



Hindusthan College of Arts & Science

An Autonomous Institution – Affiliated to Bharathiar University

Approved by AICTE and Govt. of Tamilnadu

Accredited by NAAC – An ISO Certified Institution

Coimbatore – 641 028

PEO-PO-CO MANUAL

(PEO - Programme Educational
Objectives)

(PO - Programme Outcomes)

(CO - Course Outcomes)

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LANGUAGES

COURSE OUTCOMES

SEMESTER I & SEMESTER II

Course Code: 20LAT01 & 20LAT02

Course Name: Tamil I & Tamil II

- CO1** To acquire the communicative skills of languages.
- CO2** To interpret their vocabulary in Tamil
- CO3** To make use of the language in their respective course
- CO4** To discover the rich values of life and Tamil culture

**Course Code: 20LAM01 &
20LAM02**

Course Name: Malayalam I & Malayalam II

- CO1** Comprehend the sentence structures in various genres
- CO2** Understand the text styles
- CO3** Interpret text by relating them to other materials
- CO4** Develop an interest in the appreciation of literature

Course Code: 20LAH01 & 20LAH02

Course Name: Hindi I & Hindi II

- CO1** To acquire the communicative skills of Language.
- CO2** To interpret their vocabulary in Hindi.
- CO3** To make use of the language in their respective course.
- CO4** To discover the rich values of life and culture

Course Code: 20LAF01 & 20LAF02

Course Name: French I & French II

- CO1** Comprehend the grammatical structures in various genres
- CO2** Understand the text styles and grammatical elements
- CO3** Develop an interest in the appreciation of literature
- CO4** Discuss and respond to content of a reading passage

Course Code: 20LAF01 & 20LAF02

**Course Name: Communicative French I &
Communicative French II**

- CO1** Comprehend the grammatical structures in various genres
- CO2** Understand the text styles and grammatical elements
- CO3** Develop an interest in the appreciation of literature
- CO4** Discuss and respond to content of a reading passage

SEMESTER III

Course Code: 19LAT03

Course Name: Tamil III

- CO1** Comprehend the grammatical structures in various genres
- CO2** Understand the text styles and grammatical elements
- CO3** Develop an interest in the appreciation of literature
- CO4** Discuss and respond to content of a reading passage
- CO5** Develop a skill in translation

Course Code: 19LAM03

Course Name: Malayalam III

- CO1** Develop poetic ability
- CO2** Develop aesthetic thinking
- CO3** Realize the role of poetry in social movements
- CO4** Develop creative writing ability and an interest in the appreciation of literature
- CO5** Develop a skill in translation

Course Code: 19LAH03

Course Name: Hindi III

- CO1** Comprehend the grammatical structures in various genres
- CO2** Understand the text styles and grammatical elements
- CO3** Develop an interest in the appreciation of literature
- CO4** Discuss and respond to content of a reading passage
- CO5** Develop a skill in translation

Course Code: 19LAF03

Course Name: French III

- CO1** Comprehend the grammatical structures in various genres
- CO2** Understand the text styles and grammatical elements
- CO3** Develop an interest in the appreciation of literature
- CO4** Discuss and respond to content of a reading passage
- CO5** Develop a skill in translation

SEMESTER IV

Course Code: 19LAT04

Course Name: Tamil IV

- CO1** To enable the learners to acquire the communicative skills of languages.
- CO2** To enrich their vocabulary in TAMIL.
- CO3** To build confidence in TAMIL language.
- CO4** To develop the translation and letter writing skills.
- CO5** To know the rich values of our life and Indian culture.

Course Code: 19LAM04

Course Name: Malayalam IV

- CO1** Develop artistic ability
- CO2** Know visual artistry
- CO3** Develop the ability to criticize and analyse the artistic possibilities
- CO4** Critical value of the art is realized
- CO5** Develop a skill in translation

Course Code: 19LAH04

Course Name: Hindi IV

- CO1** Comprehend the grammatical structures in various genres
- CO2** Understand the text styles and poetical elements
- CO3** Develop an interest in the appreciation of literature
- CO4** Discuss and respond to content of a reading passage
- CO5** Develop a skill in letter writing and translation

Course Code: 19LAF04

Course Name: French IV

- CO1** To enable the learners to acquire the communicative skills of languages.
- CO2** To enrich their vocabulary in French.
- CO3** To build confidence in French language.
- CO4** To develop the translation and letter writing skills.
- CO5** To know the rich values of our life and culture.

PROGRAMME NAME: B.A. (English)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Understand the world of English Literature through exposure to literary works in English.
PEO2	Have a comprehensive idea about English literary texts is achieved by the study of historical aspects, theoretical aspects and literary criticism

PROGRAMME OUTCOMES

PO1	Able to deliver knowledge and understanding of English Language and Literature in totality
PO2	Able to demonstrate comprehensive knowledge of literature in their chosen domain.
PO3	Empowered with leadership qualities and diverse learning by cultivating versatile skills of teamwork, morality, ethics, communication and analytical skills
PO4	Molded the students as communication experts, trainers, public relation Officials, sales personnel and future teachers.
PO5	Able to develop a basic knowledge of English Studies that will help the students to become creative writers and translators.

COURSE OUTCOMES

SEMESTER I

Course Code: 20ENU01

Course Name: Short Fiction

CO1	Assess Indian history, culture and literary tradition as revealed through the authors of Indian Writing in English.
CO2	Understand and analyse the socio-cultural aspect of the society with the help of fiction
CO3	Understand and examine the social, historical and political backgrounds of the novelists and short story writers through the allegorical descriptions in the prescribed fiction.
CO4	Analyze the plot, character and the techniques in the fiction.

Course Code: 20ENU02**Course Name: One Act Plays**

- CO1** Understand values by means of justice in tragedy or comedy and examine human actions and their consequences in life
- CO2** Analyse the diverse group of play wrights and their style of writing
- CO3** Assess the literary devices used in plays and identify the structure of one-act plays, the dramatic devices and analyze the effect it creates in the audience.
- CO4** Appraise the theme and setting of the plays.

Course Code: 20ENU03**Course Name: Allied(Eng)I - Social History of England**

- CO1** Analyze the critical ideas and values age wise
- CO2** Understand how the religious, social and political changes influence the society
- CO3** Analyze the themes that appear in literary and cultural text
- CO4** To identify, analyze and interpret arguments based on the ages.

SEMESTER II**Course Code:20ENU04****Course Name: Prose**

- CO1** Identify and appreciate the essayists of the different ages.
- CO2** Analyze the stylistic use of language.
- CO3** Familiarize with the writing styles of the various writers and analyse the background of authors and their culture in the respective era.
- CO4** Analyze the structure and style of Prose works

Course Code: 20ENU05**Course Name: Poetry**

- CO1** Comprehend and analyse the Poetic devices in poetry.
- CO2** Recognize and examine poetry from a variety of cultures, languages and historic periods
- CO3** Understand and appreciate poetry as a literary art form.
- CO4** Analyze new dimensions in connecting emotions and languages in poems

Course Code:20ENU06**Course Name: Allied (Eng) II - History of English Literature**

- CO1** Understand and analyse the literature influences in the Social and political history of each period.

- CO2** Analyze the growth of literary genres of specific periods
- CO3** Appreciate major writers and their works in chronological Order
- CO4** Identify the literary, cultural, historical, political influence of fictional works in the literary world

SEMESTER III

Course Code: 19ENU07

Course Name: British Drama

- CO1** Appraise on the world's classic British drama.
- CO2** Improve their critical perception and dramatic imagination
- CO3** Analyze effectively and efficiently with change, extended speaking tasks and unplanned, impromptu speaking in tough speaking.
- CO4** Express their talents in front of an audience after developing confidence, creativity and communication through the plays.

Course Code: 19ENU08

Course Name: Fiction

- CO1** Analyze the structure of a Novel and learn the narrative devices used in writing a Novel Comply the concepts of various types of Novel viz. Short fiction, Novella through the prescribed texts and analyze the effect they create in the audience or readers. Interpret literary texts in English by nurturing and utilizing their ability to understand novels in a skilled, knowledgeable, and ethical manner.
- CO2** Comply the concepts of various types of Novel viz. Short fiction, Novella through the prescribed texts and analyze the effect they create in the audience or readers.
- CO3** Interpret literary texts in English by nurturing and utilizing their ability to understand novels in a skilled, knowledgeable, and ethical manner.
- CO4** Describe the elements of fiction – Narrative Technique, Setting, Point of view, Style and Detective fiction.

Course Code: 19ENU09

Course Name: Literary Forms

- CO1** Identify the variety of genres and to have knowledge about the Literary forms
- CO2** Recognize the challenges of each genre and critically appreciate them.
- CO3** Interpret Literary Texts to enhance their knowledge about poetry and its genres.
- CO4** Prepare the students to have thorough knowledge of the important literary genres and significant literary movement in English.

SEMESTER IV

Course Code: 19ENU10

Course Name: Biographies

- CO1** Analyze the structure of biographies and learn the narrative devices used in writing a Biography
- CO2** Recognize the challenges that others have overcome and they can make connections to their own lives
- CO3** Interpret literary texts in English by nurturing and utilizing their ability to understand biographies in a skilled, knowledgeable, and ethical manner.
- CO4** Prepare the students to learn, describe and discuss the life of a real person.

Course Code: 19ENU11

Course Name: British Poetry

- CO1** Evaluate the students for to enrich their vocabularies and to develop an appreciation of language and its connotations
- CO2** Develop their critical thinking skills
- CO3** Denotations Illustrate a deeper appreciation of cultural diversity by introducing them to poetry from a variety of cultures throughout the world.
- CO4** Identify a variety of forms and genres of poetry from diverse cultures and historic periods, such as haiku, tanka, sonnets, ballads, dramatic monologues, free verse, etc.

Course Code: 19ENU12

Course Name: Allied (Eng) IV – Literary Criticism

- CO1** Evaluate the works of each age to understand the literary text better.
- CO2** Applying the basic premises of selected theories.
- CO3** Recognize and critique the argument underlying critical writings
- CO4** Identify the critical perspectives to the history of western ideas.

PROGRAMME NAME: B.Com.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	The students have the fundamental knowledge in Accounting, Finance, Investment, Laws, Auditing and Taxation. Practical knowledge basic computer skills and computer accounting.
PEO2	The students have job oriented skills, quantitative and qualitative knowledge in the career of business.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: To make the students to acquire knowledge, job oriented quantitative and qualitative skills for their future careers in business.
PO2	ANALYSING AND PROBLEM SOLVING: Develop the strong knowledge in the areas of finance, taxation and laws relating to commerce for analyzing the problems and issues and give appropriate solution.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: To make the students morally conscious and socially responsible towards maintaining business standards by following the environmental safety and ethical values.
PO4	TEAM WORK & COMMUNICATIVE SKILLS: - Develop communication skills, team work and leadership skills for facing various challenges of the corporate world.
PO5	SELF DIRECTED / LIFELONG LEARNING: To enable the students to acquire interpersonal skills and others skills and use their intellectual for developing their professional career.

COURSE OUTCOMES

SEMESTER I

Course Code: 20COU01

Course Name: Principles of Accountancy

CO1	Acquire the basic accounting knowledge to prepare effective and ethical financial statements of all type of business
CO2	Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP
CO3	Demonstrate and apply various accounting practices applicable to all type of business
CO4	Analyze the financial statements of all business types to enhance the knowledge of accounting

Course Code: 20COU02

Course Name: Principles of Management

- CO1** Describe the concept of management functions and principles.
- CO2** Discuss the need for effective implementation of managerial aspects in business.
- CO3** Examine and interpret influence of management principles in the organization structure and functions.
- CO4** Explain and appraise the effectiveness of functions of management in the effectiveness of business decision making.

Course Code: 20COU03

Course Name: Practical – I MS Word, Excel and PowerPoint

- CO1** Remember the various features available in MS-Word, MS-Excel, MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them
- CO2** Understand various in-built functions in MS-Word, MS-Excel and MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them
- CO3** Apply the features of MS-Word, MS-Excel and MS PowerPoint in creative preparation of reports and presentations.
- CO4** Examine and appraise the use of software in business needs.

Course Code: 20COU04

Course Name: Business Economics

- CO1** Describe the concept of business economic theory and principles.
- CO2** Explain the scope of business economics in modern day business
- CO3** Examine and interpret the relationship between business economics and market structure
- CO4** Correlate the economic concepts and applications of economic concepts in business decisions.

SEMESTER II

Course Code: 20COU05

Course Name: Financial Accounting

- CO1** Describing the accounting terms in branch accounting and partnership accounting
- CO2** Summarize the accounting aspects of branch accounting, partnership firm, Deed, provision in the absentees of agreement.
- CO3** Solve the problems in branch accounting and admission, retirement and death of partners in partnership business
- CO4** Analyze the accounting procedure of branch accounting and partnership firm sale to limited company.

Course Code: 20COU06

Course Name: Principles of Marketing

- CO1** Remembering and describing the knowledge about Marketing and its ethics
- CO2** Identifying and examining the Marketing environment in India
- CO3** Inferring and evaluating the behavior of consumers in modern marketing
- CO4** Recognizing and classifying the trends in social Marketing and standards of Indian Marketing

Course Code: 20COU07

Course Name: Business Communication

- CO1** Describe the various modes of business communication
- CO2** Discuss the different types of skills required in business communication
- CO3** Explain the need for business communications to handle various business situations
- CO4** Examine the importance of effectiveness of different business communication modes.

SEMESTER III

Course Code: 19COU08

Course Name: Higher Financial Accounting

- CO1** Remember the various aspects of Partnership, Voyage, Fire Claims, Inflation Accounting and Human Resource Accounting.
- CO2** Understand the accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, have a basic knowledge about Inflation Accounting and Human Resource Accounting.
- CO3** Examine the implications of accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership.
- CO4** Prepare Accounts on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, Voyage and Fire Claims.

Course Code: 19COU09

Course Name: Business Law

- CO1** Understand the applicability of the provisions of business law in business.
- CO2** Explain the pertinence of different types of contracts and in contracts of sale of goods in business
- CO3** Interpret the need and relevance of The Consumer Protection Act and The Limited Liability Partnership Act
- CO4** Evaluate the influence of the various Acts in the modern day business

Course Code: 19COU10

Course Name: Financial Management

- CO1** To learn the concept of Financial Management and its role and functions.
- CO2** Understand the corporate capital structure and financial decision making
- CO3** Interpret the cost of capital calculations and dividend policies in corporate companies
- CO4** Learn the structure of Working capital and Working capital finance.

Course Code: 19COU11

Course Name: Practical - II Tally ERP 9 and Internet

- CO1** To remember the various features available in Tally and use them
- CO2** To understand various in-built functions in Tally and explain the benefits of internet
- CO3** To apply the features of Tally in preparation of accounts of an organization and employ internet for the progress of the organization
- CO4** To examine and appraise the use of accounting software and internet in business needs.

SEMESTER IV

Course Code: 19COU13

Course Name: Corporate Accounting

- CO1** To provide the knowledge of companies and its regulations, issue of shares, under writing of shares and Rights issue.
- CO2** Develop an understanding about redemption of Shares and Debenture and its types
- CO3** To give an exposure to the company final accounts and provide knowledge on Valuation of Goodwill and Shares
- CO4** To Understand the concepts of Liquidation of companies and further exposure on corporate governance aspects.

Course Code: 19COU14

Course Name: Income Tax Law and Practice

- CO1** Identify and describe the basics of Income Tax Act, Definition, History and Residential status
- CO2** Relating the rules, regulations and deductions U/S.80.
- CO3** Preparing the five heads of income and determining the total income of an individual
- CO4** Calculating the tax liability and filing the tax return through online

Course Code: 19COU15**Course Name: Company Law and Secretarial Practice**

- CO1** To learn about basics of company formation
- CO2** To understand about documents prepared and maintained in a company
- CO3** To apply the company management and Director qualifications, appointment, powers and duties
- CO4** To analyze the company secretarial practices, Rights, duties, liabilities, Company meeting and winding up

Course Code: 19COU16**Course Name: Banking Theory Law and Practice**

- CO1** Understand the applicability of the provisions of law relating to banking
- CO2** Explain the relationship existing between the banker and the customers
- CO3** Describe the types of various Negotiable Instruments and related features
- CO4** Explain Innovations and Recent Trends in Indian Banking and Policy Reforms in Indian Banking

PROGRAMME NAME: B.Com. (Computer Applications)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Graduates will possess knowledge and skills in Commerce, Accountancy and Computer Applications disciplines
PEO2	Graduates will equip themselves for continuation of their education and get practical knowledge in application aspects

PROGRAMME OUTCOMES

PO1	The programme enable the learners to get theoretical and practical exposure in Accounting, Taxation and computer applications.
PO2	It ensures that the students develop communicative skills and build confidence to meet the Global challenges.
PO3	It enables the learners to develop their capabilities for decision making at potential level.
PO4	It Develops the students to earn advanced managerial and financial skills to occupy the professional positions.
PO5	The learners can upgrade and develop knowledge in the field of commerce with computer applications.

COURSE OUTCOMES

SEMESTER I

Course Code: 20CCU01

Course Name: Principles of Accountancy

CO1	Acquire the basic accounting knowledge to prepare effective and ethical financial statements of all type of business
CO2	Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP
CO3	Demonstrate and apply various accounting practices applicable to all type of business
CO4	Analyze the financial statements of all business types to enhance the knowledge of accounting

Course Code: 20CCU02

Course Name: Introduction to Information Technology

- CO1** To know various aspects of Information Technology.
- CO2** To understand the role of Information Technology in influencing modern day business.
- CO3** To Combine various communication technology with Information technology Applications.
- CO4** To analyze the IT Management in business organization.

Course Code: 20CCU03

Course Name: Practical – I: MS Word, MS Excel & MS Power Point

- CO1** Remember the various features available in MS-Word and use them
- CO2** Understand various in-built functions in MS-Excel
- CO3** Apply the features of MS PowerPoint in creative preparation of presentations.
- CO4** Examine and appraise the use of software in business needs.

Course Code: 20CCU04

Course Name: Allied – Business Economics

- CO1** Describe the concept of business economic theory and principles.
- CO2** Explain the scope of business economics in modern day business
- CO3** Examine and interpret the relationship between business economics and market structure
- CO4** Correlate the economic concepts and applications of economic concepts in business decisions.

SEMESTER II

Course Code: 20CCU05

Course Name: Financial Accounting

- CO1** Describing the accounting terms in branch accounting and partnership accounting
- CO2** Summarize the accounting aspects of branch accounting, partnership firm, Deed, provision in the absentees of agreement.
- CO3** Solve the problems in branch accounting and admission, retirement and death of partners in partnership business
- CO4** Analyze the accounting procedure of branch accounting and partnership firm sale to limited company.

Course Code: 20CCU06

Course Name: Practical – II: Tally & Internet

- CO1** Remember the various features available in Tally and use them
- CO2** Understand various in-built functions in Tally and explain the benefits of internet
- CO3** Apply the features of Tally in preparation of accounts of an organization and employ internet for the progress of the organization
- CO4** Examine and appraise the use of accounting software and internet in business needs.

Course Code: 20CCU07

Course Name: Allied –Principles of Management

- CO1** Describe the concept of management functions and principles.
- CO2** Discuss the need for effective implementation of managerial aspects in business.
- CO3** Examine and interpret influence of management principles in the organisation structure and functions.
- CO4** Explain and appraise the effectiveness of functions of management in the effectiveness of business decision making.
- CO5** Describe the concept of management functions and principles.

SEMESTER III

Course Code: 19CCU08

Course Name: Higher Financial Accounting

- CO1** To remember the various aspects of Partnership, Voyage, Fire Claims, Inflation Accounting and Human Resource Accounting
- CO2** To understand the accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership and to have a basic knowledge about Inflation Accounting and Human Resource Accounting
- CO3** To examine the implications of accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership
- CO4** To prepare Accounts on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, Voyage and Fire Claims

Course Code: 19CCU09

Course Name: Object oriented Programming with C++

- CO1** Learn and understand the basic knowledge on Object Oriented concepts
- CO2** Understand and develop applications using Object Oriented Programming Operators and Functions
- CO3** To analyze and understand the role of inheritance, polymorphism and building reusable code
- CO4** To evaluate small/medium scale C++ programs with pointers & understand the file handling and error handling mechanisms in C++

Course Code: 19CCU10**Course Name: Business Law**

- CO1** Remember the applicability of the provisions of business law in business.
- CO2** Explain the pertinence of different types of contracts and in contracts of sale of goods in business and related law in business
- CO3** Identify the need and relevance of the Consumer Protection Act and the Limited Liability Partnership Act
- CO4** Evaluate the influence of the various Acts in the modern-day business

Course Code: 19CCU11**Course Name: Practical III: C++**

- CO1** To understand the basic knowledge of object oriented concepts and to write simple programs.
- CO2** Write a program in different logic with suitable validations for a given problem
- CO3** Implement the techniques and features of the Object Oriented Programming constructs to construct an application
- CO4** Write technical report on the observations from the experiments.

SEMESTER IV**Course Code: 19CCU13****Course Name: Corporate Accounting**

- CO1** To provide the knowledge of companies and its regulations, issue of shares, under writing of shares and Rights issue
- CO2** Develop an understanding about redemption of Shares and Debenture and its types
- CO3** To give an exposure to the company final accounts and provide knowledge on Valuation of Goodwill and Shares
- CO4** To understand the concepts of Liquidation of companies and further exposure on corporate governance aspects

Course Code: 19CCU14**Course Name: Income Tax Law & Practice**

- CO1** Identify and describe the basics of Income Tax Act, Definition, History and Residential status
- CO2** Relating the rules, regulations and deductions U/S.80
- CO3** Preparing the five heads of income and determining the total income of an individual
- CO4** Calculating the tax liability and filing the tax return through online

Course Code: 19CCU15

Course Name: Database Management System

- CO1** Enable student to understand about what is database system, data model, key etc.
- CO2** Design multiple tables and group functions
- CO3** Enable student to understand about Relational Algebra and calculus
- CO4** Design a database based on a data model considering the normalization to a specified level

Course Code: 19CCU16

Course Name: Practical IV: SQL (ORACLE)

- CO1** To understand the fundamental knowledge and practical knowledge of database concepts
- CO2** To familiarize the students on tables, insert and retrieve the data from database
- CO3** To enable students to manipulate the data and operators
- CO4** Write SQL Queries to user specification

PROGRAMME NAME: B.Com. (International Business)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	Graduates will be International business leaders and managers with leadership and problem-solving skills for global business
PE02	Graduates will drive entrepreneurial initiatives either on their own or within other organizations where they are employed

PROGRAMME OUTCOMES

PO1	Possessing knowledge in the disciplines of Commerce, International Business and related areas.
PO2	Able to express their ideas by understanding the facts through organizing and comparing relevant Business situation.
PO3	Able to apply problem solving skills and arrive at appropriate solution for different business situations.
PO4	Able to examine and synthesize different elements of Commerce and International Business in accomplishment of the organizational goal.
PO5	Able to get an insight into various schemes available for trading in business.

COURSE OUTCOMES

SEMESTER I

Course Code: 20CBU01

Course Name: Principles of Accountancy

- | | |
|-----|----------------------------------------------------------------------------------------------------------------------|
| CO1 | Acquire the basic accounting knowledge to prepare effective and ethical financial statements of all type of business |
| CO2 | Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP |
| CO3 | Demonstrate and apply various accounting practices applicable to all type of business |
| CO4 | Analyze the financial statements of all business types to enhance the knowledge of accounting |

Course Code: 20CBU02

Course Name: Principles of Management

- | | |
|-----|-------------------------------------------------------------------------------------------------------|
| CO1 | Describe the concept of management functions and principles. |
| CO2 | Discuss the need for effective implementation of managerial aspects in business. |
| CO3 | Examine and interpret influence of management principles in the organization structure and functions. |

CO4 Explain and appraise the effectiveness of functions of management in the effectiveness of business decision making.

Course Code: 20CBU03

Course Name: Practical –I : MS – Word, Excel and PowerPoint

CO1 Remember the various features available in MS-Word, MS-Excel, MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them

CO2 Understand various in-built functions in MS-Word, MS-Excel and MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them

CO3 Apply the features of MS-Word, MS-Excel and MS PowerPoint in creative preparation of reports and presentations.

CO4 Examine and appraise the use of software in business needs.

Course Code: 20CBU04

Course Name: International Economics

CO1 Acquire the knowledge about nature and scope of International economics and International Trade

CO2 Understand the role of International Economic Theories and economic relations.

CO3 Be familiar with International Trade Theories and balance of payments.

CO4 Analyse the impact of various financial institutions in International Trade

SEMESTER II

Course Code: 20CBU05

Course Name: Financial Accounting

CO1 Identify the elements of Branch and Partnership Accounts

CO2 Understand the accounting procedure during various situations in Partnership and Branch Accounting

CO3 Examine the implications of accounting procedure in branch accounting and during various situations in Partnership.

CO4 Prepare Accounts under branch accounting and on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership. Accounting

Course Code: 20CBU06

Course Name: Export Trade Procedure

CO1 Acquire the basic knowledge of the terms used in Foreign Trade Policy.

CO2 Understand the role of registered exporters and Export Oriented Units.

CO3 Acquire the application skill in connection with Licensing and other schemes used in Foreign Trade.

CO4 Develop the analytical skill about the documentation procedures.

Course Code: 20CBU07

Course Name: Principles of Marketing

- CO1** Remembering and describing the knowledge about Marketing and its ethics
- CO2** Identifying and examining the Marketing environment in India
- CO3** Inferring and evaluating the behavior of consumers in modern marketing
- CO4** Recognizing and classifying the trends in social Marketing and standards of Indian Marketing

SEMESTER III

Course Code: 19CBU08

Course Name: Higher Financial Accounting

- CO1** Understand the various Aspects of Partnership.
- CO2** Preparing Accounts on Retirement and Death of Partnership.
- CO3** Understand the concept and Procedure of Dissolution and Insolvency of Partnership.
- CO4** Understand the concept of Voyage, Fire Claims, Inflation Accounting and Human Recourse Accounting.

Course Code: 19CBU09

Course Name: International Marketing Management

- CO1** Define the concept and orientation of International Marketing
- CO2** Explain the buying behavior and decision making process
- CO3** Examine the competitive advantage intelligence system
- CO4** Categorize the new product development process

Course Code: 19CBU10

Course Name: Business Law

- CO1** Understand the applicability of the provisions of business law in business.
- CO2** Explain the pertinence of different types of contracts and in contracts of sale of goods in business
- CO3** Interpret the need and relevance of The Consumer Protection Act and The Limited Liability Partnership Act
- CO4** Evaluate the influence of the various Acts in the modern-day business.

Course Code: 19CBU11

Course Name: Practical – II Tally and Internet

- CO1** Understand the concept of recording financial transactions in Tally.
- CO2** Understand the preparation of annual accounts and reports using Tally.
- CO3** Learn the inventory statements and methods
- CO4** Interpret the data for decision making

SEMESTER IV

Course Code: 19CBU13

Course Name: Corporate Accounting

- CO1** To provide the knowledge of companies and its regulations, issue of shares, under writing of shares and Rights issue.
- CO2** Develop an understanding about redemption of Shares and Debenture and its types
- CO3** To give an exposure to the company final accounts and provide knowledge on Valuation of Goodwill and Shares
- CO4** To Understand the concepts of Liquidation of companies and further exposure on corporate governance aspects.

Course Code: 19CBU14

Course Name: Business Communication

- CO1** To Impart the knowledge to students about various concepts in Business Communication
- CO2** To help the students to enhance speaking capability, interview skills and to make effective presentation
- CO3** They gain general idea on Business Correspondence and Drafting letters
- CO4** To enable the students to understand internal and External Correspondence

Course Code: 19CBU15

Course Name: Company Law And Secretarial Practice

- CO1** To learn about basics of company formation
- CO2** To know about documents prepared and maintained in a company
- CO3** To understand the company management
- CO4** To know the company secretarial practices

Course Code: 19CBU16

Course Name: Logistics Management

- CO1** Define the concept of International Marketing logistics
- CO2** Interpret transportation infrastructure and freight management
- CO3** Examine the role of Inland Container Depot and Container Freight Station
- CO4** Analyse the International Freight Principles and Role of IATA

PROGRAMME NAME: B.Com. (Professional Accounting)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	Possess fair deal of knowledge in the core areas of professional accounting.
PEO2	Have familiarity in the application of the skills acquired in the area of Accounting, Finance etc., and ensuring them in practicing ethical societal role.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Promote and develop knowledge, skill and proficiency in accountancy.
PO2	PROBLEM SOLVING AND ANALYSING: Identify, evaluate and resolve real-time business problems with the specialized knowledge and practical training.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Accountability to the environment and the society by adopting ethical, eco-friendly and society centric methods.
PO4	TEAM WORK & COMMUNICATIVE SKILLS: To encourage the students towards achieving their goals through team work and communication skills.
PO5	SELF DIRECTED / LIFE LONG LEARNING: To direct the students towards self-dependent in order to face competitive world and there by enjoy lifelong learning opportunity.

COURSE OUTCOMES

SEMESTER I

Course Code: 20PAU01

Course Name: Principles of Accountancy

- | | |
|------------|----------------------------------------------------------------------------------------------------------------------|
| CO1 | Acquire the basic accounting knowledge to prepare effective and ethical financial statements of all type of business |
| CO2 | Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP |
| CO3 | Demonstrate and apply various accounting practices applicable to all type of business |
| CO4 | Analyze the financial statements of all business types to enhance the knowledge of accounting |

Course Code: 20PAAU01

Course Name: Basics of Financial Accounting

- | | |
|------------|------------------------------------------------------------------------------|
| CO1 | Stating the different types of costing systems. |
| CO2 | Selecting the appropriate tools and techniques for evaluate the labour cost. |

- CO3** Constructing the cost sheets and apply the different types of controlling inventory analysis.
- CO4** Analyzing and preparation of different types of costing techniques and applying the Financial Statements and the interpretations thereof.

Course Code: 20PAU02

Course Name: Principles of Management

- CO1** Describe the concept of management functions and principles.
- CO2** Discuss the need for effective implementation of managerial aspects in business
- CO3** Examine and interpret influence of management principles in the organization structure and functions.
- CO4** Explain and appraise the effectiveness of functions of management in the effectiveness of business decision making.

Course Code: 20PAAU02

Course Name: Principles of Management*

- CO1** Identifying and understanding the strategic & operating levels of management
- CO2** Interpreting and classifying the various functions of research and development of management
- CO3** Examining and categorizing the management functions such as planning, organizing, decision-making, communicating, coordinating and control
- CO4** Articulating the role of leadership theories and analysing the use of financial systems and IT in organizational management.

Course Code: 20PAU03

Course Name: Practical –I – MS – Word, MS – Excel and MS– PowerPoint

- CO1** Remember the various features available in MS-Word, MS-Excel, MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them
- CO2** Understand various in-built functions in MS-Word, MS-Excel and MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them
- CO3** Apply the features of MS-Word, MS-Excel and MS PowerPoint in creative preparation of reports and presentations.
- CO4** Examine and appraise the use of software in business needs.

