBJECTIVES

- To inculcate basic accounting concepts and postulates
- To understand how trial balance helps to check accuracy in the ledger positioning
- To provide wide knowledge about final accounts
- To understand the meaning of depreciation and methods of charging depreciation

- To build a base income and expenditure& receipts and payment accounts.

COURSE OUTCOMES

- At the end of the course, the students will be able to
- Understand the fundamentals of financial accounting
- Ensure the mathematical accuracy of the business transaction recorded in company ledger.
- Prepare various books of accounts and final accounts.
- Understand how to determine the amount of depreciation from the total value of property.
- Learn to prepare various accounts; receipts and payments account, income and expenditure, balance sheet for non-profit organisation.

22UBBAP24 - CORE PRACTICAL - TALLY

COURSE OBJECTIVES

- Help the students to know the fundamental concepts of Tally.
- Help them to understand how to use Tally software in day to day applications.
- Familiarize the students to use this package for business.
- Introduce the students to some basic tools like creation of voucher, purchase order etc.
- Familiarize the students in the preparation of tax related sales vouchers.

COURSE OUTCOMES

- Using Tally to create personal business documents following current professional and/or industry standards
- Create scientific and technical documents incorporating the billing procedures
- Develop entries for creation of vouchers
- Design bills for implementation of taxation aspects.
- Design and construct financial statements after considering taxes and GST.

22UBBAA15-2 CONSUMER BEHAVIOUR

COURSE OBJECTIVES

- To enable the students to learn the basics of consumer behaviour

- To understood consumer motivation and perception
- To learn consumer learning and attitude
- To learn consumer decision making process.

COURSE OUTCOMES

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

- Explain the basic concepts and models of consumer behaviour
- Analyse the effects of psychological, socio-cultural and demographic factors on the consumer decision process with their results
- Distinguish the relationship between consumer behaviour and marketing practices
- Define the importance of consumer behaviour for businesses
- Compare the relationship between consumer behaviour and other disciplines.

22UBBAS16 - SALESMANSHIP

COURSE OBJECTIVES

- To provide the students with various duties and responsibilities of salesman.
- To learn importance of sales presentation and sales aids.
- To enable them to analyse sales forecasting and its methods.
- To help them to know the factors affecting sales decision.

COURSE OUTCOMES

- At the end of the course, the students will be able to understand
- Duties and responsibilities of salesman.
- Essentials of sales.
- Importance of market survey to salesman and producer.
- Sales forecasting.
- Various factors affecting sales decision.

22UENVS18 - ENVIRONMENTAL STUDIES

COURSE OBJECTIVES

- To gain knowledge about the importance of environmental sciences and natural resources.
- To learn the concept, structure and function of ecosystem and the importance of biodiversity.
- To understand and gain knowledge about environmental pollution and management.
- To impart knowledge about social issues and human population.
- To acquire the skills for identifying and solving pollution problem.

COURSE OUTCOMES

After completion of this course, students will be able to gain knowledge in

- The scope and importance of environmental science and natural resources.
- The structure and functions of Ecosystem and biodiversity and its conservation.
- The problem of environmental pollution and its management.
- The social issues and human population.
- They will identify and solve the pollution problem.

II SEMESTER (EVEN SEMESTER)

22UBBAC23 BUSINESS ENVIRONMENT

COURSE OBJECTIVES

- To enable the students to understand the nature of business and its environment.
- To know how economic culture, culture systems influence organizations
- To understand how government pertaining to business have an influence on an organization
- To understand how privatization and globalization affects organizations
- To enable the students to examine and evaluate the business economic systems.

COURSE OUTCOMES

- At the end of the course, the students will be able to
- Acquaint with business objectives, dynamics of business and environment

- Able to recall and relate business and society.
- Enable to discuss the contemporary issues in business.
- Describe concepts like business ethics, ethical dilemmas, corporate culture.
- Acquaint with various strategies of global trade.

22UBBAA25-2 CUSTOMER RELATIONSHIP MANAGEMENT

COURSE OBJECTIVES

- To understand the significance of customer satisfaction, how CRM enhance customer satisfaction, how customer loyalty benefits companies and how CRM help in marketing.
- To enable students learn various stages of CRM, factors that drive CRM, benefits and growth of CRM market in India.
- To understand what CRM program is, to know the groundwork required for effective use of CRM, to know various components of CRM and types of CRM.
- To understand processes that involve in CRM to get customers and maintain a relationship with them.
- Students will learn how to facilitate CRM processes and procedures while integrating with other business workflows.

COURSE OUTCOMES

- After reading each unit, student will be able to understand
- Basis of building relationship, types of relationship marketing, customer life cycle.
- CRM and relationship marketing, CRM strategy, importance of customer divisibility in CRM.
- Sales force automation, contact management.
- Benchmarks and metrics.
- Data warehouse and data mining.

22UBBAS26 PRESENTATION SKILLS

COURSE OBJECTIVES

- To impart knowledge to develop the presentation skills.
- To help the students to make their presentations effectively.
- To learn about the fundamental presentation skills.

COURSE OUTCOMES

- At the end of the course, the students will be able to
- Use and practice delivery techniques for making presentation
- Structure presentation skills in order to improve presentation
- Understand the importance of presentation materials
- Know the audience to have effective presentation
- Demonstrate the methods for power point presentation.

22UVALE27 - VALUE EDUCATION

Course Objectives:

- To teach and inculcate the importance of value based living.
- To give students a deeper understanding about the purpose of life.
- To teach and inculcate the essential qualities to become a good leader.

Course Outcome:

- Students will understand the importance of value based living.
- Students will gain deeper understanding about the purpose of their life.
- Students will understand and start applying the essential steps to become good leaders.
- Students will emerge as responsible citizens with clear conviction to practice values and ethics in life.
- Students will become value based professionals.
- Students will contribute in building a healthy nation

22USOFS28: SOFT SKILLS

COURSE OBJECTIVES

- To develop the receptive skills of listening and reading.
- To improve the skills of interpreting and transcoding information.
- To develop the presentation skills of speaking and writing.

- To improve communication skills with reference to Personal and interpersonal Interaction.

COURSE OUTCOMES

1) The students understand the receptive skills of listening and reading.
2) Students learn how to interpret and transcode information.
3) Students learn Personal and Interpersonal Skills of Speaking.
4) Students learn to write without mistakes.
5) Students become aware of the effect of Good Personality Traits.

DEPARTMENT OF ENGLISH

PROGRAM OUTCOME AND COURSE OUTCOME (2022-2023)

PROGRAMME OUTCOMES

A comprehensive understanding of the discipline of literary studies and an awareness of the divergent and plural voices that come into the making of the corpus of literary studies.