Course Code: 20PAU04

Course Name: Business Economics

- CO1** Describe the concept of business economic theory and principles.
- CO2** Explain the scope of business economics in modern day business

- CO3** Examine and interpret the relationship between business economics and market structure
- CO4** Correlate the economic concepts and applications of economic concepts in business decisions.

SEMESTER II

Course Code: 20PAU05

Course Name: Financial Accounting

- CO1** Describing the accounting terms in branch accounting and partnership accounting
- CO2** Summarize the accounting aspects of branch accounting, partnership firm, Deed, provision in the absentees of agreement.
- CO3** Solve the problems in branch accounting and admission, retirement and death of partners in partnership business
- CO4** Analyze the accounting procedure of branch accounting and partnership firm sale to limited company.

Course Code: 20PAU06

Course Name: Principles of Marketing

- CO1** Remembering and describing the knowledge about Marketing and its ethics
- CO2** Identifying and examining the Marketing environment in India
- CO3** Inferring and evaluating the behavior of consumers in modern marketing
- CO4** Recognizing and classifying the trends in social Marketing and standards of Indian Marketing

Course Code: 20PAAU06

Course Name: Basics of Cost Accounting

- CO1** Applying the concept of accounting for cost and inferring to allocation of overheads in costing
- CO2** Observing the concept and identifying the classification of costing in India
- CO3** Describing the accounting for material and analysing the labour costs of the entity in cost accounting
- CO4** Examining the methods of costing and inferring the marginal costing of the entity in cost accounting

Course Code: 20PAU07

Course Name: Allied: Business Communication

- CO1** Describe the various modes of business communication
- CO2** Discuss the different types of skills required in business communication

- CO3** Explain the need for business communications to handle various business situations
- CO4** Examine the importance of effectiveness of different business communication modes.

SEMESTER III

Course Code: 19PAU08

Course Name: Higher Financial Accounting

- CO1** Remember the various aspects of Partnership, Voyage, Fire Claims, Inflation Accounting and Human Resource Accounting.
- CO2** Understand the accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, have a basic knowledge about Inflation Accounting and Human Resource Accounting.
- CO3** Examine the implications of accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership.
- CO4** Prepare Accounts on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, Voyage and Fire Claims.

Course Code: 19PAU09

Course Name: Business Law

- CO1** Remember the applicability of the provisions of business law in business.
- CO2** Explain the pertinence of different types of contracts and in contracts of sale of goods in business and related law in business
- CO3** Identify the need and relevance of The Consumer Protection Act and The Limited Liability Partnership Act
- CO4** Evaluate the influence of the various Acts in the modern-day business

Course Code: 19PAU10

Course Name: Principles of Auditing

- CO1** To Understand the insight into the principles of auditing
- CO2** To Acquire the overview of procedure and strategies adopted by an Auditor during auditing.
- CO3** To Examine about the auditing procedures of each item of financial statement.
- CO4** To Analysis the process of auditing adopted in various entities.

Course Code: 19PAAU10

Course Name: Principles of Auditing & Assurance

- CO1** Understand the Concept of Audit & Assurance and the Functions of Audit.

- CO2** Securing and Handling Audit Assignments & Audit Risks.
- CO3** Comprehension and Evaluation of Internal Controls, Techniques & Audit Tests.
- CO4** Gathering & Managing Audit Evidence, Review and Reporting.

Course Code: 19PAU11

Course Name: Practical – II – Tally(ERP 9) & Internet

- CO1** Remember the various features available in Tally and use them
- CO2** Understand various in-built functions in Tally and explain the benefits of internet
- CO3** Apply the features of Tally in preparation of accounts of an organization and employ internet for the progress of the organization
- CO4** Examine and appraise the use of accounting software and internet in business needs.

Course Code: 19PAAU11

Course Name: Financial Reporting - I

- CO1** Understand the use and application of the IFRS & (IND AS in India)
- CO2** Knowledge of Accounting for Transactions using Accounting Standards
- CO3** Examine the Preparation of Single Entity Financial Statement
- CO4** Analyse and Interpretation of Accounting Statements

SEMESTER IV

Course Code: 19PAU13

Course Name: Corporate Accounting

- CO1** Outline about companies and its regulations, shares, debentures, accounting procedures of companies.
- CO2** Develop an understanding about shares, debentures, accounting procedures of companies and corporate governance aspects.
- CO3** Examine the procedure of company final accounts, Valuation of Goodwill and Shares, Liquidation of Companies
- CO4** Prepare final accounts, Value Goodwill and Shares, Prepare accounts on Liquidation of Companies

Course Code: 19PAU14

Course Name: Income Tax Law and Practice

- CO1** Identify and describe the basics of Income Tax Act, Definition, History and Residential status.
- CO2** Relating the rules, regulations and deductions U/S.80.
- CO3** Preparing the five heads of income and determining the total income of an individual.
- CO4** Calculating the tax liability and filing the tax return through online.

Course Code: 19PAU15**Course Name: Organizational Behaviour**

- CO1** To Know the Applicability of the Concept of Organizational Behavior and to learn the Behavior of People in the Organization.
- CO2** To Understand the Applicability of Analyzing the Complexities Associated with Management of Individual Behavior in the Organization.
- CO3** To Examine the Complexities Associated with Management of the Group Behavior in the Organization
- CO4** To Analyze the Organizational Behavior can Integrate in Motivation behind the Behavior of People in the Organization

Course Code: 19PAAU15**Course Name: Organization Management**

- CO1** To identify and remember the Types of Business and the technique they are structured.
- CO2** To Understand the Business Environment and its functions
- CO3** To Examine the Impact of External Environment on the Organization.
- CO4** To Analyse and apply the Role of Corporate Governance and Ethics

Course Code: 19PAU16**Course Name: Company Law and Secretarial Practice**

- CO1** To learn about basics of company formation
- CO2** To know about documents prepared and maintained in a company
- CO3** To Explore the company management
- CO4** To analyze the company secretarial practices

Course Code: 19PAAU16**Course Name: Financial Reporting-II**

- CO1** To Remember and describe the Application of the IFRS (IND AS in India) to various Business Contexts.
- CO2** To recognize the Preparation of Single Entity Financial Statement and simple Group Financial Statements.
- CO3** To Examine the Impact of External Environment on the Organization.
- CO4** To analyze the Current Developments in Financial Accounting

PROGRAMME NAME: B.Com. (Accounting and Finance)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	Possess expertise in the domains of commerce with Accounting & Finance.
PEO2	Be familiar in the application of the skills acquired in the area of Accounting, Finance, Computing, etc., ensuring them in practicing ethical societal role.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Gain knowledge of various accounting methodologies required by modern day business entities
PO2	PROBLEM SOLVING AND ANALYSING: Identify, evaluate and resolve real-time business problems with the specialized knowledge developed through practical training.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: More accountable towards the environment and the society by being ethical and eco-friendly.
PO4	TEAM WORK AND GROUP INITIATIVE: To encourage the students towards team work and understand the importance of group initiative for their successful endeavor
PO5	SELF MOTIVATED / EFFICIENT FUNCTION: To develop the students to become self-motivated and function efficiently for achieving their goals.

COURSE OUTCOMES

SEMESTER I

Course Code: 20CFU01

Course Name: Principles of Accountancy

- | | |
|------------|----------------------------------------------------------------------------------------------------------------------|
| CO1 | Acquire the basic accounting knowledge to prepare effective and ethical financial statements of all type of business |
| CO2 | Develop the skill of recording financial transactions and preparation of reports in accordance with GAAP |
| CO3 | Demonstrate and apply various accounting practices applicable to all type of business |
| CO4 | Analyze the financial statements of all business types to enhance the knowledge of accounting |

Course Code: 20CFU02

Course Name: Principles of Management

- | | |
|------------|----------------------------------------------------------------------------------|
| CO1 | Describe the concept of management functions and principles. |
| CO2 | Discuss the need for effective implementation of managerial aspects in business. |

- CO3** Examine and interpret influence of management principles in the organization structure and functions.
- CO4** Explain and appraise the effectiveness of functions of management in the effectiveness of business decision making

Course Code: 20CFU03

Course Name: Practical –I – MS – Word, MS – Excel and MS – Power Point

- CO1** Remember the features available in Tally and use them.
- CO2** Understand various in-built functions in Tally and explain the benefits of internet.
- CO3** Apply the features of Tally in preparation of accounts of an organization and employ internet for the progress of the organization.
- CO4** Examine and appraise the use of accounting software and internet in business needs.

Course Code: 20CFU04

Course Name: Allied : Business Economics

- CO1** Describe the concept of business economic theory and principles.
- CO2** Explain the scope of business economics in modern day business
- CO3** Examine and interpret the relationship between business economics and market structure
- CO4** Correlate the economic concepts and applications of economic concepts in business decisions.

SEMESTER II

Course Code: 20CFU05

Course Name: Financial Accounting

- CO1** Identify the elements of Branch and Partnership Accounts
- CO2** Understand the accounting procedure during various situations in Partnership and Branch Accounting
- CO3** Examine the implications of accounting procedure in branch accounting and during various situations in Partnership
- CO4** Prepare Accounts under branch accounting and on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership. Accounting

Course Code: 20CFU06

Course Name: Principles of Marketing

- CO1** Remembering and describing the knowledge about Marketing and its ethics

- CO2** Identifying and examining the Marketing environment in India
- CO3** Inferring and evaluating the behavior of consumers in modern marketing
- CO4** Recognizing and classifying the trends in social Marketing and standards of Indian Marketing

Course Code: 20CFU07

Course Name: Allied: Business Communication

- CO1** Describe the various modes of business communication
- CO2** Discuss the different types of skills required in business communication
- CO3** Explain the need for business communications to handle various business situations
- CO4** Examine the importance of effectiveness of different business communication modes.

SEMESTER III

Course Code: 19CFU08

Course Name: Higher Financial Accounting

- CO1** Remember the various aspects of Partnership, Voyage, Fire Claims, Inflation Accounting and Human Resource Accounting.
- CO2** Understand the accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, have a basic knowledge about Inflation Accounting and Human Resource Accounting.
- CO3** Understand the concept and procedure of Dissolution and Insolvency of Partnership.
- CO4** Prepare Accounts on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, Voyage and Fire Claims.

Course Code: 19CFU09

Course Name: Business Finance

- CO1** To Understand the basic concept of Business Finance
- CO2** To Develop knowledge about Financial planning and source of income.
- CO3** To Examine the Theories of Capitalization.
- CO4** To Analysis the Capital structure and its Theories.

Course Code: 19CFU10

Course Name: Banking Theory, Law and Practice

- CO1** Understand the applicability of the provisions of law relating to banking
- CO2** Explain the relationship existing between the banker and the customers

- CO3** Describe the types of various Negotiable Instruments and related features
- CO4** Explain Innovations and Recent Trends in Indian Banking and Policy Reforms in Indian Banking

Course Code: 19CFU11 **Course Name: Practical – II – Tally and Internet**

- CO1** Remember the features available in Tally and use them.
- CO2** Understand various in-built functions in Tally and explain the benefits of internet.
- CO3** Apply the features of Tally in preparation of accounts of an organization and employ internet for the progress of the organization.
- CO4** Examine and appraise the use of accounting software and internet in business needs.

SEMESTER IV

Course Code: 19CFU13 **Course Name: Corporate Accounting**

- CO1** Outline about companies and its regulations, shares, debentures, accounting procedures of companies.
- CO2** Develop an understanding about shares, debentures, accounting procedures of companies and corporate governance aspects.
- CO3** Examine the procedure of company final accounts, Valuation of Goodwill and Shares, Liquidation of Companies
- CO4** Prepare final accounts, Value Goodwill and Shares, Prepare accounts on Liquidation of Companies

Course Code: 19CFU14 **Course Name: Income Tax Law and Practice**

- CO1** Identify and describe the basics of Income Tax Act, Definition, History and Residential status.
- CO2** Relating the rules, regulations and deductions U/S.80.
- CO3** Preparing the five heads of income and determining the total income of an individual.
- CO4** Calculating the tax liability and filing the tax return through online.

Course Code: 19CFU15 **Course Name: Principles of Auditing**

- CO1** To Understand the insight into the principles of auditing

- CO2** To Acquire the overview of procedure and strategies adopted by an Auditor during auditing.
- CO3** To Examine about the auditing procedures of each item of financial statement.
- CO4** To Analysis the process of auditing adopted in various entities.

Course Code: 19CFU16

Course Name: Investment Management

- CO1** To Remember the basic theory on Investment Management and its development.
- CO2** To Understand an overview of institutional details linked to financial markets and the trading process.
- CO3** To Examine the measurement and analysis of risk of financial investments.
- CO4** To Analyze the various investment alternatives and Portfolio Analysis and Management.

PROGRAMME NAME: B.Com. (Information Technology)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	Graduates will possess knowledge and skills in Commerce, Information Technology disciplines
PEO2	Graduates will equip themselves for continuation of their education and advance in their academics and career.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Possessing knowledge in the disciplines of Commerce, Information Technology and related areas.
PO2	PROBLEM SOLVING AND ANALYSING: Applying problem solving skills and arrive at an appropriate solution for different business situations
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Engage in Ethical practices and environmental safety in the functioning of organizational operations.
PO4	CO-OPERATIVE TEAM WORK & COMMUNICATIVE SKILLS: Examining and Synthesizing the different elements that influence Commerce and Information Technology in accomplishment of the organizational goals.
PO5	SELF DIRECTED / LIFE LONG LEARNING: Learning to be self-directed and understanding of facts, ideas, etc., by organizing and comparing relevant business situations

COURSE OUTCOMES

SEMESTER I

Course Code: 20CIU01

Course Name: Principles of Accountancy

- CO1** Describe the need and importance of various accounting modes in business
- CO2** Interpret the application of various modes of accounting
- CO3** Relate the different accounting aspects applicable to different business situations
- CO4** Preparing of books of accounts and summarize the results of the business

Course Code: 20CIU02

Course Name: Introduction to Information Technology

- CO1** Outline the various aspects of Information Technology.
- CO2** Demonstrate and good understanding of the role of IT in influencing modern day business

- CO3** Examine and Combine various communication technology with IT Applications
- CO4** Formulate plans for IT Management in a business organization

Course Code: 20CIU03

Course Name: Practical –I – MS – Word, MS – Excel and MS – PowerPoint

- CO1** Remember the various features available in MS-Word, MS-Excel, MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them
- CO2** Understand various in-built functions in MS-Word, MS-Excel and MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them
- CO3** Apply the features of MS-Word, MS-Excel and MS PowerPoint in creative preparation of reports and presentations.
- CO4** Examine and appraise the use of software in business needs.

Course Code: 20CIU04

Course Name: Business Economics

- CO1** Describe the concept of business economic theory and principles.
- CO2** Explain the scope of business economics in modern day business
- CO3** Examine and interpret the relationship between business economics and market structure
- CO4** Correlate the economic concepts and applications of economic concepts in business decisions.

SEMESTER II

Course Code: 20CIU05

Course Name: Financial Accounting

- CO1** Identify the elements of Branch and Partnership Accounts
- CO2** Understand the accounting procedure during various situations in Partnership and Branch Accounting
- CO3** Examine the implications of accounting procedure in branch accounting and during various situations in Partnership.
- CO4** Prepare Accounts under branch accounting and on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership. Accounting

Course Code: 20CIU06

Course Name: Practical – II – Tally and Internet

- CO1** Remember the features available in Tally and use them.
- CO2** Understand various in-built functions in Tally and explain the benefits of internet.

- CO3** Apply the features of Tally in preparation of accounts of an organization and employ internet for the progress of the organization.
- CO4** Examine and appraise the use of accounting software and internet in business needs.

Course Code: 20CIU07

Course Name: Principles of Management

- CO1** Describe the concept of management functions and principles.
- CO2** Discuss the need for effective implementation of managerial aspects in business.
- CO3** Examine and interpret influence of management principles in the organization structure and functions.
- CO4** Explain and appraise the effectiveness of functions of management in the effectiveness of business decision making.

SEMESTER III

Course Code: 19CIU08

Course Name: Higher Financial Accounting

- CO1** Remember the various Aspects of Partnership.
- CO2** Understand the accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership.
- CO3** Understand the concept and accounting procedure of Voyage, Fire Claims, have a basic knowledge about Inflation Accounting and Human Recourse Accounting.
- CO4** Prepare Accounts on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, Voyage and Fire Claims.

Course Code: 19CIU09

Course Name: Business Law

- CO1** Remember the applicability of the provisions of business law in business.
- CO2** Explain the pertinence of different types of contracts and in contracts of sale of goods in business and related law in business
- CO3** Identify the need and relevance of The Consumer Protection Act and The Limited Liability Partnership Act
- CO4** Evaluate the influence of the various Acts in the modern-day business

Course Code: 19CIU10

Course Name: Programming in C++

- CO1** Remember the Concepts of Object-Oriented Programming, Classes, Objects and Functions
- CO2** Understand the Arrays and Memory Concept
- CO3** Understand the concepts of Files and Exception Handling
- CO4** Construct a Program in C++ using Object-Oriented Principles

Course Code: 19CIU11

Course Name: Practical III - Programming in C++

- CO1** Understand Object-Oriented Programming with Classes, Objects and Functions
- CO2** Running a program using Arrays and Memory Concept
- CO3** Integrating different input output operations with Files and with Exception Handling
- CO4** Construct a Program in C++ using Object-Oriented Principles

SEMESTER IV

Course Code: 19CIU13

Course Name: Corporate Accounting

- CO1** To provide the knowledge of companies and its regulations, issue of shares, under writing of shares and Rights issue.
- CO2** Develop an understanding about redemption of Shares and Debenture and its types
- CO3** To give an exposure to the company final accounts and provide knowledge on Valuation of Goodwill and Shares
- CO4** To Understand the concepts of Liquidation of companies and further exposure on corporate governance aspects.

Course Code: 19CIU14

Course Name: Income Tax Law and Practice

- CO1** To understand the basics of Income Tax.
- CO2** To know the rules and regulations and deductions.
- CO3** To learn the five heads and tax deduction procedure.
- CO4** To know the practical applicability of return filing.

Course Code: 19CIU15

Course Name: Principles of Web Designing

- CO1** Understand HTML, Graphics, XML
- CO2** Explain CGI and Server-side scripting
- CO3** Explain Web based Scripting
- CO4** Explain the features in designing a web page.

Course Code: 19CIU16

Course Name: Practical IV - Web Designing

- CO1** Understand what a Web Page is.
- CO2** Express the applicability of tags in web designing
- CO3** Use HTML Tags, Frames, and Forms in web designing.
- CO4** Explain the features in designing a web page.

PROGRAMME NAME: B.Com. (Banking and Insurance)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	Graduates will possess knowledge and skills in Commerce, Banking and Insurance disciplines.
PEO2	Graduates will equip themselves for continuation of their education and advance in their academics and career.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Possessing knowledge in the disciplines of Commerce, Banking and Insurance and related areas.
PO2	PROBLEM SOLVING AND ANALYSING: Applying problem solving skills and arrive at an effective solution for different business situations.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Engage in Ethical practices and also ensure the industrial safety in the operation of business.
PO4	TEAM WORK & COMMUNICATIVE SKILLS: Examining and utilizing the avenues of the core areas of banking and insurance towards accomplishment of the organizational goal.
PO5	SELF-DIRECTED /LIFELONG LEARNING: Learning and understanding of facts, ideas, etc., towards organizing and comparing relevant business conditions through self-direction and self-motivation.

COURSE OUTCOMES

SEMESTER I

Course Code: 20BAU01

Course Name: Principles of Accountancy

- CO1** Describe the need and importance of various accounting modes in business
- CO2** Interpret the application of various modes of accounting
- CO3** Relate the different accounting aspects applicable to different business situations
- CO4** Preparing of books of accounts and summarize the results of the business

Course Code: 20BAU02

Course Name: Indian Banking System

- CO1** Identify the structure of Indian Banking System and performance of Indian Banking Industry
- CO2** Understand the rationale behind nationalization of banks, privatization of banks and its effects on banking sector

CO3 Examine the role of central banking and its contributions to the economic progress.

CO4 Appraise the contributions of different types of banking institutions

Course Code: 20BAU03

Course Name: Practical –I – MS – Word, MS – Excel and MS – PowerPoint

CO1 Remember the various features available in MS-Word, MS-Excel, MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them

CO2 Understand various in-built functions in MS-Word, MS-Excel and MS PowerPoint and Google Docs, Google Sheet and Google Slides and use them

CO3 Apply the features of MS-Word, MS-Excel and MS PowerPoint in creative preparation of reports and presentations.

CO4 Examine and appraise the use of software in business needs.

Course Code: 20BAU04

Course Name: Business Economics

CO1 Describe the concept of business economic theory and principles.

CO2 Explain the scope of business economics in modern day business

CO3 Examine and interpret the relationship between business economics and market structure

CO4 Correlate the economic concepts and applications of economic concepts in business decisions.

SEMESTER II

Course Code: 20BAU05

Course Name: Financial Accounting

CO1 Identify the elements of Branch and Partnership Accounts

CO2 Understand the accounting procedure during various situations in Partnership and Branch Accounting

CO3 Examine the implications of accounting procedure in branch accounting and during various situations in Partnership.

CO4 Prepare Accounts under branch accounting and on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership. Accounting

Course Code: 20BAU06

Course Name: Principles of Insurance

CO1 Identify and state the concept of risk and risk management

CO2 Understand the different classification of Insurance

CO3 Examine the role of Insurance Business and its contributions to the economic progress.

CO4 Appraise the contribution different types of Insurance Companies

Course Code: 20BAU07

Course Name: Principles of Management

CO1 Describe the concept of management functions and principles.

CO2 Discuss the need for effective implementation of managerial aspects in business.

CO3 Examine and interpret influence of management principles in the organisation structure and functions.

CO4 Explain and appraise the effectiveness of functions of management in the effectiveness of business decision making.

SEMESTER III

Course Code: 19CIU08

Course Name: Higher Financial Accounting

CO1 Remember the various Aspects of Partnership.

CO2 Understand the accounting procedure on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership.

CO3 Understand the concept and accounting procedure of Voyage, Fire Claims, have a basic knowledge about Inflation Accounting and Human Recourse Accounting.

CO4 Prepare Accounts on Admission, Retirement and Death of Partners, Dissolution and Insolvency of Partnership, Voyage and Fire Claims.

Course Code: 19BAU09

Course Name: Business Law

CO1 Remember the applicability of the provisions of business law in business.

CO2 Explain the pertinence of different types of contracts and in contracts of sale of goods in business and related law in business

CO3 Identify the need and relevance of The Consumer Protection Act and The Limited Liability Partnership Act

CO4 Evaluate the influence of the various Acts in the modern-day business

Course Code: 19BAU10

Course Name: Foreign Exchange Management

CO1 Understand the concept of Foreign Exchange and it management

CO2 Explain the pertinence of Foreign Exchange Legislation in India.

CO3 Interpret the need and relevance of functions of Foreign exchange market.

- CO4** Evaluate the influence of transactions carried out in Foreign exchange market the various Acts in the modern day business

Course Code: 19BAU11

Course Name: Business Communication

- CO1** Understand various aspects of Business Communication
- CO2** Illustrate the speaking capability, interview skills and making effective presentation
- CO3** Examine the nuances of Business Correspondence and Drafting letters
- CO4** Compare and Contrast Internal and External Correspondence in a Business

SEMESTER IV

Course Code: 19BAU13

Course Name: Corporate Accounting

- CO1** To provide the knowledge of companies and its regulations, issue of shares, under writing of shares and Rights issue.
- CO2** Develop an understanding about redemption of Shares and Debenture and its types
- CO3** To give an exposure to the company final accounts and provide knowledge on Valuation of Goodwill and Shares
- CO4** To Understand the concepts of Liquidation of companies and further exposure on corporate governance aspects.

Course Code: 19BAU14

Course Name: Income Tax Law and Practice

- CO1** To understand the basics of Income Tax.
- CO2** To know the rules and regulations and deductions.
- CO3** To learn the five heads and tax deduction procedure.
- CO4** To know the practical applicability of return filing.

Course Code: 19BAU15

Course Name: Banking Theory, Law and Practice

- CO1** Understand the applicability of the provisions of law relating to banking
- CO2** Explain the relationship existing between the banker and the customers
- CO3** Describe the types of various Negotiable Instruments and related features
- CO4** Explain Innovations and Recent Trends in Indian Banking and Policy Reforms in Indian Banking

- CO1** To remember the various features available in Tally and use them
- CO2** To understand various in-built functions in Tally and explain the benefits of internet
- CO3** To apply the features of Tally in preparation of accounts of an organization and employ internet for the progress of the organization
- CO4** To examine and appraise the use of accounting software and internet in business needs.

PROGRAMME NAME: B.Com. (Corporate Secretaryship)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Exercising Professional Skills, Values, Team Spirit and High Leadership and to accept the challenges in the Industry and Academics
PEO2	Cope up with the latest developments in contemporary, National and global level through effective transaction of the curricular and co-curricular aspects.

PROGRAMME OUTCOMES

PO1	Graduates will have knowledge in various corporate laws, taxation and industrial management.
PO2	Graduates will be able to face real time challenges in corporate sector.
PO3	Enable graduates to understand social responsibility and move towards environment sustainability.
PO4	Helps the graduates to get trained during the study and become a team leaders and professional communicators.
PO5	It provides for skill enhancement and research exposure for lifelong learning.

COURSE OUTCOMES

SEMESTER I

Course Code: 20CSU01

Course Name: Principles of Accountancy

- | | |
|------------|-----------------------------------------------------------------------------------------------|
| CO1 | To illustrate basic accounting concepts and conventions |
| CO2 | To interpret the need for making adjustments while preparing final accounts of a sole trader. |
| CO3 | To understand and apply the various methods of depreciation and Bank reconciliation statement |
| CO4 | To analyze and apply the accounting concepts in computerized environment |

Course Code: 20CSU02

Course Name: Business Management

- | | |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | To discover the students to appreciate the contribution made by the management thinkers towards the basic principles and functions of management |
| CO2 | To classify the importance of management functions |

- CO3** To familiarize students with the principles, functions and techniques used to effectively manage business enterprises.
- CO4** To provide opportunities to apply the general functions of management in day-to-day managerial practice

Course Code: 20CSU03

Course Name: Business Economics

- CO1** To illustrate the basic concepts and terms in Business Economics
- CO2** To experiment various kinds of elasticity and understand about Demand Analysis concepts
- CO3** To gain In-Depth Knowledge on Production and Cost Analysis
- CO4** To Comprehend the Knowledge about Market structure & Indian economy

SEMESTER II

Course Code: 20CSU04

Course Name: Financial Accounting

- CO1** To examine the concept of consignment and Joint ventures maintenance of book keeping
- CO2** To analyse the Branch Accounts and Departmental accounts of the companies
- CO3** To enable application of the sole trading concern and single entry system.
- CO4** To analyse and maintain books of record for hire purchase and Royalties

Course Code: 20CSU05

Course Name: Business Law

- CO1** To discover the need of Law and apply the Basics of law
- CO2** To infer the concept of contract & essential of contract
- CO3** To facilitate the students to interpret about different Kinds of Performance of Contract
- CO4** To develop the skill to analyze and connect various laws in his or her day to day life.

Course Code: 20CSU06

Course Name: Corporate Communication

- CO1** To classify the importance of communication to an organization.
- CO2** Illustrate the methodology in drafting of business letters and reports.
- CO3** To develop an explorative structure for analyzing corporate presentation
- CO4** To highlight and analyze the procedure for conducting corporate Meetings and procedures.

SEMESTER III

Course Code: 19CSU07

Course Name: Higher Financial Accounting

- CO1** To understand the basic concepts of Partnership Accounting
- CO2** To enable the students to understand the use of partnership accounts in the modern business world.
- CO3** Be able to have complete knowledge on the accounting practices followed in a firm from formation till winding up
- CO4** To gain Knowledge about accounting Standards

Course Code: 19CSU08

Course Name: Company Law & Secretarial Practice-I

- CO1** Gain knowledge relating to promotion of company, registration & its formation
- CO2** Learn about Memorandum of Association & Articles of Association and its contents
- CO3** Know about the share capital & its procedures
- CO4** Get awareness of prospectus, its contents. Know about the role of company secretary, his rights & duties.

Course Code: 19CSU09

Course Name: Corporate Law

- CO1** To gain knowledge in Competition Act and Combination Regulations
- CO2** To understand about Environmental Laws
- CO3** To gain knowledge in FEMA and its regulations
- CO4** To know about Information Technology Act and Cyber Law Provisions

Course Code: 19CSU10

Course Name: Corporate Finance

- CO1** Understand about Profit and Wealth maximization
- CO2** Learn about Capitalization and Capital Gearing
- CO3** Learn about Capital Structure and Leverages
- CO4** Gather a knowledge about working capital & Different dividend policies

SEMESTER IV

Course Code: 19CSU12

Course Name: Corporate Accounting

- CO1** Develop the conceptual knowledge of the fundamentals of accounting in shares
- CO2** Determine the concepts and accounting treatment of redemption for preference shares
- CO3** Analyze and record transactions, construct financial statements relating to debentures Companies Act.
- CO4** Understand about goodwill and its adjustments in the books of a partnership business

Course Code: 19CSU14

Course Name: Company Law & Secretarial Practice-II

- CO1** To gain knowledge regarding Directors
- CO2** To understand about Auditors appointment, powers and duties.
- CO3** Learn about meetings, agenda, minutes of companies.
- CO4** To gain knowledge relating to dividend and secretarial duties. Gain awareness of winding up proceedings of companies and about duties of secretary in winding up.

Course Code: 19CSU13

Course Name: General Laws

- CO1** Make the students understand about interpretation of statutes
- CO2** Understand about Indian constitution, Writ Jurisdiction and Election Commission
- CO3** Develop the Knowledge on Law Relating to Tort.
- CO4** Describe the Legal Provision of Right to Information Act and understand about the Transfer of Property Act, 1882. Gain Awareness on the Consumer Protection Act 1986 and Limitation Act 1963.

Course Code: 19CSU15

Course Name: MS Office Practical

- CO1** Gain knowledge on MS Word by preparation of documents.
- CO2** Prepare final accounts, mark list of class and product life cycle in MS Excel.
- CO3** Create presentation slides using various techniques.
- CO4** Prepare forms, reports and mailing labels in MS Access.

PROGRAMME NAME: B.Sc. (Computer Science)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Provide solutions to challenging problems in their profession by applying Computer Science Theory and Principles.
PEO2	Engage in life-long learning and professional development to adapt to rapidly changing work environment.
PEO3	Provide Technical growth in fundamental and modern computing practices, passion for the profession and its growth.
PEO4	Proficient in successfully designing innovative solutions to real life problems.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Helps students to develop the ability of students to apply knowledge of computing and mathematics in the appropriate field.
PO2	PROBLEM SOLVING AND ANALYZING: Helps students to identify and analyze complex computing problems and to apply principles of computing and other relevant fields and find out solutions.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Students are able to develop an ability to understand Professional, ethical, legal, security, and social issues and responsibilities for the computing Profession.
PO4	MODERN TOOL USAGE: It enables students to develop an ability to use appropriate techniques, skills, and tools necessary for computing practice.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: It helps students to develop an ability to communicate and engage effectively with diverse stakeholders. Function effectively as a member or leader of a team engaged in activities appropriate to the Computer Science discipline.
PO6	SELF-DIRECTED AND LIFE-LONG LEARNING: It provides recognition of the need for and ability to engage in continuing professional development.
PO7	ENHANCING RESEARCH CULTURE: It helps students to apply design and follow development principles in the construction of software systems of varying complexity.

COURSE OUTCOMES

Semester I

Course Code: 20CEU01

Course Name: Fundamentals of Computing and C Programming

- CO1** Identify appropriate data types, variables, syntax and statements for solving simple problems.
- CO2** Understand program solving techniques using arrays, strings, pointers, functions, structures and union for a given scenario.
- CO3** Apply appropriate strategies and representations for handling compound data.
- CO4** Analyze programs and develop lifelong learning skills needed for computer language

Course Code: 20CEU02

Course Name: Computer System Architecture

- CO1** Describe various data representation and logic circuits and components of Computers
- CO2** Discuss the basic concepts of computer organization and Architecture
- CO3** Explain the internal components of combinational circuits, CPU, I/O and Memory
- CO4** Analyze the design of Logic Circuits, CPU, IO and Memory

Course Code: 20CEIU02

Course Name: Software Foundation Program Using C++

- CO1** Explain the basic concept of programming languages
- CO2** Understand the fundamentals of C++ programming language.
- CO3** Apply and experiment the concepts of pointers, arrays, structures and Files in C++
- CO4** Analyze and develop application using C++

Course Code: 20CEU04

Course Name: Practical – I: Programming Using C

- CO1** Choose the right data representation formats based on the requirements of the problem.
- CO2** Compare the various programming constructs and choose the right one for the task in hand.

- CO3** Construct programs that demonstrate effective use of C features including arrays, structures and pointer.
- CO4** Illustrate file access.

SEMESTER II

Course Code: 20CEU05

Course Name: Data Structures

- CO1** Recall the fundamentals concepts of data structures.
- CO2** Classify the concepts of trees and graphs.
- CO3** Analyze and experiment concepts of sorting.
- CO4** Apply and classify concepts of merging and Files.

Course Code: 20CEIU05

Course Name: Data Visualization

- CO1** Simplify the key techniques and theory used in visualization.
- CO2** Identity the fundamentals of R and Python programming languages.
- CO3** Classify the Data analysis, Visualization using R and Python and Watson studio
- CO4** Formulate the large datasets into visual graphics

Course Code: 20CEU06

Course Name: Python Programming

- CO1** Explain the basic concept of programming languages
- CO2** Understand the fundamentals of C++ programming language.
- CO3** Apply and experiment the concepts of pointers, arrays, structures and Files in C++
- CO4** Analyze and develop application using C++

Course Code: 20CEU08

Course Name: Practical - II: Programming using Python

- CO1** Demonstrate and debug Python Programs.
- CO2** Apply Branching and looping concepts in Python Programs.
- CO3** Analyze the use of functions and compound data using lists, Tuples and Dictionaries.
- CO4** Develop applications using Tkinter and Bio Python.

SEMESTER III

Course Code: 19CEU09

Course Name: Programming with Java

- CO1** Gain knowledge about the principles of Java programming.
- CO2** Apply and experiment the concepts of Object Oriented Programming and Develop java standalone applications.
- CO3** Employ the robust & concurrent application using Multithreading and Exception handling concepts.
- CO4** Relate and Experiment Java applications with Graphical User Interface (GUI) using AWT

Course Code: 19CEU10

Course Name: Computer Networks

- CO1** Describe the basic concept of Computer Networks Terminology and explain The layers of TCP/IP and OSI reference model.
- CO2** Examine the concept of Bluetooth Technology.
- CO3** Understand and Building the skills of Subnetting and Routing Mechanism.
- CO4** Explain the Network Security Primitives.

Course Code: 19CEU11

Course Name: Software Engineering

- CO1** Identify specifications in design and components to build the Architecture
- CO2** Identify and build an appropriate process model for a given project
- CO3** Write the principles of various phases in software development
- CO4** Plan for the appropriate testing at different levels during the development of the software.

Course Code: 19CEU13

Course Name: Practical - III: Programming Using JAVA

- CO1** Design and Develop Java problems using object-oriented concepts
- CO2** Develop java applications using packages & collection interfaces.
- CO3** Apply and Develop concurrent Applications using Multithreading
- CO4** Develop Event driven and Graphical User Interface programming using AWT and Applet

Course Code: 19CEU14

Course Name: Practical – IV: Web Design

- CO1** Design a complete website.
- CO2** Design a different layout styles which include backend programming.
- CO3** To apply the concepts of variety of fonts.
- CO4** To Develop applications through HTML, CSS, ASP.NET and PHP.

SEMESTER IV

Course Code: 19CEU15

Course Name: Relational Database Management

- CO1** Defines the fundamental elements of Database Management System.
- CO2** Implements the Relational Database Design and Data Modeling using Entity-Relationship (ER) model.
- CO3** Demonstrates the use of constraints and Relational Algebra Operations, Use of SQL in querying the database and applying various Normalization Techniques.
- CO4** Performs PL/SQL programming using Cursor Management, Error Handling, Procedures, Functions, Triggers and Packages.

Course Code: 19CEU16

Course Name: Operating System

- CO1** Describe the important computer system resources and the role of operating system in their management policies and algorithms.
- CO2** Discuss the process management policies and scheduling of processes by CPU
- CO3** Illustrate the storage management with respect to different storage management Technologies
- CO4** Analyze the memory management and its allocation policies.

Course Code: 19CEU17

Course Name: Practical -V: RDBMS Applications

- CO1** Paraphrasing and underlying concepts of database
- CO2** Experimenting the Database model and determining the DDL and DCL commands
- CO3** Structures PL/SQL functions
- CO4** Design and Validate by building applications.

- CO1** List out the requirements for the given problem
- CO2** Design and implement the solution for given problem in any programming language (C, C++, JAVA)
- CO3** Derive test cases for any given problem
- CO4** Apply the appropriate technique for the design of flow graph

PROGRAMME NAME: B.Sc. (Information Technology)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	Provide solutions to challenging problems in their profession by applying Computer Science theory and principles.
PEO2	Engage in life-long learning and professional development to adapt to rapidly changing work environment

PROGRAMME OUTCOMES

PO1	Apply the knowledge of mathematics, science and electronic hardware to provide solutions for all kinds of problems in the respective domain.
PO2	Identify and analyze the complex and real world problems based on the knowledge acquired in the core field.
PO3	Design an innovative interface method to bring the complete solutions using statistical methods and visualize the results for decision making.
PO4	Apply the modern tools and technologies to formulate, design, implement and demonstrate a self-designed solution.
PO5	Apply the scientific knowledge and to provide innovative ideas to shape our society in a better way.
PO6	Identify and develop solutions to environmental related problems and to enhance the quality of life of people.
PO7	Understand and focus towards societal and ethical responsibilities of the professionals in their respective discipline.

COURSE OUTCOMES

SEMESTER I

Course Code: 20ITU01

Course Name: Fundamentals of Computing and C Programming

CO1	Identify appropriate data types, variables, syntax and statements for solving simple problems.
CO2	Understand program solving techniques using arrays, strings, pointers, functions, structures and union for a given scenario.
CO3	Apply appropriate strategies and representations for handling compound data.
CO4	Analyze programs and develop lifelong learning skills needed for computer language

Course Code: 20ITU02**Course Name: Computer System Architecture**

- CO1** Describe various data representation and logic circuits and components of Computers.
- CO2** Discuss the basic concepts of computer organization and Architecture
- CO3** Explain the internal components of combinational circuits, CPU, I/O and Memory.
- CO4** Analyze the design of Logic Circuits ,CPU, IO and Memory

Course Code: 21ITMU02**Course Name: Linux Administration with Scripting**

- CO1** Outline Linux Operating system with particular emphasis on command line tools, utilities and shell scripting.
- CO2** Discuss about shell concepts and use of shell features.
- CO3** Apply the various commands and utilities related to file system management.
- CO4** Analyze the relevant information from a variety of sources.

Course Code: 20ITU04**Course Name: Practical – I : Programming using C**

- CO1** Choose the right data representation formats based on the requirements of the problem.
- CO2** Compare the various programming constructs and choose the right one for the task in hand.
- CO3** Construct programs that demonstrate effective use of C features including arrays, structures and pointer.
- CO4** Illustrate file access.

SEMESTER II**Course Code: 20ITU05****Course Name: Data Structures and Algorithms**

- CO1** Define basic types for data structure, implementation and application
- CO2** Illustrate the complexity of given algorithms.
- CO3** Develop programming skills to apply appropriate data structures in problem solving.
- CO4** Analyze Linear and Non-Linear data structures, file organization, searching and sorting techniques

Course Code: 20ITU06**Course Name: Python Programming**

- CO1** Enumerate the building block of algorithm and notations to Solve the problems.

- CO2** Interpret the Syntax and semantics of Python Programming Languages.
- CO3** Experiment with structuring the data using Lists, Dictionaries, and Tuples and string.
- CO4** Examine the overall concepts of python programming.

Course Code: 20ITMU06 Course Name: Introduction to Programming using Python

- CO1** Understand why Python is a useful scripting language for developers.
- CO2** Illustrate the structure and components of a Python program.
- CO3** Analyze and apply how to read and write files in Python.
- CO4** Build and package Python modules for reusability

Course Code: 20ITU08 Course Name: Practical II-Data Structures using Python

- CO1** Recall the fundamentals concepts of data structures.
- CO2** Construct the program for array, stack, queue and linked list operation.
- CO3** Summarize the searching and sorting techniques
- CO4** Distinguish certain types of biological problem like sequence alignment, gene detection, structure prediction, data-mining literature

SEMESTER III

Course Code: 19ITU09 Course Name: Programming with JAVA

- CO1** Gain knowledge about the principles of Java programming.
- CO2** Apply and experiment the concepts Object Oriented Programming and Develop java standalone applications.
- CO3** Employ the robust & concurrent application using Multithreading and Exception handling concepts.
- CO4** Relate and Experiment Java applications with Graphical User Interface (GUI)using AWT

Course Code: 19ITU10 Course Name: Computer Networks

- CO1** Describe the basic concept of Computer Networks Terminology and Explain the layers of TCP/IP and OSI Reference Model.
- CO2** Examine the Concept of Bluetooth Technology
- CO3** Understand and Building the skills of Subnetting and Routing Mechanism.
- CO4** Explain the Network Security Primitives.

Course Code: 19ITU11**Course Name: Software Engineering**

- CO1** Identify specifications in design and components to build the Architecture
- CO2** Identify and build an appropriate process model for a given project
- CO3** Write the principles of various phases in software development
- CO4** Plan for the appropriate testing at different levels during the development of the software.

Course Code: 19ITU13**Course Name: Practical - III: Programming Using Java**

- CO1** Design and Develop Java problems using object-oriented concepts
- CO2** Develop java applications using packages & collection interfaces.
- CO3** Apply and Develop concurrent Applications using Multithreading
- CO4** Develop event driven and Graphical User Interface (GUI) programming using AWT and Applet

Course Code: 19ITU14**Course Name: Practical-IV: Designing Using Dreamviewer**

- CO1** Identify the components to build a website.
- CO2** Recognize the easy formatting of the documents.
- CO3** Apply to access code hints to learn HTML & CSS
- CO4** Design different layout styles with backend programming

SEMESTER IV**Course Code: 19ITU15****Course Name: Relational Database Management System**

- CO1** Define the fundamental elements of Database Management System.
- CO2** Implement the Relational Database Design and Data Modeling using Entity-Relationship (ER) model.
- CO3** Demonstrate the use of constraints and Relational Algebra Operations, Use of SQL in querying the database and applying various Normalization Techniques.
- CO4** Perform PL/SQL programming using Cursor Management, Error Handling, Procedures, Functions, Triggers and Packages.

Course Code: 19ITU16**Course Name: Operating Systems**

- CO1** Describe the important computer system resources and the role of operating system in their management policies and algorithms.
- CO2** Discuss the process management policies and scheduling of processes by CPU
- CO3** Illustrate the storage management with respect to different storage management technologies
- CO4** Analyze the memory management and its allocation policies.

Course Code: 19ITU17**Course Name: Practical V: RDBMS Applications**

- CO1** Paraphrasing and underlying concepts of database
- CO2** Experimenting the Database model and determining the DDL and DCL commands
- CO3** Structures PL/SQL functions
- CO4** Design and Validate by building applications.

Course Code: 19ITU19**Course Name: Practical – VI: Mobile Application Development**

- CO1** Understand the components of Android studio.
- CO2** Apply the concepts of HTML, XML and CSS
- CO3** Develop simple applications

PROGRAMME NAME: B.Sc. (Computer Technology)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Provide solutions to challenging problems in their profession by applying computer science theory and principles
PEO2	Engage in life-long learning and professional development to adapt to rapidly changing work environment

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Able to apply the knowledge of algorithmic principles in the modeling and designing of computer based systems of varying complexity levels.
PO2	PROBLEM SOLVING AND ANALYZING: Ability to analyze, categorize, formulate and solve the problems that emerges in the field of Computer Technology.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Select and apply current techniques, skills, and tools necessary for providing solutions suitable to the user environment and apply ethical principles and responsibilities during professional practice.
PO4	MODERN TOOL USAGE: Create, select, and apply appropriate techniques, resources, and modern technology tools.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: Function effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings able to communicate and engage effectively with diverse stakeholders.
PO6	SELF-DIRECTED AND LIFE-LONG LEARNING: Recognize the need for Self-motivation to engage in lifelong learning to compete with the changing technology.
PO7	ENHANCING RESEARCH CULTURE: Ability to use knowledge in various domains to identify research gaps and provide solution to new ideas and innovations.

COURSE OUTCOMES

SEMESTER I

Course Code:20CTU01

Course Name: Fundamentals of Computing and C Programming

CO1

Identify appropriate data types, variables, syntax and statements for solving simple problems.

CO2

Understand program solving techniques using arrays, strings, pointers, functions, structures and union for a given scenario.

- CO3** Apply appropriate strategies and representations for handling compound data.
- CO4** Analyze programs and develop lifelong learning skills needed for computer language

Course Code:20CTU02

Course Name: Computer System Architecture

- CO1** Describe various data representation and logic circuits and components of Computers.
- CO2** Discuss the basic concepts of computer organization and Architecture
- CO3** Explain the internal components of combinational circuits , CPU, I/O and Memory.
- CO4** Analyze the design of Logic Circuits ,CPU, IO and Memory

Course Code:20CTIU02

Course Name: Software Foundation Program Using C++

- CO1** Explain the basic concept of programming languages
- CO2** Understand the fundamentals of C++ programming language.
- CO3** Apply and experiment the concepts of pointers, arrays, structures and Files in C++
- CO4** Analyze and develop application using C++

Course Code:20CTU04

Course Name: Practical - I : Programming using C

- CO1** Choose the right data representation formats based on the requirements of the problem.
- CO2** Compare the various programming constructs and choose the right one for the task in hand.
- CO3** Construct programs that demonstrate effective use of C features including arrays, structures and pointer.
- CO4** Illustrate file access.

SEMESTER II

Course Code:20CTU05

Course Name: Data Structures with Algorithms

- CO1** Define basic types for data structure, implementation and application
- CO2** Illustrate the procedures for implementing data structures and algorithms.
- CO3** Develop programming skills to apply appropriate data structures in problem solving.
- CO3** Analyze Linear and Non-Linear data structures, file organization, searching

and sorting techniques

Course Code:20CTIU05

Course Name: Data Visualization

- CO1** Simplify the key techniques and theory used in visualization.
- CO2** Identify the fundamentals of R and Python programming languages.
- CO3** Classify the Data analysis ,Visualization using R and Python and Watson studio
- CO4** Formulate the large datasets into visual graphics

Course Code:20CTU06

Course Name: Python Programming

- CO1** Enumerate the building block of algorithm and notations to Solve the problems.
- CO2** Interpret the Syntax and semantics of Python Programming Languages.
- CO3** Experiment with structuring the data using Lists, Dictionaries, and Tuples and string.
- CO4** Examine the overall concepts of python programming.

Course Code:20CTU08

**Course Name: Practical - II
Programming using Python**

- CO1** Write, test and debug Python Programs.
- CO2** Implement conditionals and loops for Python Programs.
- CO3** Use functions and represent compound data using lists, Tuples and Dictionaries.
- CO4** Develop applications using Tinker and Bio Python.

SEMESTER III

Course Code: 19CTU09

Course Name: Programming with JAVA

- CO1** Gain knowledge about the principles of Java programming.
- CO2** Apply and experiment the concepts Object Oriented Programming and Develop java standalone applications.
- CO3** Employ the robust & concurrent application using Multithreading and Exception handling concepts.
- CO4** Relate and Experiment Java applications with Graphical User Interface (GUI)using AWT

Course Code:19CTU10**Course Name: Computer Networks**

- CO1** Describe the basic concept of Computer Networks Terminology and Explain the layers of TCP/IP and OSI Reference Model.
- CO2** Examine the Concept of Bluetooth Technology.
- CO3** Understand and Building the skills of Subnetting and Routing Mechanism.
- CO4** Explain the Network Security Primitives.

Course Code: 19CTU11**Course Name: PC Hardware and Troubleshooting**

- CO1** Describe the fundamentals of PC technology and memory works
- CO2** Demonstration of motherboard, power supply and cooling protection
- CO3** Describe the storage principles and optical storage
- CO4** Classify the I/O Ports, Keyboard , Mouse Interface and Troubleshooting tools and Data, Disaster Recovery

Course Code: 19CTU13**Course Name: PRACTICAL - III: Programming Using Java**

- CO1** Design and Develop Java problems using object-oriented concepts
- CO2** Develop java applications using packages & collection interfaces.
- CO3** Apply and Develop concurrent Applications using Multithreading
- CO4** Develop Event driven and Graphical User Interface programming using AWT and Applet

Course Code: 19CTU14**Course Name: Practical – IV :Networking**

- CO1** Design enterprise network for given user requirements in an application.
- CO2** Design a network in recent methodology and also to make remote connectivity as one's own work, as a member and leader in a team.
- CO3** Practice packet/file transmission between nodes.
- CO4** Evaluate protocol and network operation in a simulated environment.

SEMESTER IV

Course Code:19CTU15

Course Name: Relational Database Management System

- CO1** Defines the fundamental elements of Database Management System.
- CO2** Implements the Relational Database Design and Data Modeling using Entity-Relationship (ER) model.
- CO3** Demonstrates the use of constraints and Relational Algebra Operations, Use of SQL in querying the database and applying various Normalization Techniques.
- CO4** Performs PL/SQL programming using Cursor Management, Error Handling, Procedures, Functions, Triggers and Packages.

Course Code:19CTU16

Course Name: LINUX and Shell Programming

- CO1** Ability to use various Linux commands that are used to manipulate system operations at admin level and a prerequisite to pursue job as a Network administrator.
- CO2** Ability to write Shell Programming using Linux commands
- CO3** Ability to use filters and pipes.
- CO4** Ability to design and write application to manipulate internal kernel level Linux File System.

Course Code: 19CTU17

Course Name: Practical -V: RDBMS Applications

- CO1** Paraphrasing and underlying concepts of database
- CO2** Experimenting the Database model and determining the DDL and DCL commands
- CO3** Structures PL/SQL functions
- CO4** Design and Validate by building applications.

Course Code: 19CTU19

Course Name: Practical – VI: Web Technology

- CO1** Able to develop a webpage and publishing them.
- CO2** Ability to apply design and development principles in producing software systems of varying complexity using Javascript and ASP.
- CO3** Able to write well-formed/ Valid XML Document.
- CO4** Use web application development software tools like Javascript, ASP, XML and identify the environments currently available on the market to design web sites as a member and leader in a team.

PROGRAMME NAME: B.C.A.

Programme Educational Outcomes (PEO)

PEO1	Provide solutions to challenging problems in their profession by applying Computer Applications theory and principles.
PEO2	Engage in life-long learning and professional development to adapt to rapidly changing work environment.

Programme Outcomes (PO)

PO1	Apply computing knowledge in mathematics for real time applications.
PO2	Recognition of the need for and ability to engage in continuing professional development
PO3	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
PO4	Function effectively as a member or leader of a team engaged in activities appropriate to the Computer Applications discipline.
PO5	Ability to communicate and engage effectively with stakeholders.
PO6	Ability to analyze impacts of computing on individuals, organizations, and society.
PO7	Ability to use appropriate techniques, skills, and tools necessary for computing practice.

COURSE OUTCOMES

SEMESTER I

Course Code:20CAU01

Course Title: Fundamentals of Computing and C Programming

- | | |
|-----|------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Identify appropriate data types, variables, syntax and statements for solving simple problems. |
| CO2 | Understand program solving techniques using arrays, strings, pointers, functions, structures and union for a given scenario. |
| CO3 | Apply appropriate strategies and representations for handling compound data. |

CO4 Analyze programs and develop lifelong learning skills needed for computer language

Course Code:20CAU02

Course Title: Computer System Architecture

CO1 Describe various data representation and logic circuits and components of Computers.

CO2 Discuss the basic concepts of computer organization and Architecture

CO3 Explain the Internal Components of Combinational Circuits, CPU, I/O And Memory.

CO4 Analyze the design of Logic Circuits, CPU, IO and Memory

Course Code:20CAGU02

Course Title: G SUITE (Google Certification)

CO1 Define the management of Files, Folders in Drive.

CO2 Demonstrate the Effective use of various apps in G Suite.

CO3 Apply hangout techniques.

CO4 Build Applications using sheets and forms.

Course Code:20CAU04

Course Title: Practical –I: Programming Using C

CO1 Choose the right data representation formats based on the requirements of the problem.

CO2 Compare the various programming constructs and choose the right one for the task in hand.

CO3 Construct programs that demonstrate effective use of C features including arrays, structures and pointer.

CO4 Illustrate file access.

SEMESTER II

Course Code:20CAU05

Course Title: Data Structures

CO1 Define basic types for data structure, implementation and application

CO2 Illustrate the procedures for implementing data structures and algorithms.

CO3 Develop programming skills to apply appropriate data structures in problem solving.

CO4 Analyze Linear and Non-Linear data structures, file organization, searching and sorting techniques

Course Code:20CAGU05

**Course Title: Professional Collaboration Engineer
(Google Certification)**

- CO1** Plan to administer the G Suite Admin Console.
- CO2** Explain the effective user management in the G Suite Admin Console.
- CO3** Explain the Organizational operations.
- CO4** Combine the advance G Suite adaption and Collaboration within the Organization.

Course Code:20CAU06

Course Title: Python Programming

- CO1** Enumerate the building block of algorithm and notations to Solve the problems.
- CO2** Interpret the Syntax and semantics of Python Programming Languages.
- CO3** Experiment with structuring the data using Lists, Dictionaries, and Tuples and string.
- CO4** Examine the overall concepts of python programming.

Course Code:20CAU08

Course Title: Practical II: Programming Using Python

- CO1** Demonstrate and debug Python Programs.
- CO2** Apply Branching and looping concepts in Python Programs.
- CO3** Analyze the use of functions and compound data using lists, Tuples and Dictionaries.
- CO4** Develop applications using Tkinter and Bio Python.

SEMESTER III

Course Code:19CAU09

Course Title: Programming with Java

- CO1** Gain knowledge about the principles of Java programming.
- CO2** Apply and experiment the concepts Object Oriented Programming and Develop java standalone applications.
- CO3** Employ the robust concurrent application using Multithreading and Exception handling concepts.

- CO4** Relate and Experiment Java applications with Graphical User Interface (GUI) using AWT.

Course Code:19CAU10

Course Title: Computer Networks

- CO1** Describe the basic concept of Computer Networks Terminology and Explain the layers of TCP/IP and OSI Reference Model.
- CO2** Examine the Concept of Bluetooth Technology.
- CO3** Understand and Building the skills of Subnetting and Routing Mechanism.
- CO4** Explain the Network Security Primitives.

Course Code:19CAU11

Course Title: Web Technology

- CO1** Define the knowledge about HTML document with Element Types, Hyperlinks, Images, List, Tables, Forms and Frames
- CO2** Understand the concept of Cascading Style sheet for Dynamic webpage effect in HTML and Java Script documents.
- CO3** Apply Java Script languages with HTML document to add interactive apparatus to web pages.
- CO4** Illustrate the web technology concept to create dynamic web pages implementing PHP and Java script.

Course Code:19CAU13

Course Title: Practical - III: Programming Using Java

- CO1** Design and Develop Java problems using object-oriented concepts.
- CO2** Develop java applications using packages & collection interfaces.
- CO3** Apply and Develop concurrent Applications using Multithreading.
- CO4** Develop Event driven and Graphical User Interface programming using AWT and Applet.

Course Code:19CAU14

Course Title: Practical IV -: Web Programming Using HTML & Scripting Languages

- CO1** Understand and identify the tags used in HTML document.
- CO2** Apply the Cascading Style Sheet to web pages.
- CO3** Demonstrate the client-side scripting using Java script.
- CO4** Developing programming skills to experiment server-side scripting using PHP.

SEMESTER IV

Course Code: 19CAU15

Course Title: Relational Database Management System

- CO1** Defines the fundamental elements of Database Management System.
- CO2** Implements the Relational Database Design and Data Modeling using Entity-Relationship (ER) model.
- CO3** Demonstrates the use of constraints and Relational Algebra Operations, Use of SQL in querying the database and applying various Normalization Techniques.
- CO4** Performs PL/SQL programming using Cursor Management, Error Handling, Procedures, Functions, Triggers and Packages.

Course Code: 19CAU16

Course Title: System Software and Operating System

- CO1** Understand the basic concepts of System Software.
- CO2** Experimenting and determining the various Translators.
- CO3** Illustrating the concepts of Operating system.
- CO4** Acquire a detailed understanding of functions of operating system.

Course Code: 19CAU17

Course Title: Practical -V: RDBMS Applications

- CO1** Paraphrasing and underlying concepts of database.
- CO2** Experimenting the Database model and determining the DDL and DCL commands.
- CO3** Structures PL/SQL functions
- CO4** Design and Validate by building applications.

PROGRAMME NAME: B.Sc. (Computer Science with Cognitive Systems)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Provide solutions to challenging problems in their profession by applying Computer Science Theory and Principles
PEO2	Engage in life-long learning and professional development to adapt to rapidly changing work environment.
PEO3	Provide Technical growth in fundamental and modern computing practices, passion for the profession and its growth.
PEO4	Proficient in successfully designing innovative solutions to real life problems.

PROGRAMME OUTCOMES

PO1	Analyze a complex computing problem and to apply principles of computing and other relevant disciplines to identify solutions.
PO2	Students will be able to use appropriately system design notations and apply system design engineering process in order to design, plan, and implement software systems
PO3	Function effectively as a member or leader of a team engaged in activities appropriate to the program's discipline.
PO4	Indulge in sustainable computing practice to cope up state of the art technologies.
PO5	Recognize professional responsibilities and make informed judgments in computing practice based on legal and ethical principles.
PO6	Develop the ability to communicate effectively in a variety of professional contexts.
PO7	Prepare the students for a career in information technology oriented business, industry, scientific and technical fields.

COURSE OUTCOMES

SEMESTER I

Course Code: 20TCU01

Course Name: Operating System

- | | |
|------------|---------------------------------------------------------|
| CO1 | Generalize the basic concepts of operating system |
| CO2 | Illustrate the roles and responsibilities of Windows |
| CO3 | Differentiate the types of File services |
| CO4 | Analyse the operations file systems and file management |

Course Code: 20TCU02

Course Name: Practical I : Introduction to Work Sheets

- CO1** Explain the basic concepts of Microsoft Excel
- CO2** Analyse the critical thinking skills to design and create spread sheets.
- CO3** Classify the business requirements using spread sheet vocabulary
- CO4** Calculate mathematical formulas with Formatting and reporting

Course Code: 20TCU04

Course Name: Practical II: Programming using Operating System

- CO1** Apply the concepts of Operating system
- CO2** Gain knowledge operating system concepts that includes architecture
- CO3** Connect the components and management aspects of concurrency
- CO4** Prioritize the important computer system resources

SEMESTER II

Course Code: 20TCU05

Course Name: Data Structures

- CO1** Illustrate the fundamental concepts of data structures.
- CO2** Classify the concepts of trees and graphs.
- CO3** Analyze and experiment concepts of sorting.
- CO4** Apply and classify concepts of merging and Files and data models

Course Code: 20TCU06

Course Name: Computer Networks

- CO1** Discuss the key technological components of the computer network
- CO2** Describe how computer networks are organized with the concept of layered approach.
- CO3** Describe how routing protocols work and OSI layers
- CO4** Implement a simple LAN with hubs, bridges and switches.

Course Code: 20TCU08

**Course Name: Practical - III : Programming
using Computer Networks**

- CO1** Identify various network commands
- CO2** Illustrate simulation tools
- CO3** Evaluate various network protocols
- CO4** Evaluate the challenges in building networks and solutions to those.

PROGRAMME NAME: B.B.A.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Explore social and environmental aspects with professional values, ethics and equity to renovate the learned and acquired knowledge, skills and expertise to the society
PEO2	Involve in lifelong learning to adapt enlightening needs in a changing world to maintain their talent and also to contribute to the advancement of knowledge in a Business environment.
PEO3	Learn to adapt to a rapidly changing environment with learned and applied new Business skills
PEO4	This program will equip the candidate to be socially responsible and value driven citizens committed to sustainable development of the Country
PEO5	To inculcate the spirit of team work, integrity, professional values so that the student will be able to perform effectively in an organizational set up or on their own entrepreneurial ventures

PROGRAMME OUTCOMES

PO1	The Program enables the students to gain and apply key theories and applications in business context.
PO2	Equip students with critical thinking and analytical skill for solving business problems.
PO3	Make the students sensitive to ethical and sustainable business practices.
PO4	Development of communication skills, interpersonal relationships and ability to work as a team.
PO5	Groom the students to become employable, business conscious and there by become responsible citizens.

COURSE OUTCOMES

SEMESTER I

Course Code: 20BBU01

Course Name: Principles of Management

CO1 Analyze the basic concepts of management and evolution in management.

- CO2** Articulate the importance of planning and decision making process for business.
- CO3** Correlate the various Organization Structures for grouping of activities, Hierarchy of authority & responsibility relationship for achievement of common goals.
- CO4** Analyze and integrate the concepts of directing the Workforce; improving performance through motivation & effective leadership.

Course Code: 20BBU02

Course Name: Communication for Executives

- CO1** Appraise the importance of communication, its types and the media used for communication
- CO2** Deduce the business communication strategies and principles to prepare effective Business letters.
- CO3** Practice the official communication and skills set for the report writing.
- CO4** Examine the advanced career oriented communication, business etiquette and relationship building skills

SEMESTER II

Course Code: 20BBU04

Course Name: Organisational Behaviour

- CO1** Analyze the fundamental concepts of organizational behavior
- CO2** Understand and integrate the role of personality, Perception and Motivation in an Organizational Context.
- CO3** Identify and appraise the determinants of Job Satisfaction, Employee Morale and Attitude.
- CO4** Examine the significance of working in a group, resolving conflicts, and applying various Leadership Styles.