Analyse a broad range of literatures written in English (including representative authors and major literary periods), recognizing their temporal, social, political, and artistic contexts

Utilize literary terminology, critical methods and various lenses of interpretation in their writing.

Be able to think creatively and critically so as to write effectively within all these areas of English studies and also to recognise the nature and scope of translation.

Apply the rules of English Grammar and Communicative skills for better employability and be inspired for life long learning along with capitalizing on the knowledge gained to address political, socio-economic and gender issues.

22UENGC13: LITERARY GENRES AND FORMS

COURSE OBJECTIVES

17. Introduce the variety of genres and make students familiar with them
18. Help students to get a comprehensive understanding of different forms of literature
19. Develop expertise in understanding specific genres and their characteristics
20. Help the students apply their knowledge of literary forms in speaking, reading, and writing
21. Help students appreciate the scope and richness of literature and its varied forms

COURSE OUTCOMES

At the end of the course, the student will be able to

6) Exhibit literary competence to answer MCQs for different competitive Examinations.
7) Know about different literary forms
8) Appreciate literature through a study of these genres
9) Get an overall idea of the development and growth of the literary genres

10) Acquire skills in literary writing in the different types of genres of English literature

22UENGC14: SYMPHONY OF VERSE – I

COURSE OBJECTIVES

By introducing the course, it is intended to:

11) Familiarize the historical phases of English poetry
12) Provide glimpses of writers and texts pivotal to an understanding of Literature
13) Highlight the development of poetry across time
14) Enable them to recognize poetry from a variety of cultures, languages, and historic periods
15) Make them understand and appreciate poetry as a literary form

COURSE OUTCOMES

By the end of this course the students will,

16) Obtain a comprehensive knowledge of poetry over the ages to face MCQs of NET/SET examinations and other competitive examinations
17) Develop critical evaluation skills
18) Develop a deeper appreciation of cultural diversity by getting introduced to poetry from a variety of cultures
19) Develop their own creativity and enhance their writing skills
20) Identify the nuances of poetry that can be used when writing poems

22UENGA15: SOCIAL HISTORY OF ENGLAND I

COURSE OBJECTIVES

By introducing the course, it is intended to:

1. Make the students understand the social, political, cultural, and religious events that shaped the history of England.
2. Make the students aware of the different rulers who ruled over different periods of English history.
3. Make students understand how party system came into existence.
4. Make them understand the evolution of society in England.
5. Make them aware of the religious transformation that England witnessed.

COURSE OUTCOMES

By the end of the course the student could:

1. Answer MCQs of NET/SET examinations and other competitive examinations.
2. Be familiar with the different rulers who ruled England and the evolution of the party system.
3. Understand literature that emerged during varying periods of English history.
4. Understand the social and religious events that shaped literature.
5. Evaluate literature against the backdrop of its history.

22UENGS16: ENGLISH FOR SECRETARIAL PRACTICE

COURSE OBJECTIVES

- Make the students grasp the strategies involved in developing effective communication.
- Augment students' language proficiency to meet the demands of the job market.
- Help students develop management skills and enhance their personality.
- Empower students' skills and personality.
- Students get a chance to uplift their skills and gain knowledge in handling correspondence independently.

COURSE OUTCOMES

This course will enable students to

- Read and interpret documents, plan and organise work processes, identify materials.
- Perform tasks with due consideration.
- Apply professional skill, knowledge and employability while performing jobs.
- Understand the nature and scope for communication in different jobs.
- Provide students a wide-range of writing knowledge in business communication

22UENGC23: HARMONY OF PROSE I

COURSE OBJECTIVES

By introducing the course, it is intended to:

- Introduce the learners to the various themes and techniques explored by popular prose writers
- Conceive ideas about political and social situations of different periods
- Help the students acquire the social and ethical values through the study of prose
- Introduce the historical, cultural, and social contexts in English prose
- Enable the students to acquire an adequate exposure to important prose writers of the English language

COURSE OUTCOMES

At the end of the course, the student will be able to:

- Obtain a literary acumen that would help to face MCQs of NET/SET examinations and other competitive examinations
- Understand the structure and techniques used in prose by different writers
- Comprehend the social and cultural contexts of literature through prose writings
- Appreciate the literary and philosophical thoughts of prose writers
- Acquire a comprehensive knowledge of the various styles practised by the prose writers

22UENGC24 - ADVANCED ENGLISH GRAMMAR

COURSE OBJECTIVES

- Enable students to understand the rudiments of English Grammar.
- Learners acquire a proper idea of Grammar and Linguistic conventions.
- Obtain a distinct knowledge of how to use Grammar impeccably.
- Enable them to write clearly, accurately and coherently.
- Enhance their confidence in using English for communication.

COURSE OUTCOMES

- At the end of the course, the students will be able to:
- Gain an explicit knowledge of how the language works.
- Develop mastery over sentence pattern.
- Enrich their vocabulary.
- Acquire a strong command of the spoken and written language.
- Develop competency over the right usage of English.

22UENGA25: SOCIAL HISTORY OF ENGLAND II

COURSE OBJECTIVES

By introducing the course, it is intended to:

1. Make the students learn about the economic, social, religious, and cultural life of the people of England from the 18^{th}century until the present time so that they could understand and appreciate British literature.
2. Enable the students to learn about the social revolutions and political reforms in England.
3. Help students to gain knowledge of the different movements, wars, and their impact on England and English literature.

4. Provide students the historical and social background of British empire in different centuries.
5. Teach them about the important political activities that influenced English literature.

COURSE OUTCOMES

At the end of the course, the student will be able to:

1. Gain sufficient knowledge to face MCQs of NET/SET examinations and other competitive examinations.
2. Understand the socio-political structure of 18th century England
3. Acquire knowledge of conflict between religious faith and science.
4. Attain a comprehensive knowledge of the colonization of America and Ireland by Britain.
5. Obtain a detailed socio-political understanding of the World Wars.

22UENGS26: EFFECTIVE BUSINESS WRITING

COURSE OBJECTIVES

- To make students acquire basic business writing skills.
- To cater to the needs of intended audience.
- To produce more focused, polished and effective business documents.
- To teach them how to maintain consistency in writing
- To know how to communicate ides for maximum positive impact

COURSE OUTCOMES

- At the end of the course students will learn
- The ability to write the business contents efficiently and appropriately.
- To identify the skills of business writing.
- Techniques for editing and proof reading.
- To write effectively for their purpose: to inform, respond or persuade
- The impact will be on their professional written communication.