Course Code: 20BBU05

Course Name: Economics for Executives

- CO1** Deduce the basic concepts of Managerial Economic Concepts.
- CO2** Express and articulate the Demand and supply conditions in business.
- CO3** Illustrate the production function, Cost and revenue Concept.
- CO4** Categorize the pricing under perfect competition, monopoly and monopolistic competition analyse the role of government in business

SEMESTER III

Course Code: 19BBU07

Course Name: Financial Accounting

- CO1** Define & recall the basics of accounting & steps in accounting.
- CO2** Understand the double entry and single entry book keeping system.
- CO3** Identify accounting errors & prepare Bank Reconciliation statement.
- CO4** Analyze the financial statements of trading & non trading organization

Course Code: 19BBU08

Course Name: Production and Materials Management

- CO1** Knowledge functions and principles of production management.
- CO2** Understand the importance of materials handling and management.
- CO3** Implement effective inventory management.
- CO4** Analyze the different types of quality control.

Course Code: 19BBU09

Course Name: Marketing Management

- CO1** Define Marketing functions /Environment.
- CO2** Understand Knowledge of buyer behaviour.
- CO3** Identify product types/ pricing policies.
- CO4** Analyze emerging funds in marketing.

Course Code: 19BBU10

Course Name: Legal Aspects of Business

- CO1** Understand the basics concepts of Law of Contract.
- CO2** Recognize legal risks in Business.
- CO3** Interpret and resolve legal risks for business decisions.
- CO4** Analyse and differentiate ethical from unethical legal practices.

Course Code: 19BBU11

Course Name: Introduction to Information

- CO1** Define the basic concepts of Information Technology.
- CO2** Describe the different types of computers.
- CO3** Use of Computer Components & Flow charts
- CO4** Examine the E-commerce applications in business.

Course Code: 19BBU12

Course Name: Practical-I - PC Software (Ms-Office)

- CO1** Define the basic concepts of MS-Office.
- CO2** Illustrate the different types of worksheets in MS-Excel.
- CO3** Demonstrate the Spread Sheet using MS-Access
- CO4** Designing templates or slides in MS-Power point Presentation.

SEMESTER IV

Course Code: 19BBU13

Course Name: Financial Management

- CO1** Define & recall the basic financial functions.
- CO2** Understanding the factors determining financial decisions.
- CO3** Apply capital budgeting evaluation techniques.
- CO4** Analyse the short term and long term sources of capital & its application.

Course Code: 19BBU14

Course Name: Human Resource Management

- CO1** Define the basics of Human Resource Management.
- CO2** Understanding the human resources planning.
- CO3** Develop an appropriate compensation plan.
- CO4** Analyze trends in human resources management.

Course Code: 19BBU15

Course Name: Taxation

- CO1** Define the tax system & revenue generating mechanism.
- CO2** Understanding the tax exemptions with reference to residential status.

CO3 Apply the computation of tax liability of an Individual & business entity.

CO4 Analyze the GST system & its benefits to end customers.

Course Code: 19BBU16

Course Name: Management Information System

CO1 Define the information system in business.

CO2 Understanding the concepts of Management Information System.

CO3 Apply the Decision Support System in business.

CO4 Categorize the Database Management System and Transaction Processing Systems.

Course Code: 19BBU17

Course Name: Retail Management

CO1 Defining the basic concepts of retailing & its environment.

CO2 Understanding the Retail models and its strategies.

CO3 Develop the Retail store planning Process and retailing in India.

CO4 Analyse the Retail Management Information System(E-Tailing)

PROGRAMME NAME: B.B.A. (Computer Applications)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Graduates will be able to create an environment and industry ready in facing the challenges by ethically responsible in contribution to the society and in the business field.
PEO2	Graduates will have an ability to adapt changes in the context of growing demand for computer based business applications with a high degree of competency in solving an application of management and systems knowledge in the ever changing global scenario.

PROGRAMME OUTCOMES

PO1	To enable the students to acquire specific knowledge on business and research.
PO2	To develop the students' leadership and ability and to avail the opportunities in local, regional, national and global level.
PO3	To develop entrepreneurial skills with focus towards social responsibility and ethical code of conduct.
PO4	To provide knowledge in programming languages and help them to utilize such knowledge in the application in industries.
PO5	To develop skills in the areas of office management software needed for business.

COURSE OUTCOMES

SEMESTER I

Course Code: 20BCU01

Course Name: Principles of Management

- | | |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Define basic concepts of management and evolution in management. |
| CO2 | Understand the importance of planning for business. Decision making based on plans. |
| CO3 | Identify the various organization structures for grouping of activities, hierarchy of authority and responsibility, relationship for achievement of common goals. |
| CO4 | Analyze and interpret the concepts of directing the workforce, improving performance through motivation and effective leadership. |

Course Code: 20BCU02

Course Name: Business Communication

- CO1** Recall and remember the basics of business communication.
- CO2** Interpreting information through letters and understanding technology based modes of communication.
- CO3** Analyzing and examining the business situations and the subsequent preparation and presentation of business reports.
- CO4** Examine in choosing a career path and plan towards professional growth at work place.

Course Code: 200BCU03

Course Name: Practical I – Business Communication (Using Ms - Office)

- CO1** Recall the features of Microsoft Office Applications for an error-free business communication
- CO2** Understanding and relating skills using MS-Excel worksheets for business.
- CO3** Understanding the skills of Google Apps.
- CO4** Apply PowerPoint using various tools for business presentations.

SEMESTER II

Course Code: 20BCU05

Course Name: Organisational Behaviour

- CO1** Define the concepts of organizational behavior and their contribution to the development of an organization
- CO2** Inferring the role of personality, Perception and Motivation in an Organizational Context.
- CO3** Examining the determinants of Job Satisfaction, Employee Morale and Attitude
- CO4** Appraising the significance of working in a group, resolving conflicts, and applying various Leadership Styles.

Course Code: 20BCU06

Course Name: Web Technology

- CO1** Define internet concepts and basic structures of HTML Program.
- CO2** Construct HTML tags for lists, tables and images.
- CO3** Examine Links and Frames in Html.
- CO4** Develop and apply Java Script language.

Course Code: 20BCU07

Course Name: Practical - II - Web Technology

- CO1** Define HTML, DHTML tags.
- CO2** Understanding list, table, frame and form tags in HTML.
- CO3** Develop and build Web Pages using JavaScript.
- CO4** Experiment Internal and External style sheets

SEMESTER III

Course Code: 19BCU08

Course Name: Financial Accounting

- CO1** Define & recall the basics of accounting & steps in accounting.
- CO2** Understand the double entry and single entry book keeping system.
- CO3** Identify accounting errors & prepare Bank Reconciliation statement.
- CO4** Analyze the financial statements of trading & non trading organization .

Course Code: 19BCU09

**Course Name: Production and
Materials Management**

- CO1** Define functions and principles of production management.
- CO2** Understand the importance of materials handling and management.
- CO3** Identify effective inventory management.
- CO4** Analyze the different types of quality control.

Course Code: 19BCU10

Course Name: Marketing Management

- CO1** Define Marketing functions /Environment.
- CO2** Understand Knowledge of buyer behaviour.
- CO3** Identify product types/ pricing policies.
- CO4** Analyze emerging funds in marketing.

Course Code: 19BCU11

Course Name: Legal Aspects of Business

- CO1** Define the basics concepts of Law of Contract.
- CO2** Understanding the free consent void agreement's & contingent Quasi contracts.
- CO3** Examine the modes of discharge of contract & its remedies.
- CO4** Analyze ethical practices of business.

Course Code: 19BCU12

**Course Name: Practical - II - Financial Accounting
Package-Tally**

- CO1** Define the basic concepts of accounts using tally package.
- CO2** Prepare different types of Ledgers and build Vouchers.
- CO3** Develop Trial balance and Final accounts.
- CO4** Experiment Inventory, GST reports and Payroll processing.

SEMESTER IV

Course Code: 19BCU13

Course Name: Financial Management

- CO1** Define & recall the basic financial functions.
- CO2** Understanding the factors determining financial decisions.
- CO3** Apply capital budgeting evaluation techniques.
- CO4** Analyse the short term and long term sources of capital & its application.

Course Code: 19BCU14

Course Name: Human Resource Management

- CO1** Define the basics of Human Resource Management.
- CO2** Understanding the human resources planning.
- CO3** Develop an appropriate compensation plan.
- CO4** Analyze trends in human resources management.

Course Code: 19BCU15

Course Name: Taxation

- CO1** Define the tax system & revenue generating mechanism.
- CO2** Understanding the tax exemptions with reference to residential status.
- CO3** Apply the computation of tax liability of an Individual & business entity.

CO4 Analyze the GST system & its benefits to end customers.

Course Code: 19BCU16

Course Name: Web Technology

CO1 Define internet concepts & basics structures of HTML Program.

CO2 Understand HTML tags for programs.

CO3 Develop & apply JavaScript language.

CO4 Analyse& design cascading style sheets.

Course Code: 19BCU17

Course Name: Practical - III - Web Technology

CO1 Define HTML, DHTML tags.

CO2 Understanding list, table, frame and form tags in HTML.

CO3 Develop and build Web Pages using JavaScript.

CO4 Experiment Internal and External style sheets

Course Code: 19BCU18

Course Name: Retail Management

CO1 Defining the basic concepts of retailing & its environment.

CO2 Understanding the Retail models and its strategies.

CO3 Develop the Retail store planning Process and retailing in India.

CO4 Analyse the Retail Management Information System(E-Tailing)

PROGRAMME NAME: B.B.A. (Logistics)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Graduates will be able to approach the business environment with optimism and enable them to be industry ready in facing the challenges by ethically responsible in contribution to the society and in the business field.
PEO2	Graduates will have an ability to identify opportunities adapt and engage themselves in the field of logistics with their professional skills.
PEO3	Graduates will understand the relationship between logistics specific discipline knowledge and other functional areas of management
PEO4	Graduates will devise their own approaches in inventory management cargo management, customs law, Multi model transportation.

PROGRAMME OUTCOMES

PO1	On graduation students will exhibit their ability to communicate and take decision effectively.
PO2	Students will be able to understand concepts of logistics & apply them in their profession.
PO3	Students will be able to apply their knowledge and organize their ability in a Professional way to become result oriented.
PO4	Students will be able to apply the concept of team work, time management skills towards achievement of their objectives.
PO5	Students will develop and apply logistics related strategies in the growing logistics business environment.

COURSE OUTCOMES

SEMESTER I

Course Code: 20BLU01

Course Name: Principles of Management

- | | |
|------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Define basic concepts of management and evolution in management. |
| CO2 | Understand the importance of planning for business. Decision making based on plans. |
| CO3 | Identify the various organization structures for grouping of activities, hierarchy of authority and responsibility, relationship for achievement of common goals. |

- CO4** Analyze and interpret the concepts of directing the workforce, improving performance through motivation and effective leadership.

Course Code: 20BLU02

Course Name: Fundamentals of Logistics Management

- CO1** Define the concepts of Logistics management
- CO2** Understand the Logistics interface with marketing and its Channel management
- CO3** Identify the basic concepts of Inventory management & warehousing
- CO4** Analyse the basic characteristics and costs of warehousing and materials handling activities

Course Code: 20BLU04

Course Name: Organisational Behaviour

- CO1** Understand the concepts of organizational behavior
- CO2** Explain the role of personality, Perception and Motivation in an Organizational Context.
- CO3** Understand the determinants of Job Satisfaction, Employee Morale and Attitude
- CO4** Recognizing the significance of working in a group, resolving conflicts, and applying various Leadership Styles.

SEMESTER II

Course Code: 20BLU05

Course Name: Economics for Executives

- CO1** Define the basic economic concepts and enable managerial decision making.
- CO2** Understanding the demand and supply function.
- CO3** Construct a production function applying acquired knowledge.
- CO4** Compare the pricing under perfect competition, monopoly and monopolistic competition.

PROGRAMME NAME: B.Sc. (Biotechnology)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Understand and apply the concepts of Biotechnology, instrumentation and related aspects of science and technology.
PEO2	Produce research-oriented Biotechnology graduates who will be employable in academic/Industry sponsored research projects for pursuing higher studies and successful careers in industry
PEO3	To promote critical thinking and full-fledged grasp of essential aspects of bioethics inculcating a Value System among Students
PEO4	To enrich the global think-tank with right mixes of innovative ability, existing policies at generating and safeguarding the product of their intellect, equipped with entrepreneurship abilities contributing to self and national development.

PROGRAMME OUTCOMES

PO1	Understand and comprehend the fundamental and advanced knowledge on various domains of Biotechnology.
PO2	Develop an independent thinking ability, design and conduct experiments as well as to analyze and interpret scientific data.
PO3	Understanding of professional and ethical responsibility
PO4	Equip the students with the laboratory skills in biotechnology and usage of modern tools for promoting life science research
PO5	Ability to communicate effectively and promote team working ability
PO6	Awareness of the impact of bio-solutions in a global, economic, environmental, and societal context.
PO7	Facilitate to assimilate technologies through an inter-disciplinary learning habit

COURSE OUTCOMES

SEMESTER I

Course Code: 20BTU01**Course Title: Cell Biology and Genetics**

- CO1** Remember the cell structures, functions, cellular organelles and various concepts of genetics metabolic processes will help students to design experiments with appropriate understanding and leads to conduct genuine research
- CO2** Understand to think critically in reading and analyzing biological information and will demonstrate the activity to articulate, verbally and in writing knowledge of biology, biological methods and biological issues in context.
- CO3** Apply and gain knowledge about the inheritance pattern of the genes genetic diseases and also about the gene frequencies in the population
- CO4** Analyze and take up career in research or clinical molecular genetics labs.

Course Code: 20BTU02**Course Title: Allied Chemistry**

- CO1** Remember to describe the chemical bonding structure
- CO2** Understand the hybridization, geometric and isomeric properties of molecules
- CO3** Apply and compare the rate and order of chemical reactions
- CO4** Analyze about electrophilic substitution reactions in aromatic compounds

Course Code: 20BTU03**Course Title: Practical I – Cell Biology And Genetics**

- CO1** Remember the basics of cell and its components give them a strong foundation on the basic unit of life.
- CO2** Understand the microscopic techniques, method laboratory management and handling
- CO3** Apply experimentally the concept of mutation by physical and chemical methods.
- CO4** Analyse the knowledge in raising mutants using physical and chemical agents

Course Code: 20BTU04**Course Title: Allied Practical I – Chemistry**

- CO1** Remember the concepts of volumetric analysis; molarity, molality, normality and concentration.
- CO2** Explain the concept for estimation of Nitrogen, Halogen, and Sulphur
- CO3** Illustrate the standardization of protocol for aliphatic and aromatic compounds
- CO4** Identify the various experimental methods for exploring saturated and unsaturated compounds

Course Code: 20BTU05**Course Title: Biotechniques**

- CO1** Remember the concepts of laboratory instructions and learn the metric system concepts
- CO2** Understand to analyse different microscopic techniques and learn the analytical balance in various fields.
- CO3** Apply the principles and applications of spectroscopy in environmental and biomedical fields
- CO4** Analyse the chromatography, electrophoresis techniques and their applications in biomedical sciences

Course Code: 20BTU06**Course Title: Allied II – Biochemistry**

- CO1** Remember the foundation in the biochemical aspects of cellular functions which forms a base for their future studies.
- CO2** Understand the structures and functions of biomolecules that form the basis of what we understand to be living organisms.
- CO3** Apply the principles of biochemical pathways which regulate the cellular mechanism.
- CO4** Analyse and create the aspect of metabolism and biosynthesis of bio molecules in regulatory functions.

Course Code: 20BTU07**Course Title: Practical II - Biotechniques**

- CO1** Knowledge on handling and critically analysis of various Laboratory Equipments: Laminar Air Flow, Air Oven, Weighing balance, and preparation of buffers
- CO2** Understanding the characteristics and Principles of Colorimetry: Beer's law
- CO3** Demonstrate various separation techniques, identification, and quantification
- CO4** Students enrich themselves with contemporary sophisticated equipment and able to elucidate and characterize their essential features and principle

Course Code: 20BTU08**Course Title: Allied Practical II- Biochemistry**

- CO1** Describe the estimation procedure for Aminoacids and Proteins from biological samples.
- CO2** Outline the biochemical method involved in estimation of nucleic acids
- CO3** Use the appropriate procedure for estimation of sugars and assessment of oil to determine adulteration
- CO4** Investigate the basic principle involved in identification of nutritional deficiency for calcium and inorganic phosphate

SEMESTER III

Course Code: 19BTU09

Course Title: Microbiology

- CO1** Gain knowledge on history, scope and importance of microbial taxonomy and systematics
- CO2** Discuss various techniques involved in culturing or isolation of microbes
- CO3** Understand about the ultra-structure of microbial cell and staining techniques
- CO4** Integrate the theoretical knowledge on microbiology for applications in plant and human

Course Code: 19BTU10

Course Title: Molecular Biology

- CO1** Understand the significance of DNA as a genetic material. Models and enzymology of the DNA replication
- CO2** Learn the mechanism of transcription, role of RNA polymerase in transcription, processing of mRNA and translational mechanisms
- CO3** Become familiar with mutations, repair mechanisms and Gene regulation
- CO4** Predict the information about various methods of recombination

Course Code: 19BTU12

Course Title: Practical III - Microbiology and Molecular Biology

- CO1** Learn the techniques relating to microscopy, culture handling and maintenance, microbial biochemistry and physiology and molecular biology
- CO2** Understand the safety precautions required in microbiology laboratories. Employ the right staining methods and apply those methods to identify microorganisms
- CO3** Understand the molecular and genetic mechanisms behind the recent advancements in the field of medicine and drug development
- CO4** Knowledgeable in mutagenesis, mutagen and its impact on phenotypic traits of an organism and also in isolating antibiotic resistant and auxotrophic mutants using various techniques.

SEMESTER IV

Course Code: 19BTU14

Course Title: IMMUNOLOGY

- CO1** Understand the general properties of immune response both innate and adaptive
- CO2** Comprehend the cells and tissues of the immune system, structure of antibodies and antigens
- CO3** Acquire information of various autoimmune disorders and immunodeficiency syndromes
- CO4** Envisage the role of hypersensitivity reactions and vaccine development

Course Code: 19BTU16

Course Title: Practical IV - Immunology

- CO1** Understand the basic concepts in immunology by practical approach
- CO2** Learn the various human haematological techniques
- CO3** Acquire knowledge in recent advancement in human immunology
- CO4** Study about the recent advancement in immunology and know about the diagnostic methods for human infectious diseases

PROGRAMME NAME: B.Sc. (Microbiology)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Understand the impact of science in societal and environmental contexts, and demonstrate the need for sustainable development
PEO2	Create, select and apply appropriate techniques and scientific resources with a professional understanding of the limitations

PROGRAMME OUTCOMES

PO1	Students Acquire knowledge and understanding of the Microbiology concepts as applicable to diverse areas such as medical, industrial, environment, genetics, agriculture, food and others.
PO2	Problem Solving, critical thinking and Analyzing is encouraged during the laboratory work.
PO3	The graduates in Microbiology develop awareness which is mandatory for practicing scientific areas including ethics of working in a laboratory, environmental sustainability and ethics followed for scientific publishing of their research work in future.
PO4	Skill to use important and emerging tools to retrieve data and compare the data of the biological macromolecules with an interdisciplinary approach.
PO5	The students graduating in Microbiology develop excellent communication skills both in the written as well as spoken language that are essential to pursue higher studies in some of the best and internationally acclaimed universities and research institutions spread across the globe.
PO6	Develop a broader perspective of the discipline of Microbiology to enable the students to identify challenging societal problems and plan for their professional career to develop innovative solutions for such problems and recognize the need for life-long learning in the context of technological change.
PO7	Competent enough to use knowledge and skills to analyze problems involving microbes, articulate these with peer team members and other stake holders to undertake remedial measures

COURSE OUTCOMES

Semester I

Course code : 20MBU01

Course Name : Basic concepts of Microbiology

- CO1** Summarize the fundamental concepts of Microbiology and analyze the contributions of Scientists
- CO2** Explain the structure and function of bacterial cell.
- CO3** Apply microscopic techniques to observe microorganisms and compare different methods of sterilization
- CO4** Discover the pure culture techniques and Illustrate preservation of cultures

Course code : 20MBU02

Course Name : Practical I – Basic Concepts of Microbiology

- CO1** Practice handling of glassware and experiment with equipment
- CO2** Identify, test and interpret the microbial growth in different media
- CO3** Experiment with various staining techniques, micrometry and hanging drop method
- CO4** Interpret different pure culture techniques and analyze anaerobic cultivation methods

Course code : 20MBU03

Course Name : Allied Chemistry

- CO1** Correlate the chemical bonding structure
- CO2** Categorize and illustrate the geometric and isomeric properties of molecules
- CO3** Apply and analyze the laws of conductance and buffer solutions
- CO4** Categorize solutions chemically

Course code : 20MBU04

Course Name : Allied Practical II - Chemistry

- CO1** Estimate chemicals by volumetric method
- CO2** Infer the presence of elements
- CO3** Experiment with organic compounds
- CO4** Analyze the functional group tests

Semester II

Course code : 20MBU05

Course Name : Microbial Physiology and Metabolism

- CO1** Categorize microbial nutritional requirements and growth of bacteria
- CO2** Illustrate the metabolic pathways involved in aerobic respiration
- CO3** Analyze the pathways of anaerobic respiration and fermentation
- CO4** Categorize the cell signaling molecules and illustrate the microbial biosynthetic pathways

Course code : 20MBU06

Course Name : Practical III - Microbial Physiology and Metabolism

- CO1** Calculate the generation time of bacteria by different methods
- CO2** Infer the biochemical characteristics of microorganisms
- CO3** Analyze and identify organisms using carbohydrate fermentation test
- CO4** Examine and analyze the degradation of polymers by microorganisms and the factors affecting microbial growth

Course code : 20MBU07

Course Name : Allied - Biomolecules (MIC)

- CO1** Describe and deduce the structure and properties of carbohydrates
- CO2** Summarize the structure and classification of amino acids
- CO3** Illustrate the properties of lipids & Nucleic acids
- CO4** Categorize enzymes and their functions

Course code : 20MBU08

Course Name : Allied Practical-IV – Biomolecules (MIC)

- CO1** Identify and analyze carbohydrates qualitatively
- CO2** Distinguish mono, di and polysaccharides
- CO3** Analyze amino acids qualitatively
- CO4** Experiment the properties of lipids

Semester III

Course code : 19MBU09

Course Name : Microbial Taxonomy and Diversity

- CO1** Memorize the concepts and techniques in microbial taxonomy
- CO2** Demonstrate the classification of systemic bacteriology
- CO3** Explain the characteristics and significance of fungal taxonomy
- CO4** Describe the general characteristics and reproduction and life cycle of protozoa & viruses

Course code : 19MBU10

Course Name : Microbial Genetics

- CO1** Describe the genome organization in prokaryotes
- CO2** Explain the mechanism of replication, transcription, translation in prokaryotes
- CO3** Illustrate the application of gene mutation and repair mechanisms and gene regulation
- CO4** Analyze the role of transposable elements and genetic recombination in prokaryotes and eukaryotes

Course code : 19MBU11

Course Name : Practical III - Microbial Diversity and Genetics

- CO1** Describe the classification of Microorganisms.
- CO2** Summarize the plasmid and chromosomal DNA isolation from bacteria
- CO3** Demonstrate the techniques for DNA and protein separation
- CO4** Identify the isolation of mutants by various techniques

Course code : 19MBU12

Course Name : Allied – Biochemistry (MIC)

- CO1** Describe the metabolic pathways and bioenergetics
- CO2** Distinguish the properties, physiological functions and deficiency of vitamins and minerals
- CO3** Demonstrate the analytical techniques in Biology
- CO4** Relate the hormonal imbalance and its disease syndrome

Course code : 19MBU13

Course Name : Allied Practical-III – Biochemistry(MIC)

- CO1** Identify the pH of solutions
- CO2** Describe the preparation of Molar and Normal solutions
- CO3** Demonstrate the estimation of Proteins and carbohydrates
- CO4** Experiment the estimation of fatty acids

SEMESTER IV

Course code : 19MBU14

Course Name : Immunology

- CO1** Describe the Immune system and immune response, types of antigen and antibodies and complement
- CO2** Distinguish about Hypersensitivity and Autoimmune diseases
- CO3** Stimulate the knowledge about grafting and immunohematology
- CO4** Illustrate the principles of serology in diagnostics

Course code : 19MBU15

Course Name : Medical Bacteriology

- CO1** Demonstrate the types of infections, sources and methods of transmission.
- CO2** Explain the pathogenicity of Gram positive organisms
- CO3** Classify the common gram negative bacterial infections
- CO4** Describe the pathogenicity of Mycobacteria, Spirochaetes and Rickettsiae

Course code : 19MBU16

Course Name: Practical IV-Medical Bacteriology and Immunology

- CO1** Memorize knowledge about the characterization of infectious agents.
- CO2** Describe the antibiotic susceptibility testing
- CO3** Demonstrate antigen and antibody interaction
- CO4** Calculate the Blood cell count and haemoglobin content

PROGRAMME NAME: B.Sc. (Food Processing Technology and Management)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	Understand the impact of science in societal and environmental contexts, and demonstrate the need for sustainable development
PEO2	Create, select and apply appropriate techniques and scientific resources with a professional understanding of the limitations

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Helps students to acquire knowledge and understanding of the Food Processing Technology and Management concepts as applicable to diverse areas such as industrial, environment, genetics, agriculture, food and others.
PO2	PROBLEM SOLVING AND ANALYSING: Helps students to identify, formulate, analyze and solve complex problems related to food industry.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Helps students to understand the impact of professional science and technological solutions in societal and environmental contexts and for sustainable Development.
PO4	MODERN TOOL USAGE: It develops skills of students to use important and emerging techniques, to retrieve data, and compare the data of the emerging techniques in food development with an interdisciplinary approach.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: Students can operate objectively as an individual and as a member in diverse teams and they will be able to communicate effectively on complex science and technological activities with society at large and able to write effective reports and documentation.
PO6	SELF DIRECTED / LIFE LONG LEARNING: Helps Students to develop a broader perspective of the discipline to enable them to identify challenging societal problems and plan their professional career to develop innovative solutions for such problems and recognize the need for life-long learning in the context of technological change.
PO7	ENHANCING RESEARCH CULTURE: Helps students to be competent enough to use their knowledge and skills to analyse problems, articulate these with peer team members and other stake holders for taking remedial measures to overcome the issues.

COURSE OUTCOMES

SEMESTER I

Course Code: 20FPU01

Course Name: Food Science

- CO1** Defining the composition of cereals and explaining the types of browning.
- CO2** Describing the effect of heat on oil absorption and illustrating the toxins in nuts and oil seeds.
- CO3** Enumerating the classification of fruits and vegetables. Explaining the storage techniques of vegetables and fruits
- CO4** Describing the composition of milk and egg, also illustrating the nutritive value of meat, poultry and fish.

Course Code: 20FPU02

Course Name: Practical I – Food Science

- CO1** Describe different food groups, their Nutritive value and role in day's diet
- CO2** Select different methods of cooking
- CO3** Preparing recipes
- CO4** Relate nutritive value to food selection

Course Code: 20FPU03

Course Name: Allied Food Chemistry- I

- CO1** Describing the physico chemical changes in food and illustrating the water activity and role of water in foods.
- CO2** Identifying the components and characteristics of food starch and explains the gelatinization and crystallization process of carbohydrates.
- CO3** Memorizing the properties of proteins and lipids and analyzing their effects on food.
- CO4** Examining the role of non-nutritive components in foods and enumerating the types and role of food additives in food.

Course Code: 20FPU04

Course Name: Allied: Practical II – Food Chemistry -I

- CO1** Identifying the physico chemical changes in foods.
- CO2** Recognizing the knowledge acquired in food preparation.
- CO3** Illustrating the effect of chemical reactions in foods.
- CO4** Examining the food interactions and outcomes.

SEMESTER II

Course Code: 20FPU05

**Course Name: Food Processing Technology I
(Fruits and Vegetables)**

- CO1** Describing the concepts of processing of fruits and vegetables and interpreting post harvesting of fruits and vegetables.
- CO2** Identifying the characteristics of fruits and vegetables and interpreting the ripening process of fruits.
- CO3** Identifying the storage of fruits and focusing on packing and transportation of fruits and vegetables.
- CO4** Describing fermented products and experimenting with the processing of various food products and focusing drying and dehydration of fruits.

Course Code: 20FPU06

**Course Name: Practical III – Processing of
Fruits and Vegetables**

- CO1** Stating the preparation of fruit jam and jelly.
- CO2** Summarizing preservation of foods.
- CO3** Preparing fruit juices.
- CO4** Comparing different methods of drying of food.

Course Code: 20FPU07

Course Name: Allied Food Chemistry – II

- CO1** Identifying the effects of cooking on nutrition and explains the interaction of food and medium of cooking.
- CO2** Categorizing natural pigments and examining its changes when exposed to heat, acid and alkali.
- CO3** Describing the properties of enzymes and illustrates changes occurring during processing of food products.
- CO4** Memorizing the properties of colloids and emulsion and infers its application in food processing.

Course Code: 20FPU08

Course Name: Allied: Practical IV- Food Chemistry –II

- CO1** Recognizing the retention of nutrients in cooked foods
- CO2** Identifying the presence of pigments
- CO3** Demonstrating enzymatic browning
- CO4** Analyzing emulsions, colloids and gels

SEMESTER III

Course Code: 19FPU09

Course Name: Principles of Food Preservation and Packaging

- CO1** Describe different packaging materials
- CO2** Infer the preservation and packaging techniques
- CO3** Discover the merits of packaging
- CO4** Analyze shelf life of food packaging

Course Code: 19FPU10

Course Name: Food Processing Technology-II (Cereals , pulses , nuts and oil seeds)

- CO1** Describe various crops occurrence in India
- CO2** Identify various post-harvest processing techniques
- CO3** Sketching various structure of various crops
- CO4** Analyze shelf life of various storage condition

Course Code: 19FPU11

Course Name: Practical III – Food Processing Technology-II (Cereals , pulses , nuts and oil seeds)

- CO1** Describe properties of cereals, pulses, millets and spices.
- CO2** Compare the characteristics of cereals, pulses and millets
- CO3** Prepare various recipes
- CO4** Test germination ratio in different pulses.

Course Code: 19FPU12

Course Name: Allied III - Food Microbiology

- CO1** Estimate the characteristics of important pathogens and spoilage microorganisms in foods.
- CO2** Analyze role and significance of intrinsic and extrinsic factors on growth and response of microorganisms in foods.
- CO3** Identify ways to control microorganisms in foods
- CO4** Describe the beneficial role of microorganisms

Course Code: 19FPU13

Course Name: Allied Practical III - Food Microbiology

- CO1** Estimate the characteristics of important pathogens and spoilage microorganisms in foods.
- CO2** Analyze role and significance of intrinsic and extrinsic factors on growth and response of microorganisms in foods.
- CO3** Identify ways to control microorganisms in foods
- CO4** Describe the beneficial role of microorganisms

SEMESTER IV

Course Code: 19FPU14

**Course Name: Food Processing Technology-III
(Animal Origin)**

- CO1** Describe the structure of various animal foods.
- CO2** Classify different animal foods and its products
- CO3** Discover various milk products
- CO4** Compare various cooking techniques for different meat

Course Code: 19FPU15

Course Name: Food Fermentation Technology

- CO1** Describe about development in fermentation technique
- CO2** Classify different type of fermentation
- CO3** Application of fermentation techniques for food preservation
- CO4** Point out benefits of various fermented products

Course Code: 19FPU16

**Course Name: Practical IV – Processing of Foods
of Animal Origin & Fermentation Technology**

- CO1** Identify various cooking methods with fermentation
- CO2** Discuss on value added products with animal foods
- CO3** Prepare recipes
- CO4** Analyze various quality parameters

Course Code: 19FPU17

Course Name: Allied - IV Nutrition and Dietetics

- CO1** State the importance of how rapid population growth affects nutrition
- CO2** Describe the importance of balance diet
- CO3** Relate basic principles of meal planning
- CO4** Point out the importance of nutrition labeling

Course Code: 19FPU18

Course Name: Allied Practical IV Nutrition and Dietetics

- CO1** Identify various nutrient content in foods
- CO2** Identify different nutritional parameters
- CO3** Prepare healthy snacks
- CO4** Analyse various value added snacks

PROGRAMME NAME: B.Sc. (Mathematics)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Acquire knowledge in functional areas of Mathematics and apply in all the fields of learning.
PEO2	Employ mathematical ideas encompassing logical reasoning, analytical, numerical ability, and theoretical skills to model real-world problems and solve them.
PEO3	Recognize the need for lifelong learning and demonstrate the ability to explore some mathematical content independently.
PEO4	To prepare the students to communicate mathematical ideas effectively and develop their ability to collaborate both intellectually and creatively in diverse contexts.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Students are empowered with analytical and logical skills to formulate results and construct mathematical model.
PO2	PROBLEM SOLVING AND ANALYSING: Utilize mathematics to solve theoretical and applied problems by critical understanding, analysis and synthesis.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Ability to organize, analyze and interpret data accurately in academic and non-academic context.
PO4	MODERN TOOL USAGE: An ability to apply knowledge of Mathematics and Computer Science and acquire required programming skills, formulate and solve practical problems.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: Demonstrate effective communication of mathematical ideas and creative thinking skills to facilitate solving real world problems as a team and independently.
PO6	SELF DIRECTED / LIFE LONG LEARNING: Identify the area of interest for extended learning from the understanding gained from the domain and allied areas of Mathematics.
PO7	ENHANCING RESEARCH CULTURE: Ability to pursue advanced studies and research in pure and applied mathematical science

COURSE OUTCOMES

SEMESTER I

Course Code: 20MAU01

**Course Name: Algebra and
Trigonometry with Geogebra**

- CO1** Determine the convergence or divergence of sequences and series.
- CO2** Understand the roots of higher degree algebraic and transcendental equations
- CO3** Solve the problems related to convergence / divergence of Binomial, Exponential, Logarithmic Series
- CO4** Understand the sum of power series

Course Code: 20MAU02

Course Name: Calculus with SCILAB

- CO1** Define curvature, compute limits of, differentiate, and integrate transcendental functions.
- CO2** Examine various techniques of integration and apply them to definite and improper integrals.
- CO3** Apply special functions like Beta and Gamma to evaluate multiple integrals.
- CO4** Use computational tools like SciLab.

Course Code: 20MAU03

**Course Name: Allied : Mathematical
Statistics– I with Libre Office**

- CO1** Formulate questions that can be addressed with data and collect, organize, and display relevant data to answer them.
- CO2** Effectively use statistical software (e.g. MiniTab, Excel) to perform statistical computations and display numerical and graphical summaries of data sets.
- CO3** Compute and interpret the coefficient of correlation and the "line of best fit" for bivariate data.
- CO4** Explore relationships between categorical variables using contingency table.

Course Code: 20MAU04

**Course Name: Practical I - GEOGEBRA, SCILAB,
Libre Office – I**

- CO1** Learn math tools for graphing, geometry, 3D by using GEOGEBRA.
- CO2** Demonstrate Linear algebra and Trigonometry concepts by mathematical software.
- CO3** Develop programs in SCILAB and Evaluate, Analyze, plot results.
- CO4** Use computational tools of LIBRE OFFICE.

SEMESTER II

Course Code: 20MAU05

**Course Name: Analytical Geometry of 3D
with GEOGEBRA**

- CO1** Identify and classify geometric shapes using correct mathematical language. Draw and label figures based on verbal descriptions.
- CO2** Apply theorems involving vertical angles, complementary angles, supplementary angles, transversals, internal angle measure in triangles, circles and tangent lines to circles.
- CO3** Solve geometrical problems using the software GEOGEBRA.
- CO4** Apply geometric concepts to solve problems.

Course Code: 20MAU06

**Course Name: Multivariate Calculus and
Fourier Series with SCILAB**

- CO1** Understand the concepts of double and Triple integral applications
- CO2** Recognize and use the vocabulary of vectors (vector, scalar, magnitude, direction) to perform arithmetic on vectors and to solve application problems
- CO3** Know and apply identities involving the trigonometric functions
- CO4** Know that any periodic function can be expressed as a Fourier series.

Course Code: 20MAU07

**Course Name: Allied: Mathematical
Statistics-II with Libre Office**

- CO1** Explain and successfully apply all aspects of parametric testing techniques including single and multi-sample tests for mean and proportion.
- CO2** Explain and successfully apply all aspects of appropriate parametric tests.
- CO3** Understand, apply and compute maximum likelihood estimation.
- CO4** Take up a career in statistical analysis.

Course Code: 20MAU08

**Course Name: Practical - II - GEOGEBRA, SCI
LAB and Libre Office - II**

- CO1** Learn math tools for graphing, geometry, 3D by using GEOGEBRA.
- CO2** Good understanding of Linear algebra and Trigonometry concepts by mathematical software.
- CO3** Develop programs in SCILAB and Evaluate, analyze, plot results.
- CO4** Use computational tools of LIBRE OFFICE.

SEMESTER III

Course Code:19MAU09

Course Name: Statics

- CO1** Determine the magnitude and direction of the resultant of the velocities.
- CO2** Learn the concept of moment of the forces which is a vector
- CO3** Study about the resultant of coplanar forces and reduction of coplanar forces
- CO4** Analysis about the equilibrium of a uniform homogeneous string

Course Code:19MAU10

Course Name: Differential Equations and Laplace Transforms

- CO1** Able to Form the differential equations of first order by eliminating the arbitrary Constants
- CO2** To Find the complimentary function and particular integral by using different
- CO3** To solve the simultaneous differential equation and hence finding the solutions to the different mathematical models
- CO4** To enhance the basic and fundamental ideas relating to partial differential equations

Course Code: 19MAU12

Course Name: C Programming

- CO1** Able to understand the basic structure of C program.
- CO2** To understand the fundamentals of C and to write simple programs
- CO3** To solve the simple problems using concept of arrays
- CO4** To enhance the basic understanding of concepts and use C program to solve real time problems.

Course Code: 19MAU13

Course Name: Practical III: C Programming - Lab

- CO1** Read, understand and trace the execution of programs written in C language
- CO2** To understand the fundamentals of C and to write simple programs
- CO3** To solve the simple problems using concept of arrays
- CO4** To write programs that performs operations using derived data types.

SEMESTER IV

Course Code:19MAU14

Course Name: Dynamics

- CO1** Understand and use basic terms for the description of the motion of particles, vector functions and the fundamental laws
- CO2** Learn the mathematical formulations of dynamics problems.
- CO3** Solve problems relating to the motion of a projectile
- CO4** Analysis about the velocity and acceleration

Course Code: 19MAU15

Course Name: Integral Transforms

- CO1** Able to understand Fourier transforms and its elementary properties
- CO2** To understand Hankel Transform and derivatives of function
- CO3** To apply Hankel Transform, Mellin transform in boundary value problems
- CO4** Apply Fourier Transform to solve boundary value problem and Z Transforms

Course Code: 19MAU17

Course Name: Python Programming

- CO1** Understand to Read, write, and execute Basic Python programs.
- CO2** Decompose a Python program into functions, lists etc
- CO3** Read and write data from/to files in Python Programs
- CO4** Underline the use of package

Course Code: 19MAU18

Course Name: Practical IV – Python Programming Lab

- CO1** Write, Test and Debug Python Programs
- CO2** Implement Conditionals and Loops for Python Programs
- CO3** Use functions and represent Permutation of a given string
- CO4** Read and write data from Count the Number of matching characters in a pair of string

PROGRAMME NAME: B.Sc. (Electronics and Communication Systems)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Create graduates with a strong foundation in mathematics and science fundamentals to enable them to devise and deliver efficient solutions to challenging problems in Electronics, Communications and allied disciplines.
PEO2	Teach qualities of teamwork as well as social, interpersonal and leadership skills and an ability to adapt and evolving professional environments in the domains of science and technology.
PEO3	Motivate graduates to become good human beings and responsible citizens for the overall welfare of the society.
PEO4	Communicate effectively and manage resources skillfully as members and leaders of the profession.
PEO5	Be receptive to new technologies and attain professional competence through lifelong learning such as advanced degrees, professional registration, publications and other professional activities.

PROGRAMME OUTCOMES

PO1	Ability to apply knowledge of mathematics, science, and technology fundamentals to solve complex problems in Electronics and Communication systems.
PO2	Ability to analyze Electronics and Communication real-time application problems, interpret data and arrive at meaningful conclusions involving mathematical inferences.
PO3	Ability to design Electronics and Communication systems to meet the desired needs considering public health and safety, and the cultural, societal, and environmental considerations.
PO4	Ability to apply modern tools and techniques and understand the utilization of resources appropriately to complex Electronics and Communication activities.
PO5	Ability to work as a member of a team, to plan and to integrate the knowledge of various engineering disciplines and to lead teams in multidisciplinary settings.
PO6	Ability to adapt to the changes and advancements in technology and engage in independent and life-long learning.
PO7	Ability to develop and manage research cultures by applying electronics and management principles.

COURSE OUTCOMES

SEMESTER I

Course Code: 20ELU01

Course Name: Basic Electronics

- CO1** Identify and understand the various basic electronic components.
- CO2** Determine the passive components and its characteristics.
- CO3** Analyze and get an insight about the basic electronic components, voltage and current sources.
- CO4** Evaluate and demonstrate the basic electronic components applications.

Course Code: 20ELU02

Course Name: Circuit Theory and Network Analysis

- CO1** Understand the knowledge of basic circuit law and simplify the network using reduction techniques.
- CO2** Apply the Kirchhoff's law and Network theorems and simplify the electrical and AC circuits.
- CO3** Obtain the maximum power transfer to the load, and Analyze the series resonant and parallel resonant circuit.
- CO4** Justify the electric circuit's applications by using the network theorems.

Course Code: 20ELU04

Course Name: Practical I: Electronic Circuit Analysis

- CO1** Recognize the concept of basic circuits and theorems.
- CO2** Interpret the circuits using series and parallel equivalents and using Thevenin's and Norton's equivalent circuits.
- CO3** Solve and design various resonance circuit problems.
- CO4** Evaluate and display the measurements of signals by using oscilloscope.

SEMESTER II

Course Code: 20ELU05

Course Name: Semiconductor Devices

- CO1** Demonstrate knowledge on recalling the semiconductor theory concepts.
- CO2** Understand the change in physical and electrical properties of electron devices under the influence of various biasing.
- CO3** Apply the electrical properties of electron devices for achieving various applications.
- CO4** Analyze the change in electrical characteristics due to change in size and shape of the terminals.

Course Code: 20ELU07

Course Name: Practical II Semi Conductor Devices

- CO1** Construct circuits by applying theoretical knowledge gained in electronic devices.
- CO2** Analyze the electrical characteristics of unipolar and bipolar devices with the constructed circuits.
- CO3** Demonstrate the operation of half wave and full wave rectifiers.
- CO4** Create simple applications using electronic devices and evaluate the attained results.

SEMESTER III

Course Code: 19ELU07

Course Name: Principles of Communication System

- CO1** Understand the principles of wave propagation and communication system.
- CO2** Analyze the need of modulation and frequency spectrum of AM & FM.
- CO3** Interpret the working of various analog, pulse and digital modulation techniques.
- CO4** Apply analog and digital modulation scheme for real time knowledge transfer.

Course Code: 19ELU08

Course Name: Digital Electronics and its Applications

- CO1** Understand the basic and principles of Digital Electronics.
- CO2** Analyze the various number systems.
- CO3** Interpret the working of several logic gates and Boolean theorems.
- CO4** Apply the sequential, A/D and D/A principles for real time knowledge transfer.

Course Code: 19ELU09

Course Name: Electronic Circuits

- CO1** Acquire basic knowledge on the working of various amplifiers, oscillators and multivibrator.
- CO2** Develop analysis capability in rectifiers, filters and voltage regulators.
- CO3** Design competence in power and feedback amplifiers.
- CO4** Implementation of various amplifier circuits for practical applications.

Course Code: 19ELU10**Course Name: Programming in C**

- CO1** Create algorithms to solve simple programming problems
- CO2** Analyze programming problems to choose when regular loops should be used and when recursion will produce a better program.
- CO3** Design, implement, test and debug programs that use different data types, such as simple variables, arrays, and structures.
- CO4** Apply the programming skills in real time applications.

Course Code: 19ELU11**Course Name: Practical III: C Programming**

- CO1** Read, understand and trace the execution of programs written in C language.
- CO2** Able to write the C code for a given algorithm.
- CO3** Implement Programs with pointers and arrays, perform pointer arithmetic, and use the pre-processor.
- CO4** Apply the C language program skills and write programs that perform operations using derived data types.

SEMESTER IV**Course Code: 19ELU12****Course Name: Microwave And Fiber Optic Communication**

- CO1** Understand the basic concepts of microwave and electromagnetic theory.
- CO2** Analyze the waveguides, microwave components, instruments and microwave tubes.
- CO3** Identify the working of optical fibers and their properties.
- CO4** Apply microwave and fiber optic concepts for real time applications.

Course Code: 19ELU13**Course Name: Integrated Circuits and Instrumentation**

- CO1** Understand the basic concepts for the circuit configuration for the design of linear Integrated circuits.
- CO2** Analyze and develop skills to design simple circuits using OP-AMP.
- CO3** Recognize the Op-Amp based comparators, waveform generators, VCO and PLL operation and its application
- CO4** Evaluate various applications of special function of transducers and electronic instruments.

Course Code: 19ELU15**Course Name: Practical IV: Electronic Circuits**

- CO1** Understand the theoretical principles essential for understanding the operation of electronic circuits.
- CO2** Analyze and measure the characteristics of electronic circuits and present experimental results.
- CO3** Develop, design and create simple electronic circuits and explain the concepts of feedback and construct feedback amplifiers and oscillators.
- CO4** Apply design competence in signal and power amplifiers using BJT.

Course Code: 19ELU16**Course Name: Practical V: Analog and Digital IC**

- CO1** Understand the principles of analog and digital IC's
- CO2** Identify the various digital ICs and understand their operation.
- CO3** Analyze the function of Boolean expressions, operational amplifiers and multiplexers.
- CO4** Apply Boolean laws and K-map to simplify the digital circuits.

Course Code: 19ELU17A
Systems**Course Name: Practical VI: Communication**

- CO1** Understand the principles of wave propagation and communication system.
- CO2** Analyze the need of modulation and frequency spectrum of PAM, PWM, & PPM.
- CO3** Develop the practical knowledge about theories of analog & digital communication.
- CO4** Apply analog and digital modulation scheme for real time knowledge transfer.

Course Code: 19ELU17B**Course Name: Practical VI: Python Programming**

- CO1** Understand the basics of Object-Oriented Skills in Python.
- CO2** Analyze the concepts of object-oriented programming as used in Python: classes, subclasses, inheritance, and overriding.
- CO3** Interpret the concepts of Object-oriented programming as used in Python using encapsulation, polymorphism and inheritance.
- CO4** Discover the capabilities of Python regular expression for data verification and utilize matrices for building performance efficient Python programs.

PROGRAMME NAME: B.Sc. (Physics)

PROGRAMME EDUCATIONAL OUTCOMES

PEO1	Produce graduates who excel in the competencies and values required for leadership to serve a rapidly evolving global community.
PEO2	Endow the students with creative and analytical skills; this will equip them to become entrepreneurs.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Understand the basic concepts and significance of various physical phenomena.
PO2	PROBLEM SOLVING AND ANALYSING: Apply the knowledge of Physical Science to solve real life problems.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Develop an independent and self-disciplined specialized learning in tune with the changing socio-technological scenario.
PO4	MODERN TOOL USAGE: Develop creative thinking and innovative tools.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: Develop the team work and enhance Communicative skills effectively in order to acquire employment or become entrepreneurs.
PO6	SELF DIRECTED / LIFE LONG LEARNING: Transform ideas into action through self-reliance and lifelong learning experiences.
PO7	ENHANCING RESEARCH CULTURE: Motivate to pursue higher education and research activities in Physics to find professional level employment.

COURSE OUTCOMES

SEMESTER I

Course Code : 20PHU01

Course Title: Properties of Matter and Sound

- | | |
|-----|--------------------------------------------------------------------------------------------------------------|
| CO1 | Recall the fundamental principles of elastic behaviour and working of torsional pendulum. |
| CO2 | Interpret the basic concept of hydrodynamics and viscosity. |
| CO3 | Analyse the surface tension, gravitation, Newton's law of gravitation and Kepler's laws of planetary motion. |
| CO4 | Evaluate the acoustic concepts in sound applications. |

Course Code : 20PHU02

Course Title: Electricity and Magnetism

- CO1** Identify the fundamental principles of Electrostatics.
- CO2** Provide knowledge of AC and DC Circuits.
- CO3** Predict the knowledge of concepts in magnetic properties.
- CO4** Analyse the concepts in chemical effect of electric current.

Course Code : 20PHU04

Course Title: Practical I: General Physics -I

- CO1** Identifying the significance of the experimental approach through actual experimentation.
- CO2** Understand the operation of solid prism and liquid prism spectrometer.
- CO3** Analyse and display the operation of Low Range Voltmeter – potentiometer.
- CO4** Determine rigidity modulus using Torsional Pendulum and rigidity modulus using Torsional Pendulum.

SEMESTER II

Course Code : 20PHU05

Course Title: Heat And Thermodynamics

- CO1** Understand the basic concepts of heat and thermodynamics.
- CO2** Remember the kinetic theory of gases and low temperature physics.
- CO3** Analyse the concepts of thermodynamics and thermal conduction, convection and radiation.
- CO4** Evaluate the various thermal laws in thermal radiation.

Course Code : 20PHU06

Course Title: Energy Physics

- CO1** Identify the basic energy sources.
- CO2** Interpret solar radiation and its measurement technical concepts.
- CO3** Analyse the application of solar energy.
- CO4** Evaluate the basic physics ideas in renewable energy sources, biomass and biogas-oriented applications.

Course Code : 20PHU08

Course Title: Practical II: General Physics -II

- CO1** Identifying the significance of the experimental approach through actual experimentation.
- CO2** Understand the operation of solid prism and liquid prism spectrometer.

- CO3** Analyse and display the operation of Low Range Voltmeter– potentiometer.
- CO4** Determine rigidity modulus using Torsional Pendulum and rigidity modulus using Torsional Pendulum.

SEMESTER III

Course Code : 19PHU08

Course Title: Optics

- CO1** Understand the fundamental principles of optical properties.
- CO2** Provide knowledge of the behaviour of light.
- CO3** To inspire interest for the knowledge of concepts is physical and geometrical optics.
- CO4** Analyse the concepts in light applications.

Course Code : 19PHU09

Course Title: Chemistry -I

- CO1** Remember the chemical bonding structure.
- CO2** Understand and apply the geometric and isomeric properties of molecules.
- CO3** Analyse the laws of photochemistry and principles of electrochemistry.
- CO4** Investigate the decomposition of molecules and order of chemical reactions.

Course Code : 19PHU10

Course Title: Semiconductor Devices

- CO1** Recall the essential fundamentals of atomic structure and semiconductor devices.
- CO2** Understand the principles and functions of semiconductor diodes for switching applications.
- CO3** Analyse the switching and amplification applications of transistor.
- CO4** Demonstrate the control applications using power electronic semiconductor devices.

SEMESTER IV

Course Code : 19PHU11

Course Title: Electricity and Magnetism

- CO1** Identify the fundamental principles of Electrostatics.
- CO2** Provide knowledge of AC and DC Circuits.
- CO3** Predict the knowledge of concepts in magnetic properties.
- CO4** Analyse the concepts in chemical effect of electric current.

Course Code : 19PHU12**Course Title: Chemistry - II**

- CO1** Remember the basic concept related to UV-Visible Spectroscopy and nanoscience.
- CO2** Understand the knowledge in nuclear chemistry.
- CO3** Analyse the structure of solids.
- CO4** Investigate the chromatographic techniques in detail.

Course Code : 19PHU13**Course Title: Digital Electronics**

- CO1** Understand the different type of codes and number systems which are used in digital systems.
- CO2** Compare different types of logic families which are the basic unit of different types of logic gates.
- CO3** Analyse various methods and logical tools and know the techniques to prepare the most simplified circuit using arithmetical circuits.
- CO4** Design different types of with and without memory element digital electronic circuits for particular operation, within the realm of economic.

Course Code : 19PHU14**Course Title: Practical II: Semiconductor Devices and Digital Electronics Lab**

- CO1** Understand the properties and principles of various semiconductor devices.
- CO2** Study the characteristics of semiconductor diodes, various transistors configurations and various digital IC's.
- CO3** Evaluate various combinational circuits using digital ICs.
- CO4** Demonstrate the knowledge by designing sequential circuits.

Course Code : 19PHU15**Course Title: Practical III – Allied Chemistry Practical**

- CO1** Classification of chemicals by different methods.
- CO2** Identification of the presence of elements
- CO3** Distinguish between organic compounds.
- CO4** Examine the functional group tests.

PROGRAMME NAME: B.Sc. (Catering Science and Hotel Management)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	To intensify student`s knowledge and skills with instruction based on international standards.
PEO2	To produce quality graduates with balanced knowledge, skills and industry exposure, develop students to be leaders in hotel and hospitality sectors through industry immersion and national/international linkages

PROGRAMME OUTCOMES

PO1	ENHANCING RESEARCH CULTURE: Motivate to pursue higher education and research activities in Physics to find professional level employment.
PO2	It helps students to perform effectively and efficiently to the standards expected in the operation required in the tourism industry/hospitality sectors and present to them an avenue to move into range of international organizations in service sector.
PO3	It helps students to identify problems, analyse the situations, formulates solutions, implements corrective, action in the management of food service and lodging operations.
PO4	It helps students to perform professional ethics, lead, demonstrate personal and global responsibility and work effectively as a team member with thorough understanding of skills necessary for hospitality operations.
PO5	It develops the ability of students for lifelong learning so as to update them in the Hospitality Industry.
PO6	It helps students to develop competency and Multispecialty experience and in the working methods of different environment to seek employment in any part of the world.
PO7	It helps students to analyse the problems through various angles to arrive an appropriate and practical solutions.

COURSE OUTCOMES

SEMESTER I

Course Code: 20CHU01

Course Name: Fundamentals in Food Production

- CO1** Develop the knowledge on Culinary History and Hygiene in cookery.
- CO2** Evaluate on constructing the Kitchen Layout and Fire Safety.
- CO3** Develop the skills in preparation of Ingredients.
- CO4** Evaluate the Cooking Fuels and Storage.

Course Code: 20CHU02

Course Name: Fundamentals in Food & Beverage Service

- CO1** Analyzing the basic styles of Food service and differentiate catering establishments, Food & Beverage Equipment.
- CO2** Illustrating and summarizing the menu design for food and beverage
- CO3** Determine the size, nature and scope of the food and beverage service industry.
- CO4** Evaluating the professional and career development strategies in the food service industry.

Course Code: 20CHU03A

Course Name: Accommodation Operations

- CO1** Analyzing the importance of Hospitality and Housekeeping
- CO2** Justify the key factors of Laundry in Housekeeping department
- CO3** Analyzing the knowledge on key control operations & bed making process
- CO4** Derive the procedures for cleaning agents and budgeting

Course Code: 20CHU03B

Course Name: Room Division Management

- CO1** Analyzing the key functions of the Rooms Division department
- CO2** Explaining the role of Rooms Division Manager
- CO3** Illustrating the role of Revenue Management and its application
- CO4** Evaluate the skills & value of employee in the Room division Management

Course Code: 20CHU04

Course Name: Practical: I Fundamentals in Food Production

- CO1** Illustrating the knife techniques
- CO2** Developing knowledge on Vegetable & Meat Cuts
- CO3** Evaluating to the preparation of various Dishes by Individual
- CO4** Focus on compiling the menu by own.

Course Code:20CHU05

Course Name: Practical: II - Fundamentals in Food and Beverage Service

- CO1** Developing the knowledge on Food & Beverage Service Industry.
Analyzing and developing the different types of food and beverage service, the requirements for good service and the role of professionalism, appearance, personal development and positive attitude in ensuring service levels.
- CO2** Analyzing and developing the different types of food and beverage service, the requirements for good service and the role of professionalism, appearance, personal development and positive attitude in ensuring service levels.
- CO3** Evaluating the importance of food and beverage service techniques.
- CO4** Focusing the activities involved within food & beverage professionals.

Course Code:20CHU06

Course Name: Practical: III Accommodation Operations

- CO1** Classify the role & functions of the Front office.
- CO2** Build the knowledge and importance of communication & knowledge of guest background.
- CO3** Build the procedures of arrival & departure guest.
- CO4** Focusing on how to deal with the Guest.

SEMESTER II

Course Code: 20CHU07

Course Name: French Culinary Arts

- CO1** Classify the Vegetables and fruits in cookery.
- CO2** Analyzing the foundation materials
- CO3** Evaluate the Skills in preparation of French liquids.
- CO4** Focus on uses of cereals, pulses and Dairy products.

Course Code:20CHU08**Course Name: Professional Food Service Technology**

- CO1** Creating the knowledge on cover laying procedure, Points to be observed while laying a cover, Flow of activities in restaurant, Rules observed while waiting at table.
- CO2** Focusing on fundamentals of sale control system and billing process.
- CO3** Evaluate opening and operational responsibilities in a full service food and beverage operation.
- CO4** Build emerging trends and innovations in F&B industry.

Course Code: 20CHU09**Course Name: Front Office Operation**

- CO1** Explain the structure and duties of front office department in hotels.
- CO2** Focus on Guest complaints and method of solving problems
- CO3** Evaluate the procedure and Reservation & Registration and modern trends in Front office.
- CO4** Evaluate the functions of security services in hotel industry

Course Code: 20CHU10**Course Name: Practical: IV French Culinary Arts**

- CO1** Extend knowledge in Stock & Soup Preparation
- CO2** Illustrate on Sauce & Derivatives.
- CO3** Examine on Menu Set Up
- CO4** Analyze the skills in Dish Preparation By Individual

Course Code: 20CHU11**Course Name: Practical: V Professional Food Service Technology**

- CO1** Discuss the equipment's according to F&B standard.
- CO2** Identify the table laying and other skills used in the training restaurant.
- CO3** List the quality food service in the restaurant.
- CO4** Evaluate the restaurant service techniques relating to station setup, table settings and ordering procedures.

Course Code: 20CHU12**Course Name: Practical: VI Front Office Operation**

- CO1** Discuss the role & functions of the Front office

- CO2** Illustrate the importance of communication & knowledge of guest form
- CO3** Developing knowledge on procedures of arrival & departure guest
- CO4** Analysing how to deal with the departure of guest

SEMESTER III

Course Code:19CHU13

Course Name: Food Production & Patisserie - III

- CO1** Impart knowledge of Culinary History in Heritage Indian Cuisine
- CO2** Identify the Origins of Cuisine.
- CO3** Analyze skills in preparation of cooking techniques.
- CO4** Identify the skills habits of ancient food.

Course Code:19CHU14

Course Name: Food & Beverage Service - III

- CO1** Distinguish between alcoholic and non alcoholic beverages.
- CO2** Develop the knowledge on the origins and production of wines.
- CO3** Define the steps involved in producing spirits and Liqueurs.
- CO4** Identify and describe about tobacco and its products.

Course Code:19CHU16

Course Name: Bakery & Confectionery - I

- CO1** Identify and explain the baking terms.
- CO2** Identify various cake making methods.
- CO3** The various icing techniques.
- CO4** Able to define the various types of icing.

Course Code:19CHU17
& Patisserie - III

Course Name: Practical: Food Production

- CO1** Impart knowledge on Heritage Indian Cuisine
- CO2** Identify of various heritage ingredients
- CO3** Analyze skills in preparation of dishes
- CO4** Identify Cooking habits of ancient food.

Course Code:19CHU18

Course Name: Practical: Food & Beverage Service - III

- CO1** To apply the knowledge of food and wine service.
- CO2** To demonstrate in-depth understanding of wine knowledge
- CO3** To Display an understanding of pairing food & wine.
- CO4** To demonstrate an ability to prepare a wine list

Course Code:19CHU19

Course Name: Practical – Bakery & Confectionery - I

- CO1** Identify The Bakery Equipments.
- CO2** Able To Find The Various Bread Preparation.
- CO3** Gain Knowledge On Yeast Based Product.
- CO4** To find out the various baking skills.

SEMESTER IV

Course Code:19CHU21

Course Name: Food Production & Patisserie - IV

- CO1** Impart knowledge on Chinese and Sri Lankan Cuisine
- CO2** Traditional practice in Japanese and Thai Cuisine.
- CO3** Analyze skills in preparation of French Cuisine & Russian Cuisine.
- CO4** Identify in both Spanish and American Cuisine.

CourseCode:19CHU22

Course Name: Food & Beverage Service - IV

- CO1** Demonstrate knowledge of the service areas associated with function catering.
- CO2** Demonstrate familiarity with the service areas associated with guérison service.
- CO3** Contribute and assist in the development of teamwork within the establishment.
- CO4** Determine the requirements need to be met in order to comply with function catering.

Course Code:19CHU23

Course Name: Bakery and Confectionery - II

- CO1** Identify and explain the baking terms.
- CO2** Binding the ingredients to form a output.
- CO3** Various equipments and tools used in bakery.
- CO4** To find out the various baking skills.

Course Code: 19CHU24**Course Name: Tourism Management**

- CO1** Identify the diverse nature of tourism, including culture place, design and provision.
- CO2** Identify and assess relationships and networks relative to building tourism capacity.
- CO3** Plan, lead, organize and control resources for effective and efficient tourism operations.
- CO4** Develop and evaluate tourism policy and planning initiatives.

Course Code:19CHU25**Course Name: Front Office Operations**

- CO1** Understanding the structure and duties of front office department in hotels.
- CO2** Identify the roles & responsibilities of Front office staff.
- CO3** Describe the procedures for registration & reservation of the guest.
- CO4** Describe the security services in hotel industry.