KRISHNASAMY COLLEGE OF SCIENCE, ARTS AND MMANAGEMENT FOR WOMEN

B.Sc., CHEMISTRY

PROGRAM OUTCOME

- Students will have a firm foundation in the fundamentals and application of current chemical and scientific theories including those in Analytical, Inorganic, Organic and Physical Chemistries.
- Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
- Students will be skilled in problem solving, critical thinking and analytical reasoning as applied to scientific problems.
- Students will be able to clearly communicate the results of scientific work in oral, written and electronic formats to both scientists and the public at large.
- Students will appreciate the central role of chemistry in our society and use this as a basis for ethical behavior in issues facing chemists including an understanding of safe handling of chemicals, environmental issues and key issues facing our society in energy, health and medicine.
- Students will be able to explain why chemistry is an integral activity for addressing social, economic, and environmental problems.
- Increasing working knowledge of instruments. Obtaining the knowledge of pharmaceutical tables
- Social awareness about the quality of water,Awareness about plastic garbage.
- Increasing the practical skill of the students

M.Sc., CHEMISTRY

PROGRAM OUTCOME

- To know and understand in the fundamentals and application of current chemical and scientific theories.
- To design, carry out, record and analyze the results of chemical experiments.

- To know and understand the different properties and structures for organometallic compounds from different parts of the periodic table and their trends.
- To know principal synthetic routes to various classes of organometallic compounds.
- To know and understand the reactivity of organometallic compounds including their application in synthesis.
- Predict the major and minor products of a variety of organic reactions with appropriate stereochemistry and regiochemistry.
- Understand and reproduce accepted mechanisms of organic reactions including all intermediates, arrows, charges, and resonance structures.
- Understand and interpret spectra (IR, 1H NMR, 13C NMR, Mass Spec., and UV-VIS) of organic molecules.

B.Sc., CHEMISTRY 2022-23

Semester I

COURSE CODE : 22UCHEC13

COURSE TITLE : GENERAL CHEMISTRY – I

COURSE OBJECTIVES

- To provide basic idea about regarding atomic structure
- To impart knowledge about Periodic Properties, Bonding Concepts, Ionic Bond, VSEPR and MO Theories.
- To acquire in-depth knowledge about Nomenclature of Organic Compounds, Hybridisation, Reaction Intermediates.
- To inculate interest in Gaseous State, Kinds of velocities, Virial equation of state.
- Make the students to understand aboutLiquid state, Liquid crystals, Solid state, X-ray diffraction.

COURSE OUTCOMES

- Recollect the Chemistry of Quantum Numbers.
- Discuss various types of bonding through VB & MO theories.
- Name simple Aliphatic and Aromatic Compounds and Illustrate and apply electron displacement effects and reaction mechanisms.
- Understand Gaseous state, kinds velocities.
- Elaborate the basic concepts of solid and liquid states.

COURSE CODE : 22UCHEC14

COURSE TITLE : GENERAL CHEMISTRY – II

COURSE OBJECTIVES

- Lab safety and Nature of chemicals.
- Types of titrations and Concentration terms.
- Semimicro analysis and precipitation techniques.
- Organic analysis
- Logarithm, drawing graph, rules of differentiation and integration

COURSE OUTCOMES

After completion of the course students will be able to understand

- How to be safe in chemistry laboratory and handle chemicals carefully.

- Concentration terms, handling burette, pipette etc and various types of titrations.
- How qualitative methods are useful in finding inorganic radicals.
- Organic analysis.
- Taking logarithm, drawing graphs.

COURSE CODE : 22UPHYA01

COURSE TITLE : PHYSICS – I

COURSE OBJECTIVES

6. To understand the concept of elasticity and strength of solid materials, viscous properties of liquids and surface tension.
7. To acquire knowledge on centre of gravity, state of equilibrium and stability of floating.
8. To study the heat capacity, conduction, convection, and radiation
9. To understand conversion of heat into mechanical work.
10. To know the phenomena of light such as interference, diffraction, polarization, and their applications

COURSE OUTCOMES

Students studying this coursewould understand the following:

- Fundamentals of elasticity, theory of bending, flow of liquids and viscous forces and surface tension
- centre of gravity of bodies of different shapes, equilibrium of states and forces involved in stability of floating.
- transmission of heat by the processof conduction, convection, and radiation.
- various laws involved in heat transformation, thermodynamics, and the concept of entropy
- the phenomena like interference diffraction, and polarization, optical activity of liquids and its uses

Semester II

COURSE CODE: 22UCHEC23

COURSE TITLE: GENERAL CHEMISTRY-III

COURSE OBJECTIVES

- To obtain a comprehensive overview on s and p block elements.
- To understand the properties and reactions of alkanes, alkenes and alkynes.
- To impart knowledge regarding the basics of dienes and cycloalkanes.
- To understand the various terminologies and reactions related to Quantum Chemistry and Thermodynamics.
- To understand the laws and reactions related to Thermochemistry**.**

COURSE OUTCOMES

- Compare basic properties of elements and their Compounds of s & p block elements.
- Explain the reaction mechanisms of alkanes, alkenes and alkynes and predict the products.
- Classify dienes and analyze the stability of alkanes, alkenes and cycloalkanes.
- Recollect the basic concepts of Quantum Theory and Thermodynamics.
- Calculate thermodynamic parameters using thermochemical equations and data.

COURSE CODE: 22UCHEP24

COURSE TITLE : VOLUMETRIC ANALYSIS AND INORGANIC PREPARATIONS

COURSE OBJECTIVES

- To enhance the knowledge and principles behind volumetric analysis.
- To impart skills in weighing.
- To understand the principles of standardizing the solution using the analytical technique known as titration.
- To know about the uses of various indicators.
- To invoke the basic knowledge of various primary standard salts and their significance.

COURSE OUTCOMES

- Analyse the given unknown solution and assess its normality.
- Evaluate the amount of substance from normality.
- Able to plan experimental projects and execute them.
- Orient towards the important concepts of redox and precipitation titrations.
- Understand the laboratory techniques behind inorganic preparations.

COURSE CODE: 22UCHEE26-1

COURSE TITLE: INTERNAL ELECTIVE- I : HEALTH CHEMISTRY

COURSE OBJECTIVES

- To recognize the causes of common diseases, their control and treatment
- To understand the first aid for accidents
- To study the organic pharmaceutical aids

- To know about organic diagnostic agents
- To have an idea about diabetes and cancer.

COURSE OUTCOMES

- Describe the causes, control and treatment of common diseases.
- Understand the concepts of first aid for accidents.
- Classify different organic pharmaceutical aids.
- Explain organic diagnostic agents.
- Describe diabetes, cancer and their control and treatment.

COURSE CODE: 22UPHYA02

COURSE TITLE: PHYSICS II

COURSE OBJECTIVES

- To understand the concept and laws of electrostatics, working of capacitors.
- To acquire knowledge on current electricity, electromagnetic induction and resonance circuits.
- To understand the atom models, X-rays and nuclear properties and reactions.
- To study fundamentals of solid-state electronics diodes and transistors.
- To know the number system, logic gates and basic digital circuits.