Course Code: 19CHU26**Course Name: Practical: Food Production & Patisserie - IV**

- CO1** Impart Knowledge On Various Countries.
- CO2** Traditional Practice In Preparing Various Dishes.
- CO3** Analyzing The menu's In International Cuisine
- CO4** Identify the Ingredients Used In International Cuisine

Course Code:19CHU27**Course Name: Practical: Food & Beverage Service - IV**

- CO1** To describe the skills required to provide food service in a competency standards.
- CO2** To demonstrate the effective usage of guerid on equipment during food service.
- CO3** To describe the procedures involved in the provision of guerid on service.
- CO4** To demonstrate the role of gueridon trolley in the potential sales of organisation.

Course Code:19CHU28

Course Name: Practical: Bakery and Confectionery - II

- CO1** Knowledge On Various Cookies preparation
- CO2** To know the various sponge preparation
- CO3** Practical Skills On Cake Preparation
- CO4** Preparation Of Various Icing Techniques

Course Code:19CHU29

Course Name: Practical: Front Office Operations

- CO1** Understand the role & functions of the Front office
- CO2** Understand the importance of communication & knowledge of guest background
- CO3** Know the procedures of arrival & departure guest
- CO4** Know how to deal with the departure of guest

PROGRAMME NAME: B.Sc. (Costume Design and Fashion)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	To educate and develop skills on Apparel Designing and develop skills on Apparel Designing.
PEO2	To train students as Professionals for the Textile & Fashion Industry.

PROGRAMME OUTCOMES

PO1	Enables the students to gain Knowledge on basics of Textiles and Apparel Designing and Production and creation of Apparels.
PO2	Enable the student to Design, Draft and construct children, women and men' garments and develop Fashion portfolios.
PO3	Enable the student to Design Apparels for various needs of the Textile & Fashion Industry
PO4	Student will Develops the skill of Illustrating and Designing Apparel, Accessories and other Textile.
PO5	Enables students to become Entrepreneurs in the Textile & Fashion Industry
PO6	Enables students to Produce and market Apparels for local market
PO7	Enables students to be employed in apparel export houses.

COURSE OUTCOMES

SEMESTER I

Course Code: 20CDU01

Course Name: Fashion Concepts

- | | |
|------------|---------------------------------------------------------------------------------------------|
| CO1 | Explain the terms related to fashion industry |
| CO2 | Applies knowledge on planning wardrobes and design dress for different occasions and events |
| CO3 | Analyze dress for Unusual figures |
| CO4 | Infer knowledge on the world Fashion centres & Designers |

Course Code: 20CDU02**Course Name: Fabric Science - I**

- CO1** Describe the qualities of textile fibres
- CO2** Classifies and differentiate different types of fibres
- CO3** Explain the process of fabric formation
- CO4** Analyse the methods of producing Textiles

Course Code: 20CDU03**Course Name: Practical – I – Fashion Concepts**

- CO1** Collect the elements and principles of art.
- CO2** Illustrate garment designs based on elements of design
- CO3** Develop garment designs based on principles of design
- CO4** Differentiate garments for figure irregularities.

Course Code: 20CDU04**Course Name: Practical II- Fabric Science-I**

- CO1** Explain about the technique to identify textile fibres.
- CO2** Demonstrates functioning of machines used for testing textiles
- CO3** Apply to tests the yarn and fabric using the testing machines.
- CO4** Analyses and identifies different types of Yarns and Fabrics properties

Course Code: 20CDU05**Course Name: Practical III: Fashion Illustration**

- CO1** Explain the techniques to enhance visual communication.
- CO2** Illustrate Fashion figures
- CO3** Develop various fashion designs of garments
- CO4** Discover and illustrate the various techniques in fashion illustration

SEMESTER II**Course Code: 20CDU06****Course Name: Fabric Science - II**

- CO1** Explain the elements of various woven designs and nonwovens.
- CO2** Analyse different types of weaves.
- CO3** Analyse and draws the design, draft and develop peg plan for different types of weaves.
- CO4** Illustrate different types of weaves in a fabric.

Course Code: 20CDU07**Course Name: Practical – IV - Fabric Science - II**

- CO1** Explain the elements of various woven designs and nonwovens.
- CO2** Classify different types of weaves.
- CO3** Analyze and draws the design, draft and develop peg plan for different types of weaves.
- CO4** Compare different types of weaves in a fabric.

Course Code: 20CDU08**Course Name: Practical V - Basics of Apparel Technology**

- CO1** Explain the techniques used in Garment formation
- CO2** Classifies and differentiate different techniques in construction
- CO3** Identifies the suitable techniques for constructing garments.
- CO4** Applies various construction techniques for designing garments

Course Code: 20CDU09**Course Name: Practical VI – Developments of Apparel Components**

- CO1** Collect the various aspects of constructing garment.
- CO2** Demonstrate and illustrate the skill of designing various parts of the garments.
- CO3** Apply the skill of constructing various components of the garment.
- CO4** Illustrate garments for various age groups.

SEMESTER III**Course Code: 19CDU11****Course Name: Machineries For Apparel Industries**

- CO1** Students would have gathered knowledge about different types of sewing machineries and its applications.
- CO2** They would have Gained knowledge about the various activities involved in garment industry and equipment used.
- CO3** Students will gain knowledge on the industrial machines and its applications
- CO4** Students will be able to handle the production of the industrial machines used for apparel construction

Course Code: 19CDU12**Course Name: Apparel Pattern Making**

- CO1** Students would have gained knowledge on body measurements and patternmaking and grading techniques
- CO2** They would have acquired knowledge on creation of styles, fitting techniques and pattern alteration
- CO3** Students will be able to analyse fitting problems in a garment
- CO4** Students will be able to solve fitting problems in a garment

Course Code: 19CDU13**Course Name: Practical - VII Advanced Surface Embellishment**

- CO1** Students will be able to list types of embroideries.
- CO2** Students will be able to develop different hand embroidery and machine embroidery designs.
- CO3** Students will be able to differentiate on different types of traditional embroidery.
- CO4** Students will be able to apply smocking on garments.

Course Code: 19CDU14**Course Name: Practical VIII – Apparel Pattern Making**

- CO1** Students would have gained knowledge on body measurements and patternmaking and grading techniques
- CO2** They would have acquired knowledge on creation of styles, fitting techniques and pattern alteration
- CO3** Students will be able to analyse fitting problems in a garment
- CO4** Students will be able to solve fitting problems in a garment

Course Code: 19CDU15**Course Name: Practical IX: Fashion Illustration**

- CO1** To illustrate the techniques to enhance visual communication.
- CO2** Students will be able to Demonstrate their imagination and creativity in designing.
- CO3** Students will be able to express the garment through illustration.
- CO4** Student will be able to illustrate the customers design with details.

Course Code: 19CDU16

Course Name: Practical X – Apparel Construction –I

- CO1** Students would have learned the techniques of designing and constructing various styles garments for children
- CO2** They would have acquired knowledge on creation of styles, fitting techniques and pattern alteration
- CO3** Students would have learned to construct various style garments for children
- CO4** Students will be able to construct garments for the requirement of the customer

SEMESTER IV

Course Code: 19CDU17

Course Name : Textile Wet Processing

- CO1** Students will be able to classify different processing methods
- CO2** Students will be able to describe the processing methods
- CO3** Students will be able to evaluate the processed fabrics
- CO4** Students will be able to choose the proper processing methods

Course Code: 19CDU18

Course Name : Apparel Quality Control & Standards

- CO1** Students will be able to define and establish quality standards
- CO2** Students will be able to describe functions of quality control
- CO3** Students will be able to analyse on garment cost and cost control.
- CO4** Students will be able to appraise on different quality management systems.

Course Code: 19CDU19

Course Name : Practical XI- Garment Draping – I

- CO1** Students will be able to drape yokes
- CO2** Students will be able to drape collars
- CO3** Students will be able to drape sleeve
- CO4** Students will be able to drape bodice patterns on dress form

Course Code: 19CDU20

Course Name : Practical XII- Textile Wet Processing

- CO1** Students will be able to classify different processing methods
- CO2** Students will be able to describe the processing methods

- CO3** Students will be able to evaluate the processed fabrics
- CO4** Students will be able to choose the proper processing methods

Course Code: 19CDU21

Course Name : Practical XIII – Apparel Construction – II

- CO1** Students will learn how to draft
- CO2** Students will learn the construction procedures of various garments
- CO3** Students will learn the pattern alteration techniques
- CO4** Students will have the knowledge of applying in various garment industries

Course Code: 19CDU22

Course Name : Industrial Training – Viva Voce

- CO1** Students will have knowledge on various types of fashion industries
- CO2** Students will know the details of running and apparel industry
- CO3** Students will know about apparel, processing and marketing industry
- CO4** Students would have gained knowledge on the apparel export and will be employable in the same.

PROGRAMME NAME: B.Sc. (Visual Communication)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	To mould the students to cater the needs of the entry level communication job markets.
PEO2	To prepare the students and tune them with newer societal aspirations in order to meet out the standards of excellence.

PROGRAMME OUTCOMES

PO1	Provides adequate knowledge to students in the changing trends of media communication.
PO2	Helps students to develop analytical thinking, logical thinking and creativity
PO3	Helps students to have profound knowledge based on societal concerns and responsibilities.
PO4	Provide opportunities to students for getting transformed and enriched with contemporary media inputs.
PO5	Enable students to equip themselves to meet out the requirements of the media industry.
PO6	Enable students to become familiar towards functioning as media expert.
PO7	Develop students in the exploratory competency to enhance the ethical values of visual communication.

COURSE OUTCOMES

SEMESTER I

Course Code: 20VCU01

Course Name: Introduction to
Visual Communication

- | | |
|-----|----------------------------------------------------------------------------------|
| CO1 | Understand the difference between various types of communication. |
| CO2 | Exposed to the basic elements and functions of visual communication. |
| CO3 | Knowledge on communication theories and models will be shared with the students. |
| CO4 | Exposed to the contemporary concepts of media. |

Course Code: 20VCU02**Course Name: History of Art and Design**

- CO1** Understand different periods and styles of art and design.
- CO2** Apply the forms of semiotics in their production.
- CO3** Utilizing the art into designing field.
- CO4** The subject knowledge will help to create various art and commercial productions in media.

Course Code: 20VCU03**Course Name: Fundamentals of Digital Photography**

- CO1** Understand the basics of Photography to identify their specialization.
- CO2** Can understand the perspective of digital imaging.
- CO3** Knowledge on lighting and camera techniques.
- CO4** Skills to reproduce images from various field of photography

Course Code: 21VCU04**Course Name: Practical I -Visual Arts - I**

- CO1** Develop the skills on sketching and color application.
- CO2** Improvised skills of using mixed media for visual production.
- CO3** Visual arts will help the students to enhance their talents in graphic communication.
- CO4** Portrayal of life studies will help to convey visual representation.

SEMESTER II**Course Code: 20VCU05****Course Name: Visual Design and Culture**

- CO1** Understand both the divergent and convergent thinking.
- CO2** Technological and social aspects of visuals are represented effectively.
- CO3** Apply the aspects of design and its principles on their project.
- CO4** The ability of creative thinking will help them to create visuals according to the need of the media industry.

Course Code: 20VCU06**Course Name: Practical-II: Photography I**

- CO1** Convert the techniques into the aesthetical perspective.
- CO2** To handle the camera and lighting in various ambience.
- CO3** To develop skills in digital image making.
- CO4** Students will realize the social values and responsibilities through photo documentaries.

Course Code: 20VCU07**Course Name: Practical-III: Visual Arts -II**

- CO1** Student will understand different types of mediums in drawing.
- CO2** Develop deep knowledge in different medium such as pen drawing, Pencil, Water color, Pastels and Acrylic.
- CO3** Through the perfection of drawing skills, the students can produce illustrations for commercial and communication design.
- CO4** Effectively use the skillsets to meet out the industrial requirements.

Course Code: 20VCU08**Course Name: Mini Project: Living with people**

- CO1** Opportunity to experience the contemporary structure and life style of a society.
- CO2** Students would undergo rigorous sketching process of their experiences.
- CO3** To trigger the attitude on research and documentation.
- CO4** Helps the students to connect and represent the societal needs and issues.

SEMESTER III**Course Code: 19VCU10****Course Name: Theories of Communication**

- CO1** To introduce the types of theories in communication.
- CO2** To apply the theories on the selected field.
- CO3** To understand about media and audience.
- CO4** To think about the medium and its global perspective.

Course Code: 19VCU11**Course Name: Introduction to Graphics and Animation Software**

- CO1** To explore the functions of major tools.
- CO2** To learn the usage of different kinds of soft wears in visual media.
- CO3** To introduce the basics of animation to understand multimedia applications.
- CO4** To understand the nature and the aspects of the soft wear to apply in different medium.

Course Code: 19VCU12**Course Name: Practical-IV: Story Board Techniques**

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

Course Code: 19VCU13**Course Name: Practical-V: Graphics and Interaction Design**

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

Course Code: 19VCMU13**Course Name: Blender I**

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities in animation field

SEMESTER IV

Course Code: 19VCU14

Course Name: Media Ethics

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

Course Code: 19VCU15

Course Name: Dynamics of Sound

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

Course Code: 19VCU16

**Course Name: Practical-VI: Advanced
Photography**

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

Course Code: 19VCU17

**Course Name: Allied : Introduction to Social
Psychology (Vis)**

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

Course Code: 19VCU18

Course Name: Practical-VII: Sound Design(Vis)

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

Course Code: 19VCU19

Course Name: Industrial Training

- CO1** To participate the process of industrialization for the understanding of the theoretical aspects to practical.
- CO2** Practical exposure on the selected field.
- CO3** To study the organizational structure and understanding of its functions.
- CO4** To find job opportunities and social contacts.

PROGRAMME NAME: B.Sc. (Animation & Visual Effects)

PROGRAMME EDUCATIONAL OBJECTIVES

PE01	To mold the students to cater the needs of the entry level Animation Industry.
PEO2	To prepare the students and tune them with latest technological aspirations in order to meet out the standards of excellence.

PROGRAMME OUTCOMES

PO1	Comprised with adequate knowledge in various branches of the discipline.
PO2	Moulded with an aptitude of analytical thinking, logical thinking and creativity.
PO3	Well prepared with profound knowledge based on societal concerns and responsibilities.
PO4	Transformed and enriched with contemporary animation production.
PO5	Equipped to meet out the requirements of the animation industry.
PO6	Enable Animator to function commendably.
PO7	Exploratory competency to enhance the ethical values of Animation.

COURSE OUTCOMES

SEMESTER I

Course Code: 20AXU01

Course Name: Art and Colour Theory

- CO1 Helps to apply the elements of art in animation design
- CO2 Able to apply the principles of art in animation design
- CO3 Apply the colour theory in animation production
- CO4 Use the different medium animation art.

Course Code: 20AXU02

Course: Practical – I Space Form and Structure

- CO1 Able to learn the Form and Space.
- CO2 Knowledge for applying the Form and Space in their production.
- CO3 Will Understand and apply the gestalt principles in their production
- CO4 Analyze the appropriate meaning for the background and foreground.

Course Code: 20AXU03

Course Name: Practical – I Animation Design

- CO1** Understand the process of animation
- CO2** Applying the concept of various traditional techniques of animation
- CO3** Learn about the new technology in animation production
- CO4** While creating the animation the learner will be able to apply the techniques of animation.

Course Code: 20AXU04

Course Name: Animation Art and Drawing

- CO1** Produce animation art in the Field Character.
- CO2** Able to produce animation art using different tools and materials
- CO3** Understand the concept to apply the different techniques in animation art production.
- CO4** Applying the real life situation in to animation art production.

SEMESTER II

Course Code: 20AXU05

Course Name: Animation Theory

- CO1** The learner will be familiar with the animation theories
- CO2** Will be able to apply the production techniques of animation.
- CO3** The Usage of sound design in their animation production.
- CO4** The learner will be able to think concepts based on animation.

Course Code: 20AXU06

Course Name: Cartooning and Comic Illustration

- CO1** Will be able to create different types of cartoons.
- CO2** Will be able to create different types of comic illustrations.
- CO3** Applying the techniques of traditional verses retro
- CO4** Helps to create their own comic books.

Course Code: 20AXU07**Course Name: Digital Art**

- CO1** Students will be competent to produce any kind of digital painting using software.
- CO2** Students will be able to create digital painting and sketching concepts.
- CO3** Students will be able to produce any design for animation film
- CO4** Students will apply the digital art techniques in their production.

Course Code: 20AXMU07**Course Name: Photoshop & Illustrator**

- CO1** Ability to create poster designs.
- CO2** Creating matte painting for their production.
- CO3** Apply the Knowledge of 2D characters for animation.
- CO4** Apply Typography in their production.

SEMESTER III**Course Code: 19AXU08****Course Name: Visual Story Telling**

- CO1** Student will be able to create stories for live action and animation movies.
- CO2** Student will be able to understand the concept of shots, scene, screenplay and Dialogues.
- CO3** Students will be able understand Framing in camera, composition and durations of shot.
- CO4** Students will be able to do Editing with techniques and aesthetics, shot Continuity and types of editing. Understanding the Dialogues, BG score and Foley Sound and its Perspective.

Course Code: 19AXU09**Course Name: Practical V - Sound Design**

- CO1** Students will be able to understand the acoustics, studio setup and equipment.
- CO2** Students will able to learn the recording process with effects and techniques.
- CO3** Students will able to create an audio track, voice dubbing for a video file.
- CO4** Students will able to record an audio track for an animation clip.

Course Code: 19AXU10**Course Name: 2D Animation Traditional**

- CO1** Student will be able to understand the entire concept of Production plan, pre and post production.
- CO2** Students will be able to create ideas for story, Story board, Animatic and recording the dialogues and music.
- CO3** Student will be able to create BG and props, character designing and colouring and Staging for Animation.
- CO4** Student will be able to Animate the characters and sound design work in post-production.

Course Code: 19AXU11**Course Name: Character Design Creation**

- CO1** Students will be able to recognize a concept idea or design for a character in a story.
- CO2** Students will be able to apply and create the all styles of CH poses effectively in Animation Studio.
- CO3** Students will be able to understand the working with reference and CH aesthetics in the Studio.
- CO4** Students will be able to explore and compile all types of style in creating a Character design in Production area

Course Code: 19AXMU11**Course Name: After Effects & Audition**

- CO1** Students will be able to learn the interface keys and techniques of the software.
- CO2** Students will be able to produce VFX sequence like compositing, title animation, tracking using After Effects software
- CO3** Students will be able to learn recording and mixing the audio.
- CO4** Students can able to produce audio effects for their production.

Course Code: 19AXU12**Course Name: Computers for Animation**

- CO1** Students will be able to understand the basic of computers required for animation field.
- CO2** Students will be able to understand the Hardware components of computer used for animation work.
- CO3** Students will able to learn the software in 2D, 3D and VFX and OS platforms and utilities.
- CO4** Students will be able to Build their own Hi-end PC for Animation &Vfx and installing software for animation works.

SEMESTER IV

Course Code: 19AXU13

Course Name: Basic Photography and Lighting Techniques

- CO1** Students will be able to understand the lighting concepts in Photography.
- CO2** Students will be able to understand the all kind of lens from macro to telephoto.
- CO3** Students will be able to understand steps and process involved in film cameras and digital cameras.
- CO4** Students will be able to learn techniques, methods and understanding what is necessary for advanced photography in future.

Course Code: 19AXU14

Course Name: 3D Modelling

- CO1** Students will be able to create any kind of Organic or inorganic models.
- CO2** Students will be able to understand the 3D software interface, keys and how to use accordingly.
- CO3** Students will be able to create any types of Models in all styles and methods.
- CO4** Students will be able to understand basic of rendering. A turn table or a static pose for presentation.

Course Code: 19AXU15

Course Name: Visual Effects I

- CO1** Students will be able to create any kind of Organic or inorganic models.
- CO2** Students will be able to understand the 3D software interface, keys and how to use accordingly.
- CO3** Students will be able to create any types of Models in all styles and methods.
- CO4** Students will be able to understand basic of rendering. A turn table or a static pose for presentation.

Course Code: 19AXMU15

Course Name: NUKE & SILHOUETTE

- CO1** Students will be able to understand Radioscopy sequence for films.
- CO2** Students will be able to learn the interface keys and techniques of the software.
- CO3** Students will be able to produce VFX sequence like compositing, paint or tracking using NUKE software
- CO4** Students will be able to understand the concept of colour correction and implementation of key frames

- CO1** Students will be able to produce a fully finished organic or inorganic models using artistic skills by painting digitally using software.
- CO2** Students will be able to do texturing by learning UV axis, UV unwrapping, exporting UVs and later using shaders accordingly.
- CO3** Students will be able to create accurate look for their characters by texturing.
- CO4** Students will be able to understand lights, its types, techniques and principals to produce real life looks or abstract or doll effect looks etc for the given organic or inorganic models.

PROGRAMME NAME: M.A. (English)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	The P.G and Research Department of English has introduced a variety of genres from various Literatures to meet the needs of the academic and corporate scenario
PEO2	The curriculum has been designed to have relevance on a global level. The English Language has completely changed over the centuries from being just a language of a few to becoming a global language
PEO3	The curriculum includes literature from the early ages, exposes the Romantic age, Victorian age and even trains students for careers in journalism. Equally important is the Exposure to women's studies and English language teaching which gives all round development to the student.

PROGRAMME OUTCOMES

PO1	Helps students to develop their knowledge in Language and Literature.
PO2	Apply their critical thinking in creating new knowledge leading to innovation, entrepreneurship and employability.
PO3	Enhance their ethical values, communicative skills and employability skills.
PO4	Inculcate skills to innovate and integrate the contemporary issues and motivate further learning.
PO5	Apply advanced knowledge to Cultivate language skills through a wide variety of literary works.

COURSE OUTCOMES

SEMESTER I

Course Code: 20ENP01

Course Name: British Literature - An Introduction

CO1	Evaluate various writers as representatives of their periods
CO2	Comprehend and analyse the literary texts and become familiar with the culture, genre and place in literary history from whence they
CO3	Examine literary language and literary artefacts as true of various forms of literature such as poetry, drama, prose, and Criticism.
CO4	Analyze the British literary texts of various periods by assimilating theoretical knowledge and fundamentals of British literature.

Course Code: 20ENP02**Course Name: American Literature**

- CO1** Recognize the diversity of individuals in poetry and examine the thoughts, beliefs, customs, struggles and visions of American poets
- CO2** Comprehend and examine the concepts and standards underlying in American literature.
- CO3** Analyse the culture and history of America.
- CO4** Assess the literary output of various periods by assimilating theoretical knowledge and fundamentals of American literature

Course Code: 20ENP03**Course Name: Shakespeare**

- CO1** Remember and analyze the iconic author's works, storylines, characters, historical background and narrative techniques.
- CO2** Analyze and criticize the Elizabethan view on Man, History, Nature and Supernatural elements through the prescribed play
- CO3** Evaluate Shakespeare's skill of characterization, plot construction use of humour and wit, song and music
- CO4** Justify Shakespearean language and use of images in his comedies.

Course Code: 20ENP04**Course Name: New Literature in English**

- CO1** Examine the various issues discussed by different writers with local and global social conditions
- CO2** Analyse the comprehensive knowledge about the literary and cultural traditions of Commonwealth countries
- CO3** Appreciate the relevance and appeal of common wealth writings by enhancing, expanding and strengthening it
- CO4** Survey the trials, tribulations and triumph of the post-colonial era and evaluate the works of the different writers and their thematic effects

Course Code: 20ENP05**Course Name: Indian Writing in English**

- CO1** Identify and assess the Indianness which is shown by all the poets and yet how they remain distinctive in drafting and crafting poetry
- CO2** Apply the aesthetic and utilitarian handling of Poetry & Prose in the hands of Indian writers.
- CO3** Estimate the writings of Playwrights of India and their ideals and the impact of Indian Plays in English.
- CO4** Analyse the works of the Indian novelists and their effects

SEMESTER II

Course Code: 20ENP06

Course Name: Romantic Age

- CO1** Analyse the characteristic perspectives expressed in literary Romanticism
- CO2** Understand and analyse the prose in Romantic period
- CO3** Analyse literary interpretations in focused, coherent writing and appraise the aesthetic elements and imagination in the prescribed novels.
- CO4** Examine and appreciate the critics and criticism in Romantic period

Course Code: 20ENP07

Course Name: American Literary Tradition

- CO1** Appreciate the writing styles, themes, and importance of major works by American authors.
- CO2** Understand and analyse the historical and cultural environments of major American authors and their works.
- CO3** Examine the social concepts and political forces shaping American culture and influencing literature of the period.
- CO4** Analyze critically and write about American literature and authors

Course Code: 20ENP08

Course Name: World Literature-Drama

- CO1** Recognize and appreciate the various techniques, nuances and improvisations adapted and used by Greatest dramatists of the world.
- CO2** Understand and examine the historical contexts, psycho-social, rhetorical aspects to represent ideas critically, creatively and persuasively and discern the various cultural and moral values associated with the texts.
- CO3** Analyze the structure of a full length play and one act play, the dramatic devices and the effect it creates in the audience
- CO4** Examine the knowledge, of literary texts in English by nurturing their ability to understand drama.

Course Code: 20ENP09**Course Name: The World of Fiction**

- CO1** Analyse the literary, cultural, historical and political influences of world writers of fiction
- CO2** Understand and examine the impact of indigenous issues/concerns on fictional representation.
- CO3** Analyse the world fiction, with all its individual fragments, represents collective humanity
- CO4** Examine the spatial significance, in addition to temporal one, of fictional evolution.

Course Code: 20ENP10**Course Name: Indian Literature in English**

- CO1** Recognize and identify the themes and settings of various poetical works.
- CO2** Understand and examine the literary, cultural, historical and political influences of Indian writing.
- CO3** Apply and analyse the different types of narrative techniques in drama and novel
- CO4** Analyse the themes, characters in various works of Indian fiction.

SEMESTER III**Course Code: 19ENP11****Course Name: Subaltern Literature**

- CO1** State the meaning, nature and growth of the Subaltern History.
- CO2** Understand the impact of colonialism on the subaltern people and the impact created by the writers like Gayatri Chakravorty Spivak, Bama, P. Sivagami I.A.S, Mahasweta Devi and Maya Angelou etc.,
- CO3** Apply knowledge on subaltern literature and ideologies.
- CO4** Analyze the process of constructing one's identity and public persona according to a set of socially acceptable.

Course Code: 19ENP12**Course Name: English Literature for Competitive Examinations**

- CO1** Define the literary terms of the English language.
- CO2** Understand the literary texts and familiarity with the culture, genre and place in literary history from whence they come.

- CO3** Apply the knowledge of the terms used by iconic authors in their works and historical background of the terms
- CO4** Analyze literary terms, techniques, nuances used by writers and thinkers at various periods by assimilating theoretical knowledge and fundamentals of literature.

Course Code: 19ENP13

Course Name: Intensive study of Indian Authors

- CO1** Relate the emphasis on the issues such as the representation of culture, identity, history, national and gender politics, etc
- CO2** Understand the relationship between Indian Writing in English and its social context.
- CO3** Critically interpret the Indian texts.
- CO4** Analyse critically and respond to Indian texts

Course Code: 19ENP14

Course Name: Research Methodology

- CO1** Identify appropriate research topics, select and define appropriate research problem and parameters.
- CO2** Understand some basic concepts of research and its methodologies.
- CO3** Demonstrate how educational research contributes to the objectives of your doctoral program and to your specific career aspirations
- CO4** Compare and contrast quantitative and qualitative research paradigms, and explain the use of each in research

Course Code: 19ENP15A

Course Name: English for Academic purpose

- CO1** Identify written and spoken language patterns including sequential events, cause and effect, compare and contrast, and problem solution narratives.
- CO2** Explain the appropriate accuracy and fluency using basic and moderately complex sentence structures
- CO3** Demonstrate working knowledge of appropriate reading and pre reading strategies; including scanning, annotating, predicting outcomes, making inferences, and identifying stated or implied main ideas and supporting details
- CO4** Analyze academic listening strategies including prediction, identification of main ideas.

Course Code: 19ENP15B**Course Name: Translation Skills**

- CO1** Recognize translation difficulties and find alternatives for dealing with them
- CO2** Describe and explain the nature of translation difficulties both informally in discussion and formally in writing.
- CO3** Compare and contrast the differences of style and convention in written forms between English and other languages in a variety of genres.
- CO4** Evaluate the aspects of translation theory and terminology relevant to practical translation.

SEMESTER IV**Course Code: 19ENP16****Course Name: European Classics**

- CO1** To recognize the styles of authors in the major genres of poetry and drama
- CO2** To understand the classics in a historical context and to apply in target language
- CO3** To demonstrate the emerging trends in the field of classic poetry and European languages
- CO4** To Analyze theoretical perspectives on European fiction and modernism

Course Code: 19ENP17**Course Name: Linguistics**

- CO1** Have a fundamental outline of the basic nature, branches and history of linguistic inquiry
- CO2** Understand the mechanism and history of linguistics as a science.
- CO3** Distinguish, evaluate and interpret the methodologies and their results in the context of the overall aim of understanding the nature of language.
- CO4** Analyse the contribution of various linguist towards the growth of language.

Course Code: 19ENP18A**Course Name: Mastering English Literature**

- CO1** Identify distinct literary characteristics of the novel.
- CO2** To Understand the cultural diversity through different representative samples of fiction. Experiencing Plot, Character, and Setting and Atmosphere
- CO3** Apply analytically about novels using MLA guidelines
- CO4** Analyse novels for their structure and meaning, using correct terminology.

Course Code: 19ENP19A**Course Name: Comparative Literature**

- CO1** Ability to identify generic or formal structures, philosophical investments, stylistic texture, rhetorical gestures, and the features of literary periods
- CO2** Develop a comparative understanding of national literatures in the context of a globalizing world, and an ability to situate texts in their cultural and historical contexts.
- CO3** Demonstrate knowledge of historical, linguistic, and cultural contexts of texts as they are produced and received across national boundaries.
- CO4** Construct interpretive arguments orally and in writing with increasing confidence and complexity over the course of the major

Course Code: 19ENP19B**Course Name: Journalism**

- CO1** Apply the knowledge of the history of Journalism in India.
- CO2** Understand the nuances of Journalism with the written texts and the techniques reporting and editing.
- CO3** Understand the knowledge of Editing and Reporting and its purposes and usage of ICT in it.
- CO4** Analyze the role of Media in Journalism, Print and TV medium and the ethics followed.

PROGRAMME NAME: M.Com. (Computer Applications)

PROGRAMME EDUCATIONAL OBJECTIVES

- PEO1** Graduates will possess knowledge and skills in Commerce, Accountancy and Computer Applications disciplines
- PEO2** Graduates will equip themselves for continuation of their education and get practical knowledge in application aspects

PROGRAMME OUTCOMES

- PO1** The programme enables the learners to get theoretical and practical exposure in Accounting, Taxation and computer applications.
- PO2** It ensures that the students develop communicative skills and build confidence to meet the Global challenges.
- PO3** It enables the learners to develop their capabilities for decision making at potential level.
- PO4** It Develops the students to earn advanced managerial and financial skills to occupy the professional positions.
- PO5** The learners can upgrade and develop knowledge in the field of commerce with computer applications.

COURSE OUTCOMES

SEMESTER I

Course Code: 20CCP01

Course Name: Managerial Economics

- CO1** Remembering students with the knowledge of various economic concepts. Used in business and understand about demand and its determinants.
- CO2** Understanding the concept of cost in the production and application of law of supply and revenue concepts.
- CO3** Explain the market structure by analysing various pricing under different market conditions.
- CO4** Understand about the profit and how to analyze profit with BEP. Assess the difficulties in measuring National Income and to consider it in Business cycle.

Course Code: 20CCP02

Course Name: Marketing Management

- CO1** Remember the basic principles of micro and macro marketing in the business and industry and to identify the marketing strategies.

- CO2** Understand the concepts of product design and pricing decisions.
- CO3** Apply new strategies for promoting of sales and supply chain network and to evaluate the impact of digital marketing.
- CO4** Analyze the marketing information system and research, assessing the recent trends in global marketing and social media marketing.

Course Code: 20CCP03

Course Name: Business Environment & Ethics

- CO1** Examine the concept of business environment and identify its Ethics
- CO2** Summarize the macroeconomic parameters and current implications of industrial policies.
- CO3** Apply the political, Legal, social, cultural, natural environment framework that regulates the business arena.
- CO4** Analyze and compare the social attitude and its impact in the Socio-cultural environment.

Course Code: 20CCP04

Course Name: E-Commerce Technology

- CO1** Remember the concepts of information technologies used in E-commerce.
- CO2** Apply the concept of organizational and managerial foundation.
- CO3** Illustrate the different network security issues. Analyze the concept of technical ethical social issues of information systems.
- CO4** Evaluate different types of electronic payment systems in business.

Course Code: 20CCP05

Course Name: Practical – I: Advanced Excel

- CO1** Apply advanced formulas to lay data in readiness for analysis.
- CO2** Compare different types of formulas for analysing data.
- CO3** Understanding the various concepts and functions for data interpretation and their application in the business report.
- CO4** Estimate the multiple worksheet and to display bank details by Macro functions.

SEMESTER II

Course Code: 20CCP06

Course Name: Corporate Accounting

- CO1** Develop the knowledge on various methods and valuation of shares and goodwill.

- CO2** Understanding and Preparation of Final accounts and to find out the dividend declaration and issue of bonus shares.
- CO3** Computation of financial statement of Banking and Insurance Companies and accounting for price level changes. Understanding the concepts of social responsibility accounting.
- CO4** Analyze the financial statement and apply the methods for mergers and acquisitions of the business

Course Code: 20CCP07

Course Name: Organizational Behaviour

- CO1** Enabling the students recall the need of various approaches towards an organization.
- CO2** Understand the importance of various personality theories and apply the factors influencing perception Learning.
- CO3** Apply in depth Knowledge about conflicts and criticize the powers and politics of employees.
- CO4** Analyzing the effective organizational culture and to evaluate building learning organization.

Course Code: 20CCP08

Course Name: Investment & Portfolio Management

- CO1** Students are able to recall the basic investment concepts and to identify the investment programmes.
- CO2** Understand the current financial market and knowing the various credit rating agencies.
- CO3** Apply the concept of portfolio management and choose the investment alternatives.
- CO4** Analyze risk in investment and various return concepts in securities market

Course Code: 20CCP09

Course Name: Programming with Java & HTML

- CO1** Record the strength and weakness of Object Oriented programming
- CO2** Understand the functions and threads in JAVA applications.
- CO3** Apply the basic concept of HTML and implement the coding to create web pages.
- CO4** Evaluate the various hyperlinks to connect various HTML pages together.

Course Code: 20CCP10

Course Name: Practical – II: Tally & HTML

- CO1** Remembering and understanding the basic knowledge of accounting software.
- CO2** Illustrate the methods of accounts with GST using Tally ERP9

- CO3** Apply the steps to create web pages for organizations.
- CO4** Execute the design using frame, table, list and images using HTML programming.

SEMESTER III

Course Code: 19CCP12

Course Name: Cost & Management Accounting

- CO1** Identify the specifics of different costing methods
- CO2** To develop the know-how and concept of marginal costing with practical problems
- CO3** Applying cost-volume-profit techniques and Budgetary control systems to determine optimal managerial decisions.
- CO4** To Analyze and provide recommendations to improve the operations of organisations through the application of Ratios in the Financial statements.

Course Code: 19CCP13

Course Name: Financial Management

- CO1** It enables the students to know the financial objectives, its planning and scope.
- CO2** It helps them to understand how firms meet their financial objectives utilizing financial decision-making.
- CO3** It explain financial tools and techniques, which can be used to help firms maximize value by improving decisions relating to capital budgeting, capital structure and working capital management.
- CO4** It enables to understand dividend policies and Working Capital Management

Course Code: 19CCP14

Course Name: Consumer Behaviour

- CO1** To make the student understand various concepts of consumer behaviour.
- CO2** To make the student familiarize with determinants of consumer behaviour
- CO3** To understand the social factors influencing consumer behaviour
- CO4** To develop the students' knowledge relating to consumer decision making and satisfaction

Course Code: 19CCP15

Course Name: Business Research Methods

- CO1** Define the research approach and its different process
- CO2** Explain the techniques involved in defining the research problem
- CO3** Apply the different sampling procedures adopted for research
- CO4** Analyze statistical tools used to retrieve the results

Course Code: 19CCP17A**Course Name: Indirect Taxation**

- CO1** To make the student understand the basic structure of indirect taxation system in India.
- CO2** To enable the students with the concepts of goods and service tax and GST portal usage.
- CO3** To familiarize the students with the e-filing procedures and tax deducted at source.
- CO4** To develop the students' knowledge relating to customs and central excise.

Course Code: 19CCP17B**Course Name: Financial Markets & Institutions**

- CO1** To make the student understand the basic concepts of Financial Markets
- CO2** To enable the students with the concepts and procedure for Foreign exchange market and derivative market
- CO3** To familiarize the students with various forms of financial services
- CO4** To develop the students' knowledge relating to money market and various security investment

SEMESTER IV**Course Code: 19CCP18****Course Name: Human Resource Management**

- CO1** To make the student more competitive for employment and higher education.
- CO2** Understanding the goals of HRM and organizational outcomes, and apply this understanding in practical situations.
- CO3** To develop the understanding of the concept of human resource management and to understand its relevance in organizations.
- CO4** To build the necessary competencies and creativity and prepare them to undertake entrepreneurship as a desirable and feasible career option.

Course Code: 19CCP19**Course name: Direct Taxation**

- CO1** Outline and summarise the keen conceptual understanding of various sections and provisions of Income Tax Act,1961
- CO2** To understand the provisions and procedure to compute total income under five heads of income i.e. salaries, house property, profits & gains from business & profession, capital gains and other sources.
- CO3** To understand the various deductions to be made from gross total income U/s 80-C to 80-U in computing total income
- CO4** Apply and practice the computation of total income

Course Code: 19CCP20**Course Name: Programming with Visual Basic**

- CO1** Learn and understand the basic knowledge on Visual Basic concepts.
- CO2** Understand and develop applications using visual basic Programming controls, Operators and Functions.
- CO3** To analyze and understand the role of Database Connectivity and Data Environment.
- CO4** To evaluate small/medium scale visual basic programs with Reports.

Course Code: 19CCP21**Course Name: Practical IV: Visual Basic**

- CO1** Develop application in different frameworks.
- CO2** Apply the recent techniques and features to Construct an application.
- CO3** Understand the conditional statements, loops and functions for creating programs.
- CO4** Write technical report on the observations from the experiments.

Course Code: 19CCP22A**Course Name: Entrepreneur Development**

- CO1** To make the student understand the basic concepts and role of entrepreneurship
- CO2** To enable the students with entrepreneurial promotion along with training and development.
- CO3** To familiarize the students with project management and project finance
- CO4** To develop the students' knowledge relating to various small-scale industries.

Course Code: 19CCP22B**Course Name: Export Import Procedures**

- CO1** To acquire the concept of Foreign exchange regulations and formalities
- CO2** To understand the various regulatory documents used in foreign trade
- CO3** To apply the pre-shipment and post-shipment procedures
- CO4** To understand the Customs clearance for Export cargo.

PROGRAMME NAME: M.Com. (International Business)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Graduates will be International business leaders and managers with leadership and problem-solving skills for global business.
PEO2	Graduates will drive entrepreneurial initiatives either on their own or within other organizations where they are employed.
PEO3	Graduates will have innovation skills and drive the business through multifaceted skills.
PEO4	Graduates will provide advancement of conceptual and practical knowledge in their field of International business to contribute nation building while upholding ethical practices
PEO5	Graduates will equip themselves for International contributions of their education and advance in their academics.

PROGRAMME OUTCOMES

PO1	To educate and develop the students towards the business at domestic and International level.
PO2	To have a better understanding of Foreign Trade policy and to succeed in the business by availing future opportunities and by using appropriate business strategy.
PO3	To upgrade the practical exposure in logistics and documentation work in the Import and Export.
PO4	To develop an ability to avail employment opportunities in national and International level.
PO5	To enable them to acquire different skills and ability to foresee the hidden opportunities in International Business and utilize the same.

COURSE OUTCOMES

SEMESTER I

Course Code: 20MIP01

Course Name: Introduction to International Business

- | | |
|------------|------------------------------------------------------------------------------------------|
| CO1 | Acquire the knowledge about international business and international trade theories. |
| CO2 | Understand the meaning of international grouping and international business environment. |
| CO3 | Have thorough knowledge about international relations and diplomacy. |

CO4 Classify the basic international business terminology and become familiar in Diplomacy and India's Foreign policy.

Course Code: 20MIP02

Course Name: Global Perspective of Indian Marketing

CO1 Identify the basic difference between inter-regional and international marketing

CO2 Understand the challenges in the real life businesses related to Indian marketing

CO3 Identifying various consumer environment related Indian marketing and law of protection their rights

CO4 Discovering more about Indian marketing strategies and economic reforms takes on the globe.

Course Code: 20MIP03

Course Name: International Consumer Markets and Consumer Buyer Behaviour

CO1 Identify the global consumer markets and buyer behavior.

CO2 Understand the various types of consumers and factors which affects the behaviors and decisions.

CO3 Develop the consumer models and strategies to promote the product

CO4 Appraise and apply the practical aspects in International consumer market.

Course Code: 20MIP04

Course Name: International Marketing Management

CO1 Understand and evaluate the application of international marketing

CO2 Identify the skill sets required in international marketing

CO3 Examine the various functions of International Marketing

CO4 Determine the various Marketing areas challenges and promotions

Course Code: 20MIP05

Course Name: International Branding

CO1 Identify the basic difference between international branding and brand communication.

CO2 Understand the legal framework of brand planning, values and brand perceptions.

CO3 Experiment the concept of brand positioning and the advantages of creating strong brands.

CO4 Discovering more about brand strategies by building, measuring and managing brand equity globally.

Course Code: 20MIP06

Course Name: Cost And Management Accounting

- CO1** Identifying the various methods of cost Accounting, Illustrate the costing and management Accounting
- CO2** Select the appropriate tools for managerial decision making
- CO3** Illustrate the preparation of Funds flow and /cash flow statement
- CO4** Develop the techniques to prepare different types of budgets

SEMESTER II

Course Code: 20MIP07

Course Name: Foreign Exchange Management

- CO1** Identify and Understand Foreign exchange risk and exposure
- CO2** Explain and analyze Foreign Exchange Transactions
- CO3** Examine the Inter Bank Deals- cover deals trading
- CO4** Evaluate authorized dealers in nationalized

Course Code: 20MIP08

Course Name: International Financial Markets

- CO1** Identify the concept of International Financial Institutions and its impacts.
- CO2** Understand the various instruments of the money market currency trading locations.
- CO3** Explain the basic concepts about capital market and apply the recent amendments in Stock Exchanges and Stock listing companies
- CO4** Analyze different hedging prices with Exchange traded funds and technological developments are transforming fixed-income markets.

Course Code: 20MIP09

Course Name: International Financial Derivatives

- CO1** Evaluating the concepts and market mechanics of different types of financial derivatives
- CO2** Identifying the evolution of commodity markets and exchanges in India.
- CO3** Examine the Construct hedges using futures, swaps and bonds and its pricing principles.
- CO4** Analyze how financial derivatives are valued, based on the no-arbitrage and risk-neutral valuation approaches

Course Code: 20MIP10

Course Name: Practical – I & (MS Word, MS Power Point and Advanced Excel)

- CO1** Interpret the software's MS word and preparation of documents with relevant about shipping documents.
- CO2** Explain the power point slide and apply animation effects
- CO3** Calculate sales estimation by using the functions in the excel sheet.
- CO4** Estimate the student mark list and perform conditional formatting function in the excel sheet.

SEMESTER III

Course Code: 19MIP11

Course Name: Business Research Methods

- CO1** Define the concept ,scope and significance of business research
- CO2** Explain research problem with types of research design
- CO3** Apply detail knowledge about sampling techniques and methods of data collections
- CO4** Analyse the statistical tools used in research

Course Code: 19MIP12

Course Name: Strategic Management

- CO1** Define the concept of strategic management and International business
- CO2** Interpret Hierarchy objective and Social Responsibility of Business
- CO3** Examine SWOC analysis and BCG approach for Business Environment
- CO4** Explain the concept of mergers and acquisition for the strategic development

Course Code: 19MIP13

Course Name: Export Import Finance

- CO1** Understand the sources of export credit system in India
- CO2** Summarize the dimensions of pre-shipment and post-shipment finance with different currencies
- CO3** Examine the financial agencies roles and responsibilities and lending regulatory procedures
- CO4** Analyse the procedure deferred payments and its conditions for approving

Course Code: 19MIP14

**Course Name: Computer Application
Practical – II - SPSS**

- CO1** Remembering the knowledge on basic datasheet creation from SPSS
- CO2** Understanding the various statistical tools applying through SPSS
- CO3** Determining the various Technical adaptation from the SPSS Software Package
- CO4** Explaining the various concepts and strategies used by SPSS Software Package

Course Code: 19MIP15

Course Name: Supply Chain Management

- CO1** Identify the concept and performance drivers in supply chain management
- CO2** Describe the strategies , players and supply chain integration
- CO3** Apply purchasing strategies in SCM
- CO4** Categorize the process of outsourcing in SCM

Course Code: 19MIP17A

Course Name: Human Resource Management

- CO1** Enumerate the difference between personnel management and human resource management
- CO2** Classify the job description, analysis and specification
- CO3** Examine Human resource development and Training and Development
- CO4** Analyse the performance appraisal methods

Course Code: 19MIP17B

Course Name: Intellectual Property Rights

- CO1** Identify the forms of Intellectual property rights
- CO2** Indicate the different aspects in copy rights act
- CO3** Develop broad knowledge about trade mark registration and its offences
- CO4** Analyze the law imposed for patent rights

SEMESTER IV

Course Code: 19MIP18

Course Name: International Business Relations

- CO1** Understand the origin and growth of International relations with a view point of foreign trade policy.
- CO2** Analyse the sources of International law and its role of balance.

CO3 Indicate the picture of diplomacy and various types of diplomacy.

CO4 Gain the major countries participated in trade relationship.

Course Code: 19MIP19

Course Name: International Finance

CO1 Understand the concept of International markets and capital markets

CO2 Acquire the present international monetary and financial environment

CO3 Gives knowledge about exchange rate theories

CO4 Evaluate the functions and process of International banking

Course Code: 19MIP20

Course Name: Computer Practical – III (Tally)

CO1 Describe the detail concept of Tally

CO2 Execute the program of profit and loss account and balance sheet

CO3 Create stock items for various categories with consolidation of accounts

CO4 Create business related transactions for forex gains and loss

Course Code: 19MIP21A

**Course Name: Entrepreneurship Development
and Project Management**

CO1 Understand the concept of the role of entrepreneur

CO2 Acquire the need for Role of entrepreneurship development program

CO3 Identify the sources of information for project setup

CO4 Analyse the project network design and its audit

Course Code: 19MIP21B

Course Name: Air Transport Management

CO1 Outline the concept of Air transportation

CO2 Explain the different provisions for air industry

CO3 Gives knowledge about aviation geography condition based on time

CO4 Describe the procedure for travel formalities in customs

PROGRAMME NAME: M.Sc. (Computer Science)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Implement domain knowledge of core technologies and deliver professional services in career by incorporating creativity in computing profession.
PEO2	Explore leadership skills and incorporate ethics as an entrepreneurship to inculcate problem solving capability, design skills and other diverse career paths.
PEO3	Expose Knowledge to various contemporary issues which will enable to become ethical and responsible towards themselves as a co-worker for society and the nation.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: It helps students to acquire core competence in various subjects of Computer Science.
PO2	PROBLEM SOLVING AND ANALYSING: It helps students to recognize the organizational need and to engage themselves in continuing professional development.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: It helps students to apply knowledge of computing and mathematics in the appropriate field.
PO4	MODERN TOOL USAGE: It helps students to design, implement, and evaluate a computational system to meet the desired needs within realistic constraints.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: It helps students to apply mathematical foundations, algorithmic principles, and computer science theory in the modeling and design of computational systems in a way that demonstrates comprehension of the tradeoffs involved in design choices.
PO6	SELF DIRECTED / LIFE LONG LEARNING: It helps to students to function effectively as self-directed to accomplish shared computing design, evaluation, implementation of goals, etc.,
PO7	ENHANCING RESEARCH CULTURE: Recognize the need for and ability to engage in continuing professional development through enhancing research culture.

COURSE OUTCOMES

SEMESTER I

Course Code:20CEP01

Course Name: Mobile Application Development

CO1	Define to develop simple GUI Applications
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- CO2** Extend and able to use widgets and components in their android applications
- CO3** Apply to work with database locally & cloud
- CO4** Examine to deploy the applications by inheriting web services.

Course Code:20CEP02

Course Name: Analysis & Design of Algorithms

- CO1** Choose mathematical foundation in analysis of algorithms.
- CO2** Describe with different algorithmic design strategies
- CO3** Apply design principles and concepts to algorithm design
- CO4** Analyze to choose appropriate algorithm design techniques for solving problems.

Course Code:20CEP03

Course Name: Advanced Java Programming

- CO1** List classes, objects, members of a class and relationships among them needed for a specific problem.
- CO2** Classify dynamic web pages, using Servlets and JSP.
- CO3** Apply to develop RMI application using Java Spring Framework
- CO4** Analyze and classify the type of framework and its advantages

Course Code:20CEP04

Course Name: Advanced Software Engineering

- CO1** Select approaches to verification and validation including static analysis, and reviews.
- CO2** Describe software testing approaches such as unit testing and integration testing
- CO3** Organize software measurement and software risks
- CO4** Analyze on quality control and how to ensure good quality software.

Course Code:20CEP05

Course Name: Practical I : Mobile Application

- CO1** Define a Mobile Application using Android Studio
- CO2** Interpret to use widgets and components in their android applications

- CO3** Apply to work with database locally & cloud
- CO4** Examine to deploy the applications by inheriting web services.

Course Code:20CEP06

Course Name: Practical II: Java Programming

- CO1** Observe to develop simple GUI Applications
- CO2** Extend on developing RMI Application
- CO3** Experiment with an application using Framework
- CO4** Classify and understand the concepts of Hibernate

SEMESTER II

Course Code:20CEP07

Course Name: Advanced Operating System

- CO1** Identify the importance of computer system resources and the role of operating system in their management policies and algorithms.
- CO2** Illustrate the working of real-time operating systems and real-time database.
- CO3** Examine the hardware and software issues in modern distributed systems.
- CO4** Organize the requirement for process synchronization and coordination handled by operating system

Course Code:20CEP08

Course Name: Open Source Database Management System

- CO1** Define the structure and model of the relational database system
- CO2** Classify multiple tables, and using group functions, sub queries
- CO3** Establish a database based on a data model considering the normalization to a specified level
- CO4** Analyze the storage size of the database and design appropriate storage techniques

Course Code:20CEP09

Course Name: Web Programming Using Open Source

- CO1** Define interactive web page(s) using HTML, CSS and JavaScript.

- CO2** Illustrate a responsive web site using HTML5 and CSS3.
- CO3** Apply Dynamic web site using server side PHP Programming and Database connectivity.
- CO4** Determine and differentiate different Web Extensions and Web Services.

Course Code:20CEP10

Course Name: Machine Learning & Robotics

- CO1** Observe a problem and Use AI technique to Process Information
- CO2** Illustrate Search engine optimization technique to resolve problem reduction
- CO3** Develop about robotics application developments
- CO4** Categorize to understand about different type of sensors and its implementation procedures

Course Code:20CEP11

Course Name: Practical III: Open Source Database Management System

- CO1** List out the underlying concepts of database technologies
- CO2** Illustrate and implement a database schema for a given problem domain
- CO3** Establish the enforce integrity constraints on a database
- CO4** Organize programming PL/SQL including stored procedures, stored functions, cursors and packages

Course Code:20CEP12

Course Name: Practical IV: Web Programming

- CO1** List out and develop simple GUI Applications
- CO2** Demonstrate a web application using PHP & MYSQL
- CO3** Applying Template in Web Application
- CO4** Correlate an application using Client / Server Panel in Web Environment.

SEMESTER III

Course Code:19CEP13**Course Name: Digital Image Processing**

- CO1** Understand the need for image transforms and their properties
- CO2** Develop image processing application
- CO3** Learn different techniques employed for the enhancement of images
- CO4** Understand the need for image compression and to learn the spatial and frequency domain techniques of image Compression.

Course Code:19CEP14**Course Name: Data Mining and Warehousing**

- CO1** Understand to simple KDD process and Data Warehouse
- CO2** Analyze and Apply Classification Techniques
- CO3** Apply Clustering Algorithms on Various dataset using WEKA
- CO4** Design to deploy the Data Mining tasks Using Algorithms

Course Code:19CEP15**Course Name: Internet of Things**

- CO1** Understand and intuition of the whole process line of extracting knowledge from data about the Internet of Things.
- CO2** Experience in deriving theoretical properties of methods involved in IoT.
- CO3** Design and implementation/modification of methods involved in IoT.
- CO4** Create effective results of IoT future approaches.

Course Code:19CEP16**Course Name: Practical V: DIP Programming**

- CO1** Understand the relevant aspects of digital image representation and their practical implications
- CO2** Have the ability to design point wise intensity transformations to meet stated specifications.
- CO3** Have an understanding of the underlying mechanisms of image compression, and the ability to design systems using standard algorithms to meet design specifications.
- CO4** Understand a command of basic image restoration techniques.

Course Code: 19CEP17

**Course Name: Practical VI: Programming
the Internet of Things Lab**

- CO1** Recognize various devices, sensors and applications (Knowledge)
- CO2** Analyze various M2M and IoT architectures (Analyze)
- CO3** Evaluate design issues in IoT applications (Evaluate)
- CO4** Create IoT solutions using sensors, actuators and Devices (Create)

Course Code:19CEP18A

**Course Name :Elective -I(A)
Distributed Computing**

- CO1** Identify the core concepts of distributed systems.
- CO2** Illustrate the mechanisms of inter process communication in distributed systems.
- CO3** Compare the concurrency control mechanism in distributed transactional environment.
- CO4** Outline the need for mutual exclusion and election algorithms in distributed systems.

Course Code:19CEP18B

**Course Name: Elective-II(B)
Web Technology**

- CO1** Ability to design a dynamic webpage.
- CO2** Ability to understand about different type of scripting languages and use it to develop websites.
- CO3** Apply the skill to develop applications using various scripting languages.
- CO4** Design to create structure of web page, to store the data in web document, and transport information through web.

SEMESTER IV

Course Code:19CEP19

Course Name :Big Data Analytics

- CO1** Students have an ability to work with big data platform and explore the big data analytics techniques business applications.
- CO2** Analyze the HADOOP and Map Reduce technologies associated with big data analytics
- CO3** Apply the skill to develop applications using various scripting languages.
- CO4** Perform appropriate statistical tests using R and visualize the outcome.

Course Code:19CEP20**Course Name: Research Methodology**

- CO1** Describe what research is and what is not. To raise awareness of crucial aspect of the nature of Knowledge and the value of scientific method
- CO2** Evaluate literature, from a variety of sources, pertinent to the research objectives
- CO3** Justify how researchers will collect data
- CO4** Warn the common mistakes in the field of research methodology

Course Code:19CEP21**Course Name: Practical VII: Big Data Analytics**

- CO1** To optimize business decisions and create competitive advantage with Big Data analytics
- CO2** Implement statistical analysis techniques for solving practical problems.
- CO3** Perform statistical analysis on variety of data
- CO4** Perform appropriate statistical tests using R and visualize the outcome

Course Code:19CEP22A**Course Name: Elective II(A)****Business Intelligence**

- CO1** To enable the students to learn about the foundations, definitions, and capabilities of DSS, data analytics and BI
- CO2** Will gain knowledge about the impact of business reporting, information visualization, and dashboards.
- CO3** Illustrate a working knowledge of how to plan, execute and close business to required standards
- CO4** Use a range of proprietary and non- proprietary management tools to carry out and report on your team projects

Course Code:19CEP22B**Course Name: Elective II(B): E-Commerce**

- CO1** Understand the methodology for online business
- CO2** Analyze and Applying digital transaction using e-commerce infrastructure.
- CO3** Strategic approach to define how mobile phones can be integrated into marketing strategy in organizations.
- CO4** Deploy Electronic data flow in organization

PROGRAMME NAME: M.Sc. (Information Technology)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Implement domain knowledge of core technologies and deliver professional services in career by incorporating creativity in computing profession.
PEO2	Explore leadership skills and incorporate ethics as an entrepreneurship to inculcate problem solving capability, design skills and other diverse career paths.
PEO3	Expose Knowledge to various contemporary issues which will enable to become ethical and responsible towards themselves as a co-worker for society and the nation.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Apply the knowledge of mathematics, science, computer fundamentals, to the solution of complex problems.
PO2	PROBLEM SOLVING AND ANALYSING: Identify, formulate, review research literature, and analyze complex real world problems and arriving substantiated conclusions.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Understand the impact of the professional solutions in societal and environmental contexts, and demonstrate the knowledge and need for sustainable development.
PO4	MODERN TOOL USAGE: Create, select, and apply appropriate techniques, resources, and modern IT tools including prediction and modeling to complex technical activities with an understanding of the limitations.
PO5	TEAMWORK & COMMUNICATIVE SKILLS: Communicate effectively on complex activities with the technical community and with society.
PO6	SELF DIRECTED / LIFELONG LEARNING: Recognize the need for and have the preparation and ability to engage in independent and life-long learning in the context of technological change.
PO7	ENHANCING RESEARCH CULTURE: Apply ethical research principles and responsibilities of the technical practice.

COURSE OUTCOMES

SEMESTER I

Course Code: 20ITP01

Course Name: Mobile Application Development

CO1	Choose a mathematical foundation in analysis of algorithms.
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- CO2** Describe with different algorithmic design strategies
- CO3** Apply design principles and concepts to algorithm design
- CO4** Analyze to choose appropriate algorithm design techniques for solving problems.

Course Code: 20ITP02

Course Name: Cloud Computing and Services

- CO1** Illustrate Cloud Computing and categories the different Cloud services and deployment models
- CO2** Identify and recall the key components of Amazon web Service
- CO3** Compare security and privacy issues in cloud computing.
- CO4** Analyze the components of open stack & Google Cloud platform and understand Mobile Cloud Computing

Course Code: 20ITP03

Course Name: Advanced Java Programming

- CO1** List classes, objects, members of a class and relationships among them needed for a specific problem.
- CO2** Classify dynamic web pages, using Servlets and JSP
- CO3** Apply to develop RMI application using Java Spring Framework
- CO4** Analyze and classify the type of framework and its advantages

Course Code: 20ITP04

Course Name: Wireless Network

- CO1** Define the basic concepts of wireless network and wireless generations.
- CO2** Compare and contrast different wireless technologies such as CDMA, GSM, GPRS etc
- CO3** Discover and judge the emerging wireless technologies standard such as WLL, WLAN, WPAN, WMAN
- CO4** Determine the security measures, standards. Services and layer wise security considerations.

Course Code: 20ITP05

**Course Name: Practical I: Mobile
Application Programming**

- CO1** Define a Mobile Application using Android Studio
- CO2** Interpret to use widgets and components in their android applications
- CO3** Apply to work with database locally & cloud
- CO4** Examine how to deploy the applications by inheriting web services.

Course Code: 20ITP06

Course Name: Practical II : Java Programming

- CO1** Remembering and Developing simple GUI Applications
- CO2** Extend on developing RMI Application
- CO3** Experiment with an application using Framework
- CO4** Classify and understand the concepts of Hibernate

SEMESTER II

Course Code: 20ITP07

Course Name: Advanced Operating System

- CO1** Identify the importance of computer system resources and the role of operating systems in their management policies and algorithms.
- CO2** Illustrate the working of real-time operating systems and real-time databases.
- CO3** Examine the hardware and software issues in modern distributed systems.
- CO4** Organize the requirement for process synchronization and coordination handled by operating system

Course Code: 20ITP08

**Course Name: Open Source Database
Management System**

- CO1** Define the structure and model of the relational database system
- CO2** Classify multiple tables, and using group functions, sub queries
- CO3** Establish a database based on a data model considering the normalization to a specified level
- CO4** Analyze the storage size of the database and design appropriate storage techniques

Course Code: 20ITP09**Course Name: Web Programming
Using Open Source Technologies**

- CO1** Define interactive web page(s) using HTML, CSS and JavaScript.
- CO2** Illustrate a responsive web site using HTML5 and CSS3.
- CO3** Apply Dynamic web site using server side PHP Programming and Database connectivity.
- CO4** Determine and differentiate different Web Extensions and Web Services.

Course Code: 20ITP10**Course Name: Network Security**

- CO1** Define the role of management in enforcing security policies standards and practices.
- CO2** Remembering and solving a problem using problem solving technique in AI
- CO3** Illustrate how digital signatures are performed and the role of digital certificates.
- CO4** Develop implementations for some of the common cryptographic algorithms.

Course Code: 20ITP11**Course Name: Practical III : Open Source Database
Management System**

- CO1** List out the underlying concepts of database technologies
- CO2** Illustrate and implement a database schema for a given problem domain
- CO3** Establish the enforce integrity constraints on a database
- CO4** Organize programming PL/SQL including stored procedures, stored functions, cursors and packages

Course Code: 20ITP12**Course Name: Practical IV : Web
Programming**

- CO1** List out and develop simple GUI Applications
- CO2** Demonstrate a web application using PHP & MYSQL
- CO3** Applying Template in Web Application
- CO4** Examine an application using Client / Server Panel in Web Environment.

SEMESTER III

Course Code: 19ITP13

Course Name: Internet of Things

- CO1** Understand and intuition of the whole process line of extracting knowledge from data about the Internet of Things.
- CO2** Experience in deriving theoretical properties of methods involved in IoT.
- CO3** Design and implementation/modification of methods involved in IoT.
- CO4** Create effective results of IoT future approaches.

Course Code: 19ITP14

**Course Name: Deep Learning
with Python**

- CO1** Learn to use Python, Tensorflow and Keras to develop deep learning applications.
- CO2** Learn deep learning methodologies to process not only image based datasets but also raw text, numbers etc.
- CO3** Develop ability to independently solve business problems using deep learning techniques.
- CO4** Develop a verified portfolio with hands on deep learning projects that will showcase the new skills acquired to employers.