COURSE OUTCOMES

Students studying Allied Physics-II would have learnt the following:

- Electric intensity, potential and capacitor principle and its types.
- laws used in electrical circuits, specific resistance measurement and laws of electro magnetic induction.
- various atom models, nuclear models, fission and fusion reactions.
- solid state electronic devices diode and transistor, their characteristics and applications.
- the number systems, conversion between them and logic gates and digital circuits.

COURSE CODE: 22UPHYP01

COURSE TITLE: PHYSICS PRACTICAL – I

COURSE OBJECTIVES

- To know the method of determining elastic properties of solids
- To learn the experimental method to determine surface tension and viscous properties of liquids
- To acquire knowledge of measurement of optical properties of solid
- To acquire knowledge to measure the size of very small objects.
- To gain knowledge of finding thermal properties of liquids
- To obtain the electrical properties of a conductor and to perform experiments to study the semiconductor devices and digital circuits.

COURSE OUTCOMES

After Completion of the Allied Physics Practical course the student would be conversant in measuring the

- Elastic properties
- Surface tension
- Viscous
- Thermal
- Electrical
- Optical properties and
- Acquired knowledge of semiconductor diodes and digital gates.

DEPARTMENT OF MSc. CHEMISTRY

SEMESTER: I

COURSE CODE : 22PCHEC11

COURSE TITLE : ORGANIC CHEMISTRY –

COURSE OBJECTIVES

- To learn the basic aspects of stereochemistry

- To gain knowledge about the reactive intermediate and reactions involving free radicals
- To study the mechanisms of Aliphatic Nucleophilic and electrophilic substitutions
- To learn the concepts of Aromaticity, Anti aromaticity and Homo aromaticity of Benzenoid and Non- benzenoid compounds
- To accrue skill of predicting the mechanisms of Aromatic substitution reactions.

COURSE OUTCOMES

At the end of the course, the student will be able to

- Describe the concept of Stereochemistry
- Compare the stabilities of various reactive intermediates.
- Analyse and propose reasonable mechanism for Substitutions in Aliphatic molecules
- Compare the stabilities of molecules based on aromaticity
- Analyze the mechanisms of Aromatic Substitution reactions

COURSE CODE : 22PCHEC12

COURSE TITLE : INORGANIC CHEMISTRY - I

COURSE OBJECTIVES

- To know about the structure and bonding of inorganic compounds and the inorganic polymers.
- To study the concept of coordination chemistry and stability of the complexes 3) To gain knowledge of metal-ligand orbital overlap, molecular orbital theory and energy level diagrams etc.,
- To learn about the mechanism of substitution reactions of octahedral complexes.
- To acquire skill of using substitution reactions of square planar complexes and electron transfer reactions for complexes.

COURSE OUTCOMES

The student will be able to

- Gain knowledge about the structure and bonding of Inorganic compounds and explain Isopolyacids and hetropolyacids of Vanadium, Chromium, Molybdenum and Tungsten.
- Illustrates the chemistry of metal clusters and discuss polyhedral boranes, carboranes and metallocarboranes
- Explain the stability constant of co-ordination complexes and stereo chemistry for co-ordination complexes
- Apply the molecular orbital theory and energy level diagrams, concept of weak and strong field ligands, Jahn-Teller distortion etc.,
- Illustrate the Substitution reactions of square planar complexes and electron transfer reactions

COURSE CODE : 22PCHEC13

COURSE TITLE : PHYSICAL CHEMISTRY –I

COURSE OBJECTIVES

- To understand the theories of chemical kinetics in reaction mechanisms.
- To apply the kinetic concepts in homogenous and heterogeneous catalyzed reactions.
- To study about Surface Chemistry, surface tension and catalysis.
- To identify the symmetry of elements, symmetry operations and apply the fundamentals of group theory in electronic spectroscopy
- To appreciate the principals involved in the Rotational and vibrational spectroscopic techniques.

COURSE OUTCOMES

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

- Derive the rate equation from mechanistic data and calculation
- Relate microscopic properties of molecules with macroscopic thermodynamic
- observables
- Gain knowledge about the Surface Chemistry and its mechanisms.
- Apply group theory for molecules like water, ethylene, butadiene etc…
- Imbibe basic aspects of spectroscopy and apply to poly atomic molecule

COURSE CODE : 22PCHEC14

COURSE TITLE : ORGANIC CHEMISTRY PRACTICAL - I

COURSE OBJECTIVES

- To learn to synthesise Organic molecules with the available substrates.
- Any Six preparations from the following:
- p-Nnitroacetanilide from Aniline (Acetylation and Nitration)
- Acetylsalicylic acid from methyl salicylate (Hydrolysis and Acetylation)
- 1,3,5-tribromo benzene from aniline (Bromination, Diazotisation and Hydrolysis) 4) p-
- Bromoacetanilide from aniline (Acetylation and Bromination)
- p-Bromoaniline from acetanilide (Bromination and Hydrolysis)
- m-Nitrobenzoic acid from methyl benzoate. (Nitration and Hydrolysis)
- p-Nitroaniline from acetanilide (Nitration and Hydrolysis)
- Bezanilide from benzophenone (Rearrangement)
- m-Nitrobenzoic acid from benzaldehyde (Oxidation and Nitration)

Preparations with Green chemistry procedures:

- Synthesis of Salicylic acid from Methyl salicylate
- Bromination of p-Bromoacetanilide from Acetanilide using CAN and KBr.
- Synthesis of Anisalacetophenone from Acetophenone and p-Methoxy benzaldehyde
- Synthesis of 3,5-Dimethylpyrazole from Acetylacetone and Hydrazine hydrate.

(Students are expected to submit recrystallized sample of the final products at the time of practical examination for the evaluation by the examiner)

COURSE OUTCOMES

At the end of the course, the student will be able to

- Acquire basic laboratory skills required to carry out organic reactions.
- Independently perform two step organic preparations.
- Analyse the mechanisms of reactions.
- Gain the expertise to solve specific research problems.
- Synthesise molecules with green chemistry procedures.

COURSE CODE : 22PCHEC15

COURSE TITLE : PHYSICAL CHEMISTRY PRACTICAL- I

COURSE OBJECTIVES

To learn the operations of instruments for calculating physical parameters.

- To impart skills in evaluation of physical parameters by various methods.
- To adopt different methods for validation of results.

Physical Chemistry Practical - I :

- Determination of cell constant-conductometric method
- Conductometry-Dissociation constant of weak electrolyte (verification of
- Ostwald's dilution law)
- Conductometry-Verification of DHO equation – Equivalent conductance of strong
- electrolyte
- Conductometric titration of HCl against NaOH.
- Conductometric titration of CH3COOH against NaOH.
- Conductometric titration of NH4OH against HCl.
- Neutral salt effect - Kinetics of reaction between iodide and Persulphate - Effect of
- ionic strength on rate constant.
- Polarimetry -Kinetics of inversion of Cane sugar.
- Kinetics of iodination of acetone.
- Kinetics of hydrolysis of ester - Comparison of acid strengths.
- Determination of Arrhenius parameters - Hydrolysis of methyl acetate by acid.
- Study of the equilibrium constant of the reaction: KI + I2 ⇆KI3.
- Kinetics of decomposition of sodium thiosulphate using 0.5N HCl.

COURSE OUTCOMES

At the end of this course, the students will be able to

- Interpret the experimental data of various physical parameters
- Analyse the physical parameters quantitatively and qualitatively
- Identify the suitable methodology to measure and characterise the physical parameters.

COURSE CODE : 22PCHEE16-1

COURSE TITLE : POLYMER CHEMISTRY

COURSE OBJECTIVES

- To provide a thorough understanding of the basic concept of polymers
- To gain knowledge about the different polymerization mechanisms
- To learn the molecular weight determination and characterization of polymers.
- To exploit the polymer processing techniques for various applications.
- To study the importance of advanced polymers

COURSE OUTCOMES

On completion of the course, students should be able to

- Understand the basic concept of polymers and the chemistry of organic and inorganic polymers
- Understand the kinetics and mechanism of various polymerization techniques.
- Choose an appropriate analytical method to characterize polymers.
- Select an appropriate moulding technique to process a particular polymer.
- Realize the importance of advanced polymers.

SEMESTER: II

COURSE CODE : 22PCHEC21

COURSE TITLE : ORGANIC CHEMISTRY - II

COURSE OBJECTIVES

- To learn about the conformations and reactivity of the substituted six memberedring systems
- To understand the mechanisms of addition and elimination reactions.
- To learn the name reactions with their mechanisms
- To learn the synthetic utilities of various oxidation and reduction reactions.
- To acquire knowledge on the various concepts of reaction kinetics and the HSAB principle.

COURSE OUTCOMES

At the end of the course the student will be able to,

- Compare the stability and reactivity of different conformers of Cyclohexane derivatives
- Solve problems based on additions to Carbon – Carbon and Carbon – Hetero atom multiple bonds.
- Propose mechanisms and predict the products with proper stereochemistry for various elimination reactions.
- Have a thorough knowledge of using proper reagents for specific Oxidation and Reduction reactions.
- Apply HSAB principle to Organic reactions and have sufficient knowledge on reaction kinetics and mechanism

COURSE CODE : 22PCHEC22

COURSE TITLE : INORGANIC CHEMISTRY – II

COURSE OBJECTIVES

- To make the students knowledgeable in solid state chemistry.
- To study about stellar energy, nuclear reactions etc and to equip the students for their future career in nuclear industry.
- To learn the chemistry of lanthanides and actinides
- To understand the inorganic photo chemistry.
- To gain knowledge about the bio inorganic complexes.

COURSE OUTCOMES

At the end of the course students will be able to

- Explain the solid-state structures and structural defects
- Explain the nuclear models, Categorize the nuclear reactions, radio analytical

techniqus.

- Describe chemistry of lanthanides and actinides.
- Analyze and interpret the photo inorganic chemistry reactions.
- Describe the chemistry of bio inorganic complexes.

COURSE CODE : 22PCHEC23

COURSE TITLE : PHYSICAL CHEMISTRY - II

COURSE OBJECTIVES

- To know the foundations and the physical and mathematical basis of quantum mechanics and to apply the concepts of quantum mechanics to solve problems in microscopic systems.
- To understand the quantum mechanical approach to the atomic and molecular

electronic structure and to know the limitations of quantum chemistry in the evaluation of macroscopic properties

- To know the mechanisms of photo chemical reaction
- To know the construction of phase diagram for one, Two and three component systems
- To understand the catalysis of reactions.

COURSE OUTCOMES

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

- Identify the application of quantum chemistry in MO and VB theories and construct hybridization schemes.
- Derive the equation for one dimensional and two-dimensional boxes.
- Identify the photo chemical reactions
- Construct the phase diagram for the Three components system.
- Illustrate the use of catalysis in reactions.

COURSE CODE : 22PCHEC24

COURSE TITLE : ORGANIC CHEMISTRY PRACTICAL - II

COURSE OBJECTIVES

1) To learn the methods of separating the components of an organic mixture
2) To analyse the organic compounds based on the organic analysis.
3) To identify the whether the compound is saturated or unsaturated and aliphatic or aromatic.
4) Confirm the particular functional group by confirmatory test.
5) To prepare the derivate of that particular functional group.

COURSE OUTCOMES

At the end of the course, the student will be able to,
1) Gain expertise in separating the components of an organic mixture.
2) Acquire the necessary practical skills to independently analyse organic compounds.

3) Systematically evaluate organic compounds.
4) Apply the knowledge in analysing new samples.
5) Apply the knowledge in synthesizing new molecules

COURSE CODE : 22PCHEC25

COURSE TITLE : INORGANIC CHEMISTRY PRACTICAL - I

COURSE OBJECTIVES

To get the skill in the identification of cations including rare earth metals and to develop the skill in the preparation of metal complexes.

COURSE OUTCOMES

At the end of the course, the student will be able to
1) Acquire the necessary practical skills to independently analyze inorganic compounds
2) Gain expertise in the systematic analysis of inorganic compounds.
3) Apply the knowledge in industries.
4) Gain knowledge on the preparation of complexes

COURSE CODE : 22PCHEE26 -1
COURSE TITLE: GREEN CHEMISTRY

COURSE OBJECTIVES
Enable the students to
1) Understand the basic principles and importance of green chemistry for industrial applications
2) Acquire knowledge about the microwave and ultra sound assisted synthesis
3) Understand the concept of phase-transfer catalysis
4) Gain knowledge about ionic liquids, green reagents,
5) Crown ether and their applications

COURSE OUTCOMES :

- Define green chemistry and explain basic principles
- Discuss and appraise green reagents and microwave assisted green synthesis
- Analyse the synthetic applications of ultra sound assisted green synthesis and ionic liquids.
- Apprise the advantages and applications of phase transfer catalysis in organic synthesis.
- Suggest crown ether for different reactions in organic synthesis.

DEPARTMENT OF COMMERCE
PROGRAM OUTCOME

Program Outcomes of M.Com:

Students taking admission for program are required to imbue with following qualities

1. Enriched knowledge with new ideas and techniques essential for business and management.
2. Mastery over specific skills in business.
3. Capability to acquire and handle any position in business.
4. Develop analytical interpretative and presentation skill regarding research in commerce and management.
5. Creating awareness about the modern trends in the management and impact of globalization.
6. Familiarizing with the foundations of individual and group behavior and the concepts of organizational behavior.
7. Deep study of different concepts and methods to measure national income of economy managerial economics helps to understand role and function of central monetary authority in economy.
8. Acquaintance with important accounting standards.
9. Attainment of knowledge of various provisions of income tax act 1961 and its implication in computation of income relating to individual.
10. Training of computation of taxable income of different business entities.
11. Knowledge about the application of accounting techniques for management.
12. Acquaintance the standards cost accounting procedure and techniques. Making capable of decision making at various level of production.

Program Outcomes of B.Com:

1. Enriched knowledge with new ideas and techniques essential for business and management.
2. Capability to acquire and handle any position in business.
3. Attainment of knowledge of various provisions of income tax act 1961 and its implication in computation of income relating to individual.
4. Training of computation of taxable income of different business entities.
5. Students will demonstrate progressive affective domain development of values the role of accounting in society and business.
6. Learners will acquire the skills like effective communication, decision making, problem solving in day to day business affairs.
7. Learners will be able to prove proficiency with the ability to engage in competitive exams like CA, CS, ICWA and other courses.
8. Learners will be able to do higher education and advance research in the field of commerce and finance.
9. Learners can also acquire practical skills to work as tax consultant, audit assistant and other financial supporting services.

Program Outcomes of B.Com CA:

1. They can go for higher degree programs in respective subjects as master degree(post Graduate).
2. They can find job opportunities in a variety of environments in university, private and public industries, government departments, business organizations and commercial organizations.
3. Degree holders can also work as programmers, web developers and E-Commerce specialists with industries that build or use computer based systems, such as tele- Communications, automotive etc.,
4. They have jobs in design and development company, computer networking company, software development company etc.,
5. Improve their computer literacy their basic understanding of operative systems and a working knowledge of software commonly used in academic and professional environments.

6. To build a strong foundation of knowledge in different areas of commerce.
7. Students will demonstrate progressive affective domain development of values, the role of accounting in society and business.

B.COM – ODD SEMESTER

22UCOMC13: FINANCIAL ACCOUNTING – I

COURSE OBJECTIVES

1) To acquaint a strong basic knowledge on Principles and practical applications of Double entry system of accounting.
2) To gain expertise in the preparation of the Final Accounts as per the Accounting Standards
3) To provide knowledge on accounting for Depreciation
4) To inculcate the knowledge on Bills of Exchange and Bank Reconciliation Statement
5) To give insights about the preparation of Single-Entry System and its conversion into double entry system of accounting

COURSE OUTCOMES

After the completion of the course, the learner would be able to:

1) Recall the basic principles, concepts and fundamentals of Double Entry System Accounting
2) Apply analytical and technical skills in the preparation of Final Accounts
3) Identify and familiarize the different methods of depreciation accounting
4) Grasp the accounting treatments of Bills and preparation of Bank Reconciliation Statement
5) Acquire knowledge on preparing the accounts in Single Entry system (Murthy, 2019)

22UCOMC14: BUSINESS ORGANISATION

COURSE OBJECTIVES

1) To understand the concept of business and profession
2) To identify the different forms of business organization
3) To analyse the factors influencing the business location.
4) To appraise the working of chamber of commerce and trade associations
5) To evaluate the difference between IC, MNC, GC and TNCs6)

COURSE OUTCOMES

After the completion of the course, the student would be able to:
1) Familiarize with Modern Business and Profession.
2) Identify different forms of business organizations viz; Sole Proprietorship, Partnership, Joint stock companies & Co-operative Organizations.
3) Acquire knowledge about the locational advantages.
4) Understand different forms of business combination and their relative merits.
5) Distinguish and outline the characteristics of MNCs, GC and TNCs.

COMPUTER APPLICATION IN BUSINESS

COURSE OBJECTIVES

1) To acquire and apply the computer applications in different aspects of business
2) To get an insight knowledge on Ms-office,Ms-excel.
3) To know the database maintenance in every type of applications.
4) To analyse the various types of charts in Ms.Excel
5) To develop the programs in Ms-word and Ms-excel.

COURSE OUTCOMES

After the completion of course, the students would be able to:
1) Work with the required skills in Ms Office for office administration.
2) Work with the required set in MS Excel.
3) Use various math functions of MS Excel in business calculation.
4) Work with draw graphs using MS Excel.
5) Extract data using filter option in MS Excel.

22UECOA01: BUSINESS ECONOMICS - I

COURSE OBJECTIVES

1) To expose students to economic concepts and analytical approach.
2) To make them understand the role and responsibilities of business.
3) To make them to apply economic concepts in decision making.
4) To make them acquire knowledge about economic concepts which are used in business.
5) To make them apply economic concepts to different economic and business conditions.

COURSE OUTCOMES

After the completion of the syllabus the students
1) Understand the meaning and importance of business economics and role of business
2) Understand cardinal and ordinal utility analysis
3) Get knowledge about demand, supply and elasticity of demand
4) Get knowledge about demand forecasting and use in business

5) Understand production function and laws.

22UCOMS17: PRINCIPLES OF MARKETING

COURSE OBJECTIVES

1) To conceptualize an idea about marketing and related terms
2) To provide insight about various forms and types of marketing
3) To analyze various components of Promotion
4) To understand various concepts relating to Pricing
5) To introduce the components of marketing mix

COURSE OUTCOMES

On Successful completion of the course, student will be able to
1) Know the basic principles and practices of marketing.
2) Understand about market segmentation
3) Understand the pricing mechanism of marketing.
4) Understand the types of pricing
5) Understand the concepts of Sales Promotion

B.COM – EVEN SEMESTER

22UCOMC23: FINANCIAL ACCOUNTING – II

COURSE OBJECTIVES

1) To give an insight about Account Current and Average Due Date
2) To understand the branch accounts and its types
3) To have practical knowledge in the preparation departmental accounting
4) To familiarize with accounting procedure on Partnership – Admission and IIRetirement
5) To acquire practical knowledge in Partnership accounts on Dissolution

COURSE OUTCOMES

At the completion of course, the learners would be able to:
1) Understand the concept and gain the knowledge on Average Due Date and Account Current.
2) Be familiar with the nuances of different systems of accounting followed in Branches.
3) Acquire the knowledge about Departmental Accounts.
4) Be acquainted with the accounting treatments required for admission, retirement and death of partners in Partnership firms.
5) Understand the accounting procedures involved in the Dissolution of firm under different situations.

22UECOA03: BUSINESS ECONOMICS II

COURSE OBJECTIVE

1) To make students to understand about the cost and revenue concepts
2) To make them understand pricing under different market structures
3) To give them knowledge about theories of distribution
4) To make them understand the different pricing methods
5) To make them understand the techniques of capital budgeting

COURSE OUTCOME

After the completion of the course the students would be able to
1) Understand cost and revenue concepts
2) Gain knowledge about pricing under different market conditions
3) Get knowledge about theories of distribution and determination of profit
4) Learn about the pricing methods
5) Analyse capital budgeting

22UCOMS26: ADVERTISING AND SALESMANSHIP

COURSE OBJECTIVES

1) To understand the concept of advertising
2) To enable the students to have practical knowledge about advertising agencies
3) To familiarize about recent trends in advertising
4) To have knowledge on fundamental concept of salesmanship
5) To understand the duties and responsibilities of salesmanship

COURSE OUTCOMES

On Successful completion of the course, student will be able to
1) Impart knowledge on advertising.
2) Get familiarized about advertising agencies.
3) Get familiarized about recent trends in advertising.
4) Acquire knowledge on fundamental concept of salesmanship.
5) Impart knowledge on duties & responsibilities of salesmanship.

B.COM CA - ODD SEM

22UCOAC13: FINANCIAL ACCOUNTING – I

COURSE OBJECTIVES

1. To acquaint a strong basic knowledge on Principles and practical applications of

Double entry system of accounting.
2. To gain expertise in the preparation of the Final Accounts as per the Accounting Standards
3. To provide knowledge on accounting for Depreciation
4. To inculcate the knowledge on Bills of Exchange and Bank Reconciliation Statement
5. To give insights about the preparation of Single-Entry System and its conversion into Double entry system of accounting.

COURSE OUTCOMES

After the completion of the course, the learner would be able to:
1) Recall the basic principles, concepts and fundamentals of Double Entry System Accounting
2) Apply analytical and technical skills in the preparation of Final Accounts
3) Identify and familiarize the different methods of depreciation accounting
4) Grasp the accounting treatments of Bills and preparation of Bank Reconciliation Statement
5) Acquire knowledge on preparing the accounts in Single Entry system

22UCOAC14: BUSINESS ORGANISATION

COURSE OBJECTIVES

1. To understand the concept of business and profession
2. To identify the different forms of business organization
3. To analyse the factors influencing the business location.
4. To appraise the working of chamber of commerce and trade associations
5. To evaluate the difference between IC, MNC, GC and TNCs

COURSE OUTCOMES

After the completion of the course, the student would be able to:
1. Familiarize with Modern Business and Profession.
2. Identify different forms of business organizations viz; Sole Proprietorship, Partnership, Joint
stock companies & Co-operative Organizations.
3. Acquire knowledge about the locational advantages.
4. Understand different forms of business combination and their relative merits.
5. Distinguish and outline the characteristics of MNCs, GC and TNCs.

COMPUTER APPLICATION IN BUSINESS

COURSE OBJECTIVES

1) To acquire and apply the computer applications in different aspects of business
2) To get an insight knowledge on Ms-office,Ms-excel.

3) To know the database maintenance in every type of applications.
4) To analyse the various types of charts in Ms.Excel
5) To develop the programs in Ms-word and Ms-excel.

COURSE OUTCOMES

After the completion of course, the students would be able to:
1) Work with the required skills in Ms Office for office administration.
2) Work with the required set in MS Excel.
3) Use various math functions of MS Excel in business calculation.
4) Work with draw graphs using MS Excel.
5) Extract data using filter option in MS Excel.

22UECOA01: BUSINESS ECONOMICS - I

COURSE OBJECTIVES

1) To expose students to economic concepts and analytical approach.
2) To make them understand the role and responsibilities of business.
3) To make them to apply economic concepts in decision making.
4) To make them acquire knowledge about economic concepts which are used in business.
5) To make them apply economic concepts to different economic and business conditions.

COURSE OUTCOMES

After the completion of the syllabus the students
1) Understand the meaning and importance of business economics and role of business
2) Understand cardinal and ordinal utility analysis
3) Get knowledge about demand, supply and elasticity of demand
4) Get knowledge about demand forecasting and use in business
5) Understand production function and laws.

22UCOAS17: ADVERTISING AND SALESMANSHIP

COURSE OBJECTIVES

1) To know the fundamental aspects of advertising.
2) To prepare the advertising copy.
3) To be aware of the recent trends in advertising.
4) To know the basic aspects of the salesmanship.
5) To understand the duties and responsibilities of salesman

COURSE OUTCOMES

After completing this course, the student will be able to:
1) Understand the basic concepts of advertising
2) Analyse the role of advertising media and advertising agency.
3) Evaluate the social and ethical aspects of advertising.
4) Apply the procedure involved in the recruitment of salesman.
5) Distinguish between salesmanship and advertising.

B.COM CA - EVEN SEM

22UCOAC23: FINANCIAL ACCOUNTING - II

COURSE OBJECTIVES

1) To give an insight about Account Current and Average Due Date.
2) To understand the branch accounts and its types.
3) To have practical knowledge in the preparation departmental accounting.
4) To familiarize with accounting procedure on Partnership – Admission and Retirement.
5) To acquire practical knowledge in Partnership accounts on Dissolution.
Alliled Course – II

COURSE OUTCOMES

At the completion of course, the learners would be able to:

1) Understand the concept and gain the knowledge on Average Due Date and Account Current.
2) Be familiar with the nuances of different systems of accounting followed in Branches.
3) Acquire the knowledge about Departmental Accounts.
4) Be acquainted with the accounting treatments required for admission, retirement and death of partners in Partnership firms.
5) Understand the accounting procedures involved in the Dissolution of firm under different
situations.

22UECOA03: BUSINESS ECONOMICS II

COURSE OBJECTIVE

1) To make students to understand about the cost and revenue concepts
2) To make them understand pricing under different market structures
3) To give them knowledge about theories of distribution
4) To make them understand the different pricing methods
5) To make them understand the techniques of capital budgeting

COURSE OUTCOME

After the completion of the course the students would be able to
1) Understand cost and revenue concepts
2) Gain knowledge about pricing under different market conditions
8) Get knowledge about theories of distribution and determination of profit
4) Learn about the pricing methods
5) Analyse capital budgeting

22UCOAS26: PRINCIPLES OF INSURANCE

COURSE OBJECTIVES

1. To familiarize the nature and principles of Insurance.
2. To acquire knowledge on the various policies and procedures of life insurance.
3. To learn the working of fire insurance.
4. To acquire knowledge on the procedure for claiming marine insurance.
5. To gain knowledge on the benefits of personal accident, motor and burglary insurance.

COURSE OUTCOMES

1) Understand the basics of insurance.
2) Compare and Contrast the various types of life insurance policies.
3) Get the knowledge on policy conditions and claim procedure relating to fire insurance.
4) Classify various policies relating to marine insurance.
5) Appraise various forms of insurance including social insurance.

M.COM - ODD SEM

22PCOMC11: STRATEGIC FINANCIAL MANAGEMENT

COURSE OBJECTIVES

1) To have the understanding of the functions of finance management
2) To expand the awareness of long term sources of funds.
3) To facilitate the students to the understanding of capital structure and leverage
4) To bring subject knowledge about capital investment decision among the students.
5) To let students to be acquainted with the subject of working capital management.

COURSE OUTCOMES

1) After studied Unit-1, the student will be able to understand the functions of finance Management.
2) After studied Unit-2, the student will be able to know about the long term sources

of funds and environment of working capital.
3) After studied Unit-3, the student will be able to gain information about capital structure and leverage
4) After studied Unit-4, the student will be able to gain knowledge about capital investment decision
5) After studied Unit-5, the student will be able to be acquainted with on the subject of working capital Management.

22PCOMC12: MANAGERIAL ECONOMICS

COURSE OBJECTIVES

1) To enable the students to know the scope and application of managerial economics.
2) To knowledge the students to know the managerial use of production function.
3) To study about a different marketing structures.
4) To know about profit planning and forecasting.
5) To study on business cycle and policies.

COURSE OUTCOMES

On successful completion of the subject, the students acquired knowledge about;
1. The scope and application of managerial economics.
2. Managerial use of production function.
3. Different marketing structures.
4. Profit planning and forecasting.
5. Business cycle and policies.

22PCOMC14: MERCHANT BANKING AND FINANCIAL SERVICES

COURSE OBJECTIVES

To enable student
1) Understand the modes of issuing securities
2) Acquire financial evaluation technique of leasing and hire purchase

COURSE OUTCOMES

1) Good knowledge on merchant banking activities

22PCOMC13: ADVANCED BUSINESS STATISTICS

COURSE OBJECTIVES

1) To enhance the students to know about multiple correlation and multiple regression.
2) To extend the knowledge of technique of probability.
3) To facilitate the students to have the deep knowledge on sampling methods,

proportions-large and small samples- Z test and T test.
4) To bring the students to get information about chi square test.
5) To know about F-Test and ANOVA.

COURSE OUTCOMES

On successful completion of the subject, the students acquired knowledge about;
1) Partial and Multiple correlations.
2) Probability and Binomial distribution.
3) Sampling, Hypothesis, Z Test and T Test.
4) Application of Chi – square test.
5) Analysis of variance and F test.

22PCOME15-2: HUMAN RESOURCE MANAGEMENT

COURSE OBJECTIVES

1) To enable the students to have a thorough understanding of changing role of HRM in global and Indian perspective.
2) To disseminate the students about various methods of recruitment, training and performance appraisal techniques.
3) To impart the students to gain expert knowledge of various theories of motivation and human resource audit.

COURSE OUTCOMES

After successful completion of the course, the students will able to:
1) Comprehend the fundamentals of Human Resource Management
2) Compute job analysis report and be able to develop job description and job specification.
3) Describe the various motivational applications in practice
4) Explain performance appraisal techniques and able to prepare performance appraisal forms
5) Develop human resource audit plan and conduct HR audit.

M.COM., - EVEN SEM

22PCOMC21: ACCOUNTING FOR MANAGERS

COURSE OBJECTIVES

1) To understand the basic principles and concepts in accounting
2) To draft the final accounts as per accounting standards
3) To acquire knowledge in Rectification of errors and Bank Reconcilation statement
4) To analyse the financial statements like ratios and funds flow statements

5) To enable students to learn the elements of cost

COURSE OUTCOMES

After the successful completion of the course, the students will be able to:
1) Understand the need and types of Accounting, Users of Accounting concepts and conventions
2) Gain knowledge in preparing financial statements
3) Acquire knowledge on preparing the Bank reconciliation statement
4) Understand and apply the different types of ratios
5) Learn the elements of cost

22PCOMC22: INCOME TAX LAW AND PRACTICE

COURSE OBJECTIVES

To get the students to acquaint with knowledge on the provisions of Income Tax Regulations in India
1) To educate the students on computation of income from various sources
2) To impart knowledge to the students to file tax returns

COURSE OUTCOMES

1) Understand the concept of income
2) Compute the total income of various kinds of assesses
3) Understand the clubbing of income and carry forward of losses
4) Determine the tax liability under different heads of income
5) Get familiarized with filing of return on different kinds of assesses

22PCOMC23: SECURITY ANALYSIS AND PORTFOLIO MANAGEMENT

COURSE OBJECTIVES

1) To enable the students to know the meaning and types of security analysis & portfolio management.
2) To make the students to understand the meaning and features of hire purchase.
3) To develop Knowledge about mutual funds.
4) To Knowledge the students to know the meaning and features of venture capital.
5) To enhance the students to know about the significance and types of Factoring.

COURSE OUTCOMES

On successful completion of the subject, the students acquired knowledge about;
1) Meaning and types of security analysis & portfolio management.
2) The meaning and features of hire purchase.
3) Develop Knowledge about mutual funds.
4) Meaning and features of venture capital.
5) Significance and types of Factoring.

22PCOMC24: DIGITAL BANKING

COURSE OBJECTIVES

1) To enable the students to know the banking legislation in India.
2) To study the changing scenario of Indian banking system.
3) To know about the bank deposits, loans and advances.
4) To study on demonetization and remonetization.
5) To study on payment system and digital banking.

COURSE OUTCOMES

On successful completion of the subject, the students acquired knowledge about;
1) Banking legislation in India.
2) The changing scenario of Indian banking system.
3) Bank deposits, loans and advances.
4) Demonetization and remonetization.
5) Payment system and digital banking.

22PCOME25-3: BUSINESS ENVIRONMENT

COURSE OBJECTIVES

1) To understand the concepts of Business Environment.
2) To identify the Social Responsibility of Business to different stakeholders
3) To understand How Economic Environment in Industrial Development Policies - Industrial policy, Fiscal policy, Monetary policy, Economic Reforms in India
4) To understand the Socio-Cultural Environment.
5) To familiarize with the Technological Environment and Modernisation of Technology.

COURSE OUTCOMES

1) The students will able to learn Theoretical Framework of Business Environment.
2) The students will able to make the student knowledge about business Economic Environment of Business.
3) The students will able to Familiarize Current Political and Legal Environment.

4) The students will able to understand the Social Cultural Environment and Ethics.
5) The students will able to learn the Latest Technology Environment for Business.