Course Code: 19ITP15

Course Name: Soft Computing

- CO1** Describe the important computer system resources and the role of operating system in their management policies and algorithms.
- CO2** Discuss the working of real-time operating systems and real-time database.
- CO3** Manipulate hardware and software issues in modern distributed systems.
- CO4** Evaluate the requirement for process synchronization and coordination handled by operating system

Course Code: 19ITP16

**Course Name: Practical V : Programming
the Internet of Things**

- CO1** Recognize various devices, sensors and applications (Knowledge)
- CO2** Analyze various M2M and IoT architectures (Analyze)
- CO3** Evaluate design issues in IoT applications (Evaluate)
- CO4** Create IoT solutions using sensors, actuators and Devices (Create)

Course Code: 19ITP17

**Course Name: Practical VI : Python
Programming Lab**

- CO1** Describe the Python language syntax including control statements, loops and functions.
- CO2** Examine the core data structures like lists, dictionaries, tuples and sets in Python to store, process and sort the data.
- CO3** Discover the capabilities of Python regular expression for data verification and utilize matrices for building performance efficient Python programs.
- CO4** Identify the external modules for creating and writing data to excel files and inspect the file operations to navigate the file systems.

Course Code: 19ITP18A

**Course Name: Elective I : Software
Project Management**

- CO1** State the importance and need for a Software Process and their metrics.
- CO2** Summarize various Project Management Activities and their Life Cycle.
- CO3** Relate and solve Globalization issues in Project Management.
- CO4** Research and Design a component or a product applying all the relevant standards and with realistic constraints.

Course Code: 19ITP18B

Course Name: Elective I : Bioinformatics

- CO1** Understand the basic principles and concepts of biology, computer science and mathematics
- CO2** Interpret information from large databases and to use this information in computer modeling
- CO3** Compare problem-solving skills and experiment including the ability to develop new algorithms and analysis methods
- CO4** Classify of the intersection of life and information sciences, structure-function relationships, information theory, gene expression, and database queries

SEMESTER IV

Course Code: 19ITP19

Course Name: Big Data Analytics

- CO1** Students have an ability to work with big data platform and explore the big data analytics techniques business applications.

- CO2** Analyze the HADOOP and Map Reduce technologies associated with big data analytics
- CO3** Students can Perform statistical analysis on variety of data.
- CO4** Perform appropriate statistical tests using R and visualize the outcome.

Course Code: 19ITP20

Course Name: Research Methodology

- CO1** Describe what research is and what is not. To raise awareness of crucial aspect of the nature of Knowledge and the value of scientific method
- CO2** Evaluate literature, from a variety of sources, pertinent to the research objectives
- CO3** Justify how researchers will collect data
- CO4** Warn the common mistakes in the field of research methodology

Course Code: 19ITP21

Course Name: Practical VII : Big Data Analytics Using R Tool

- CO1** To optimize business decisions and create competitive advantage with Big Data analytics.
- CO2** Implement statistical analysis techniques for solving practical problems.
- CO3** Perform statistical analysis on variety of data.
- CO4** Perform appropriate statistical tests using R and visualize the outcome.

Course Code: 19ITP22A

Course Name: Elective II : Enterprise Resource Planning

- CO1** Explain the fundamentals technology of Enterprise Resource Planning
- CO2** Design a simple ERP Module for an organization
- CO3** Build factors that implement ERP Life cycle
- CO4** Estimate the trends in ERP Technologies

Course Code: 19ITP22B

**Course Name: Elective II : Artificial
Intelligence and Robotics**

- CO1** Identify and build an appropriate process model for a given project
- CO2** Analyse the principles at various phases of software development
- CO3** Translate specifications into design, and identify the components to build the Architecture
- CO4** Tabulate appropriate Testing Plans at different levels during the development of the software

PROGRAMME NAME: M.C.A.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Augment research and entrepreneurial skills along with a rich set of communication, team work and leadership abilities to excel in their profession.
PEO2	Exhibiting persistent enhancement in their profession through life-long learning, realizing human values and principles.
PEO3	Demonstrating technical competency and leadership to become professional engineers leading to a successful career.
PEO4	Pursuing lifelong learning in generating innovative engineering solutions using research and complex problem-solving skills.

PROGRAMME OUTCOMES

PO1	Enables students to understand computing fundamentals, computing specialization and domain knowledge which is appropriate for computer professional.
PO2	Helps students to develop the ability to engage in independent learning and for continual development as a computer professional.
PO3	Helps students to understand the impact of professional computing specialization solutions in societal, economic and environmental contexts and demonstrate the knowledge and need for sustainable development.
PO4	Enables students to develop and apply appropriate techniques, resources, and innovative tools to complex activities.
PO5	Enables students to have ability to demonstrate knowledge and understanding of management principles and apply these effectively as an individual, a member or a leader in diverse teams and in multidisciplinary fields.
PO6	Helps students to develop the ability to recognize the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of technological change
PO7	Enables to use research based knowledge and research approaches to provide valid conclusions.

COURSE OUTCOMES

SEMESTER I

Course Code: 20MCP01

Course Name: Programming in Java

CO1 Understand the perception of various GUI tools

- CO2** Explain about the knowledge of various components used at server side
- CO3** Apply the Interface, API and Package to manipulate data in numerous applications
- CO4** Apply the visual basic concepts to create various domains
- CO5** Analyzing various applications using the Connectivity JDBC

Course Code: 20MCP02 Course Name: Relational Database Management System

- CO1** Understand the basic concepts of database architecture and database users.
- CO2** Illustrate about knowledge on the Database design.
- CO3** Develop the knowledge about Relational Model and Relational Algebra.
- CO4** Discover the knowledge about normalization techniques.
- CO5** Evaluate the knowledge on storing data on secondary storage devices

Course Code: 20MCP03 Course Name: Security Fundamentals (MICROSOFT)**

- CO1** Understand the basic concepts of details of user authentication, File permission, Password policies, Encrypting file system and malware.
- CO2** Acquire knowledge on the security principles.
- CO3** Develop the knowledge about dedicated firewall network isolation.
- CO4** Discover the knowledge about protecting the client, server and e-mail from virus, spoofing and phishing.

Course Code: 20MCP05A Course Name: Elective I : Cloud Computing

- CO1** Understand the cloud computing technology and different services
- CO2** Explain the difference between the various available cloud services
- CO3** Apply the kind of cloud service required for a specific process
- CO4** Analyze about the cloud Storage systems and cloud security, the risks involved and its impact
- CO5** Develop applications that use cloud computing and sort out the related security issues

Course Code: 20MCP05B**Course Name: Elective I : Web Services**

- CO1** Understand the basic concepts of Web Services
- CO2** Illustrate about various tools of web services.
- CO3** Develop the knowledge about the fundamentals of XML
- CO4** Apply the concepts of Tools of Web Services (UDDI, SOAP & WSDL etc.,)
- CO5** Analyzing the various concepts of Quality of Service.

Course Code: 20MCP05C**Course Name: Elective I : Artificial Intelligence and Machine Learning**

- CO1** Understand primary concepts of AI and Machine Learning
- CO2** Understand the Computational Models of Classification, Regression using supervised learning and Predictive Analytics with Ensemble Learning
- CO3** Explain about the various approaches of Artificial Neural Networks
- CO4** Analyze the real world problem for understanding and implementation of the dynamic behavior of Machine Learning
- CO5** Justify about the different machine learning techniques to design AI machine for real world problems.

Course Code: 20MCP05D**Course Name: Elective I : Human to Computer Interaction**

- CO1** Understand the design effective of Human Computer Interaction.
- CO2** Explain about the effective dialog for Human Computer Interaction
- CO3** Develop about the designing Web Interfaces
- CO4** Analyze the knowledge about various Models, Internet and WWW
- CO5** Discover the knowledge about various types of Mobile Applications like Widgets, Applications and Games

Course Code: 20MCP06**Course Name: Practical I – Programming in Java Lab**

- CO1** Understand an integrated development environment to write, compile, run, and test simple object-oriented Java programs
- CO2** Illustrate the elementary modifications to Java programs that solve real- world problems
- CO3** Identify and fix defects and common security issues in code.
- CO4** Test to validate input in a Java program

Course Code: 20MCP07

Course Name: Practical II – RDBMS Programming Lab

- CO1** Demonstrate about the perception of various data and library functions
- CO2** Develop various applications using PL/SQL
- CO3** Acquire the visual basic concepts to create various domains
- CO4** Apply the SQL queries to manipulate data in numerous applications

SEMESTER II

Course Code: 20MCP08

Course Name: PHP and MySQL Programming

- CO1** Understand primary concepts of PHP
- CO2** Understand the concepts of arrays and strings
- CO3** Demonstrate on various HTML forms with PHP
- CO4** Apply the knowledge about the backend - MySQL
- CO5** Analyze the concepts of files and various operations performed on it

Course Code: 20MCP09

Course Name: Data Structures and Algorithms

- CO1** Understanding the concepts of Sorting, Searching and Selection
- CO2** Explain the knowledge about Graphs, Backtracking and Branch and Bound Technique
- CO3** Apply the basic data structure concepts to create various domains
- CO4** Acquire the concepts of Linear Data Structure like Linked List, Matrices and Storage Management
- CO5** Analyze the Non - Linear Data Structure like Trees and Graphs

Course Code: 20MCP10

Course Name: Network Technologies

- CO1** Understanding basic concepts of IEEE Standards and Hiper LAN
- CO2** Build the concepts of Mobile IP and Mobile Ad-hoc Networks
- CO3** Explain about Traditional TCP and Classical TCP improvements
- CO4** Acquire the knowledge about 4G, 4.5G and 5G Networks
- CO5** Explain the knowledge UMTS, DHCP and HSDPA

Course Code: 20MCP11**Course Name: Software Development
Fundamentals (MICROSOFT)****

- CO1** Understand the basic concepts of programming such as Storage, data type, decision making and Iterative statements.
- CO2** Acquire knowledge on the Object oriented Programming concepts.
- CO3** Explain the knowledge about Software development concepts.
- CO4** Analyze the knowledge about web page development tools.
- CO5** Demonstrate the knowledge on storing data on secondary storage devices

Course Code: 20MCP12A**Course Name: Elective II : Neural Networks**

- CO1** Understand the Neural Networks Algorithms and Fuzzy logic Techniques
- CO2** Explain the fuzzy logic and neural network techniques to build intelligent machines
- CO3** Apply neural network and fuzzy logic models to handle uncertainty and solve problems
- CO4** Acquire the feasibility of applying neuro fuzzy models for a particular problem
- CO5** Discover and implement machine learning solutions to evaluate and interpret results of an algorithm

Course Code: 20MCP12B**Course Name: Elective II : Block Chain
Technologies**

- CO1** Understand the neediness of Block chaining and its types, Requirement
- CO2** Interpret about the Block chain technology and its architecture
- CO3** Developing Block Chain with Mining Tools
- CO4** Analyze security key management. Creation and exchange of Bitcoins.
- CO5** Discover about the platforms and Applications of Block chain

Course Code: 20MCP12C**Course Name: Elective II :Data Science**

- CO1** Understand the basic concepts of Data science
- CO2** Acquire knowledge on the Univariate Analysis
- CO3** Explain about the knowledge about Prescriptive, Predictive and bivariate analysis
- CO4** Illustrate about the Bi-Variate Analysis
- CO5** Discover the concepts of Data science in real time applications

Course Code: 20MCP12D**Course Name: Elective II :Embedded Systems**

- CO1** Understand the basic concepts of Embedded Computing.
- CO2** Acquire knowledge on the Embedded Computing Platform Design
- CO3** Analyze the knowledge about Sensor Interfacing with Arduino
- CO4** Illustrate about the Embedded Firmware
- CO5** Discover the concepts of Generating delay, Timeout mechanisms

Course Code: 20MCP13**Course Name: Practical III – PHP and MySQL Programming Lab**

- CO1** Demonstrate the Calculator program and Implement the Factorial Calculation
- CO2** Identification of web form using HTML and PHP
- CO3** Demonstrate the database using MySQL and Implementation of record insertion and deletion operations
- CO4** Developing an application to implement Hospital management

Course Code: 20MCP14**Practical IV – Data Structures Lab**

- CO1** Demonstrate the various Searching operations.
- CO2** Implementing Stack and Queue with its operation.
- CO3** Acquire and Apply to perform addition, deletion of a node in non-linear Data structure.
- CO4** Develop a program to implement various types of Sorting.

PROGRAMME NAME: M.B.A.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	To build in the skills necessary for the potential managers in all the functional areas of management and to create an exposure to the latest management concepts and mould the personality of the young minds to inculcate good business practice.
PEO2	To provide an integrated approach to problem solving, decision making and to promote the spirit of entrepreneurship among the participants.

PROGRAMME OUTCOMES

PO1	It helps students to acquire basic knowledge in all functional areas of management
PO2	It helps students to take managerial decisions in the field of specialization chosen by understanding the business constraints.
PO3	It helps students to understand the business environment and formulate ethical and suitable course of actions for the success of the organization.
PO4	It enables students to understand the importance of human relations and to communicate effectively with the stakeholders for the success of the organization.
PO5	It enables students to understand and comprehend the influence of current global trends on the business environment to build a successful career.

COURSE OUTCOMES

SEMESTER I

Course Code: 20MSP01

Course Name: Business Organisation and Management

- | | |
|-----|-----------------------------------------------------------------------------------------------|
| CO1 | Identify and analyze the various forms of an organization. |
| CO2 | To understand and describe the evolution of management functions. |
| CO3 | Visualize & analyze the process of planning and decision making for managerial effectiveness. |
| CO4 | Comprehend & Develop an organizational structure for an organization. |
| CO5 | To analyze the process of controlling for improving organizational performance. |

Course Code: 20MSP02**Course Name: Organizational Behavior**

- CO1** Identify and analyze the components of the behaviour within organization
- CO2** Review and examine the impact of individual behaviour on organization's performance
- CO3** Analyze and interpret the impact of group behaviour on organization's performance
- CO4** Identify and Correlate leadership style based on situation and influences employee towards common goals and objectives
- CO5** Discover and enumerate various organization's aspects towards managing work and life

Course Code: 20MSP03**Course Name: Managerial Economics**

- CO1** Visualize and Analyze the fundamentals in economic aspects of demand and supply.
- CO2** Estimate and analyze the firm-level production and cost concepts.
- CO3** Translate and Develop pricing strategies for output decision making.
- CO4** Identify and analyze business situations in terms of the economic implications and plan.
- CO5** Analyze and Solve issues in the national income and business cycle.

Course Code: 20MSP04**Course Name: Accounting for Managers**

- CO1** Understand and analyze the accounting concepts, principles and Conventions for their routine monetary transaction
- CO2** Define preventive internal control measures by analysing the management concepts and financial statements using various tools.
- CO3** Understand and analyze the variables involved in the Financial Statements.
- CO4** Analyse and prepare fixed and flexible, cash budget and draw interpretations.
- CO5** Identify and Highlight Cost Volume Profit relationship and solve CVP functions.

Course Code: 20MSP05**Course Name: Quantitative Methods for Management**

- CO1** Identify and apply the concept of functions, differentiation and integration in business.
- CO2** Calculate and interpret the various measures of central tendency, dispersion, correlation and regression for business decisions.
- CO3** Recall the probability concepts for analyzing the random variables.

- CO4** Ability to analyze and apply the various methods of index number in comparing price or quantity with base value. Analyze the components of Time series.
- CO5** Demonstrate the structure of hypothesis testing and apply for statistical tests for business decisions.

Course Code: 20MSP06

Course Name: Legal Aspects of Business

- CO1** Analyze and summarise the fundamentals of legal environment
- CO2** Outline, Analyze and Trace various contracts and laws
- CO3** Understand and analyze the highlights of Negotiable Instruments
- CO4** Analyze and Solve business situations in terms of legal laws
- CO5** Summarise and understand the industrial laws

Course Code: 20MSP07

Course Name: Practical-Business Application Lab - I

- CO1** Apply and setup basics in MS-Excel
- CO2** Exposure to the application of formatting in Excel
- CO3** Highlight and examine the basic functions of MS-Excel
- CO4** Prepare and show the usage of the tool bars in Ms-Excel
- CO5** Application and protection of file in Excel

Course Code: 20JOB01

Course Name: Communication Practice - I

- CO1** Familiarize with various types of communication.
- CO2** Develop the written communication skills effectively and apply them.
- CO3** Adopt themselves to various forms of letter writing and apply in business situations.
- CO4** Master the art of Writing internal letters and apply in business situations
- CO5** Master the art of Writing External letters and apply in business situations

Course Code: 20JOB02

Course Name: Social Immersion Projects

- CO1** Understand and analyze the various forms of non-profit organizations.
- CO2** Apply the cleanliness habits among individuals
- CO3** Understand and educate the methods of self-handling and career guidance.
- CO4** Understand and analyze the importance of a better society.
- CO5** Apply the innovative techniques in social immersion projects

SEMESTER II

Course Code: 20MSP08

Course Name: Operations Management

- CO1** Understand and analyze the operations functions and product design of a manufacturing and service industry, its importance and Competitiveness of Operations in the current environment.
- CO2** Understand and apply the concepts of Plant Location, Layout planning and Process Planning in Operations Management for operational efficiency.
- CO3** Comprehend and apply the techniques of production planning and control for enhancing the efficiency of the organization.
- CO4** Comprehend and analyze the techniques in managing inventory and controlling inventory for operational excellence.
- CO5** Understand and apply the various techniques of Quality Control in an organization

Course Code: 20MSP09

Course Name: Marketing Management

- CO1** Understand and analyze the marketing concepts and its evolution.
- CO2** Analyze the market based on segmentation, targeting and positioning
- CO3** Analyze and make decisions on promotion mix and distribution
- CO4** Understand and analyze the importance of marketing communication and the various methods available.
- CO5** Visualize and analyze the impact of latest marketing trends for organizational effectiveness.

Course Code: 20MSP10

Course Name: Financial Management

- CO1** Describe and organize the financial environment within which organizations must operate.
- CO2** Critically evaluate and justify the financial objectives of various types of organizations and the respective requirements of stakeholders.
- CO3** Analyze the alternative sources of finance and investment opportunities and point out the suitability in particular circumstances.
- CO4** Access and analyze the factors affecting investment decisions and opportunities presented to an organization.
- CO5** Select and apply techniques in managing working capital.

Course Code: 20MSP11**Course Name: Human Resources Management**

- CO1** Understand and analyze the principles and functions of HRM and the latest trends.
- CO2** Understand and demonstrate the process of manpower Planning.
- CO3** Analyze the process of training & development and career planning
- CO4** Visualize and analyze the compensation practices in Indian organizations.
- CO5** Understand and analyze the industrial relations issues and its impact on the organization.

Course Code: 20MSP12**Course Name: Quantitative Techniques**

- CO1** Ability to formulate a model for real life situation using linear programming
- CO2** Resolve Transportation and Assignment problems.
- CO3** Analyze the network problems and understand various mathematical applications in business using queuing theory.
- CO4** Know the suitable amounts of stock are maintained by a business using the inventory technique and able to meet customer demand without delay.
- CO5** Ability makes simulation modeling to solve real-world problems safely and efficiently.

Course Code: 20MSP13**Course Name: Business Research Methods**

- CO1** Understand and analyze the business research process and its application in managerial decision-making situations.
- CO2** Understand and analyze the various scaling techniques applied in research.
- CO3** Visualize and demonstrate the skill of selecting the appropriate sampling frame work, data collection tools and data processing for the research.
- CO4** Demonstrate the skill of analyzing the data collected through primary or secondary sources for their research work.
- CO5** Interpret and prepare different types of research report according to the need for their managerial decisions.

Course Code: 20MSP14**Course Name: Practical-Business Application Lab - II**

- CO1** Conceptualize the features and functions of sorting and filtering in Excel.
- CO2** Understand the process of creating the data in charts and formatting the musing Excel.

- CO3** Perform effective usage of If statements in Excel.
- CO4** Understand the application of Pivot tables in Excel and its application in management decision making.
- CO5** Understand the application of macros in Excel and its application in management decision making.

Course Code: 20job03

Course Name: Communication Practice - II

- CO1** Familiarize with various types of Non-verbal communication and apply them effectively.
- CO2** Adopt the various dimensions of communication.
- CO3** Develop the written communication skills effectively and apply them appropriately.
- CO4** Master the art of conducting and giving interviews for improving the efficiency.
- CO5** Master the technical and non-technical presentation for improving your personality.

Course Code: 20JOB04

Course Name: Rural Innovation Project

- CO1** Understand the present trend of rural market.
- CO2** Understand the problems and solve issues in rural market.
- CO3** Familiarizing the rural terrain.
- CO4** Supporting the rural population for their efforts.
- CO5** Providing solution through innovation to strengthen the rural markets.

SEMESTER III

Course Code: 19 MSP15

Course Name: Business Environment and Ethics

- CO1** Understand the business environment and the factors affecting it.
- CO2** Understand the concepts of business ethics and demonstrate the knowledge in ethics to make ethical decisions in the organizations.
- CO3** Understand globalization of world economy and the different trading system evolved, practiced.
- CO4** Understand the process of FDI and functions of foreign exchange market.
- CO5** Analyze the principle of international business and the strategies adopted by firms to expand globally.

Course Code: 19MSP16**Course Name: Management Information System**

- CO1** Understand the role of Management Information Systems in achieving business competitive advantage.
- CO2** Analyze and synthesize business information and systems to facilitate evaluation of strategic alternatives.
- CO3** Effectively communicate strategic alternatives to facilitate decision making.
- CO4** Manage wireless technology in an organization.
- CO5** Maintain security in Information Systems.

Course Code: 19MSP19F**Course Name: Electronic Commerce**

- CO1** Understand the basic concepts and technologies used in the field of e-commerce.
- CO2** Have the knowledge of Cloud Computing in e-commerce.
- CO3** Understand the processes of development of Electronic payment system.
- CO4** Understand the ethical, social, and security issues of information systems.
- CO5** Gain all knowledge about Web page creation and M commerce.

Course Code: 19MSP20F**Course Name: Systems Analysis and Design**

- CO1** Understand the terminology of systems analysis and design.
- CO2** Apply the problem-solving methods in systems development.
- CO3** Demonstrate and develop methodologies, standards, and System Development Life Cycle.
- CO4** Be aware of the systems analysis project with E-R Models and develop a project.
- CO5** Understand the system implementation.

Course Code: 19MSPED**Course Name: Innovation Management**

- CO1** Systematically integrate knowledge and understanding of different aspects of innovation, and its role in business and society.
- CO2** Apply innovation-related theories in different settings in order to generate new approaches to innovation.
- CO3** Design and develop strategies for new product development.
- CO4** Identify, evaluate and suggests solutions to challenges in large and small organizations relating to innovative performance
- CO5** Make students apply the learning in real world situations.

Course Code: 19MSPEDA**Course Name: Entrepreneurship Development**

- CO1** Visualise the concept of entrepreneurship and the entrepreneurship development programme in India.
- CO2** Differentiate between an entrepreneur and an Intraprenuer and their roles.
- CO3** Understand the different traits of an entrepreneur and nurture to build them.
- CO4** To analyse Institutional Support of Entrepreneurship development.
- CO5** Identify the Government schemes for the entrepreneur.

Course Code: 19MSPFIA**Course Name: Financial and Insurance Services**

- CO1** Analyze the role of Merchant Bankers, SEBI, NBFC and Mutual funds and other financial markets in India
- CO2** Visualize the various fund based financial services
- CO3** Visualize the various fee based financial services
- CO4** Have the basic knowledge about the Indian Insurance Industry.
- CO5** Evaluate and Invest in Life Insurance and Health Insurance General Insurance.

Course Code: 19MSPFIB**Course Name: Equity Research and Portfolio Management**

- CO1** Understand the various alternatives available for investment.
- CO2** Learn to measure risk and return.
- CO3** Understand and perform the macroeconomic, industry, fundamental and technical analysis
- CO4** Learn to value the bonds and stocks
- CO5** Develop a portfolio of stocks and perform portfolio analysis

Course Code: 19MSPHA**Course Name: Hospital Operations Management**

- CO1** Understand the basic operations in the Hospital.
- CO2** Understand the various laboratory services in Hospital.
- CO3** Understand the concept of Quality in Hospital and the process of getting certification.
- CO4** To have practical insight into the various supporting services of hospitals.
- CO5** To understand the various facility management requirements in hospitals.

Course Code: 19MSPHCA**Course Name: Hospital Architecture Planning & Design**

- CO1** Design and Plan a hospital infrastructure.
- CO2** Understand the various processes in Project Management and formulation of projects.
- CO3** Use various tools and techniques to prepare a project report.
- CO4** To have practical insight in to the process of organizing a project.
- CO5** To plan and execute a project effectively.

Course Code: 19MSPHRA**Course Name: Talent Management**

- CO1** Visualize the role of the HR professional as a talent management function.
- CO2** Explore the various approaches to implement best practices of talent management within an organization.
- CO3** Confidently design and plan the talent management system to acquire people.
- CO4** Have the skills in the process of engaging, retaining and compensating in talent management.
- CO5** Analyze the role of information technology (IT) on talent management to overcome the various issues faced in the organization.

Course Code: 19MSPHRB**Course Name: Personal And Interpersonal Effectiveness**

- CO1** Understand various dimensions of self and its importance with exercises.
- CO2** Make students conversed with interpersonal relationships and can analyze the cultural differences in interpersonal communication.
- CO3** Understand the importance of assertiveness and apply it in organizational life
- CO4** Analyze various transactions in day to day life and apply in organizational decision making process
- CO5** Acquire the skills of counselling.

Course Code: 19MSPLMA**Course Name: Logistics Management**

- CO1** Be able to understand the concept of logistics and the organization needed for the supply chain process.

- CO2** Be able to plan the inventory, storage systems and the material handling systems for the supply chain.
- CO3** Be familiar with the various containers for moving goods and the importance of intermediaries in the logistics system
- CO4** Be familiar with the various transportation modes and planning the appropriate mode of transportation for the logistics system.
- CO5** Be able to understand the impact of technology on the logistics system and the global logistics system.

Course Code: 19MSPLMB

Course Name: Export Import Trade and Documentation

- CO1** Understand the basic concepts of exports and imports in international trade.
- CO2** Understand the various steps in export process.
- CO3** Get familiarized with the procedure of importing goods and services.
- CO4** Acquainted with the process of documentation in international business.
- CO5** Understand the EXIM policy framework in local, regional and global context and apply its provisions.

Course Code: 19MSPMEA

Course Name: Mass Communication

- CO1** Have the basic knowledge in Mass Communication and its influence.
- CO2** Understand the basics of print Media and its evolution.
- CO3** Understand the basics of broadcast Media, its evolution and the process of developing.
- CO4** Visualize the impact of IT and the developments in Digital Marketing sphere.
- CO5** To prepare socially responsible media academicians, researchers and professionals.

Course Code: 19MSPMEB

Course Name: Journalism

- CO1** Visualize the nature and functions of Journalism and the different kinds of journalism evolved.
- CO2** Analyze the role of press in India.
- CO3** Understand the different types of magazine journals and its importance.
- CO4** Understand the medium of photo journalism and its importance.

CO5 Understand the basics of digital journalism and latest trends in journalism.

Course Code: 19MSPMMA

Course Name: Customer Relationship Management

CO1 Understand the fundamentals of customer relationship management.

CO2 Visualise the behaviour of the customer and plan the CRM activities.

CO3 Develop a CRM process and implement the same.

CO4 Visualise the impact of information technology in CRM process.

CO5 Analyze e-CRM and its application in creating a e-business strategy.

Course Code: 19MSPMMB

Course Name: Integrated Marketing Communication

CO1 Acquire the basic knowledge in integrated marketing communication.

CO2 Understand and analyze the various elements of communication process and their application as a promotion tool.

CO3 Understand the process of planning & developing promotion strategies and promotion campaigns.

CO4 Correlate the importance of communication process in building and promoting a brand.

CO5 Visualize the impact of information technology and the latest trends in using it for communication process.

Course Code: 19MSPPNA

Course Name: Innovation and Technology Management

CO1 Update knowledge on technological changes and innovative business solutions for firm's sustainable development.

CO2 Analyze the technology management challenges and provide solutions to manage technology in turbulent environment.

CO3 Apply critical thinking and employ problem solving approach to mitigate the hindrances in innovation and technology management.

CO4 Examine the role of innovation in organizational process and ensure innovation works as a core competency in technology management.

CO5 Display the breadth of skills changing the landscape of organizational success with highly recognized innovative practices to manage technology adoption.

Course Code: 19MSPPNB

Course Name: Lean and Agile Manufacturing Systems

- CO1** Understand the key requirements and concepts of lean manufacturing.
- CO2** Apply the tools in lean manufacturing to analyses a manufacturing system and plan for its improvements.
- CO3** Appreciate the significance of lean culture to initiate a continuous improvement change program in a manufacturing organization.
- CO4** Gain global knowledge on agile systems and determine the methodologies of introducing agile and scrum system in an organization.
- CO5** Critically evaluate and implement agile processes and scrums for designated projects and review in an organization with an eye for improvement.

Course Code: 19MSPTTA

Course Name: Tourism Management

- CO1** Visualize the concept tourism - both domestic and international.
- CO2** Plan and organize tourism to various destination
- CO3** Have the knowledge on various tourism organization both national and international
- CO4** Understand the different tourism products
- CO5** Gain knowledge and appreciate the heritage of Tamilnadu

Course Code: 19MSPTTB

Course Name: Tourism Marketing

- CO1** Understand the tourism marketing concepts and its evolution in current scenario
- CO2** Describe and explain tourist behavior through their new knowledge of leisure psychology
- CO3** Become familiar with the marketing mix and be able to formulate the best mix for a particular travel product
- CO4** Understand and conceptualize the skills needed for the Tourism industry.
- CO5** Enable the students to get along with the current trends in tourism marketing both local and international

SEMESTER IV

Course Code: 19MSP22

Course Name: Strategic Management

- CO1** Analyze the strategic decisions that organizations make and have an ability to engage in strategic planning
- CO2** Analyze and assess the industry and environment factors influencing the strategic planning process.
- CO3** Analyze the basic concepts, principles and practices associated with strategy formulation.
- CO4** Evaluate, plan and evaluate the organizational strategic decision in order to achieve the organizational goals
- CO5** Integrate and apply knowledge in formulation and implementation of strategy from a holistic and multi-functional perspective.

Course Code: 19MSPLMC

Course Name: Supply Chain Management

- CO1** Understand the concept of SCM and its strategic importance.
- CO2** Understand the various processes in SCM for improving distribution network in organizational performance.
- CO3** Design a production planning process in achieving competitive advantage.
- CO4** To have practical insight in to the various aspects of inventory in logistics function.
- CO5** To understand the application of IT in SCM process.

Course Code: 19MSPEDC

Course Name: Social Entrepreneurship

- CO1** Differentiate social entrepreneurship from business Entrepreneurship and Identify areas of our economy/society where social entrepreneurs work.
- CO2** Visualise how social entrepreneurship can contribute to whole systems.
- CO3** Understand the financial issues for an entrepreneur in general and social entrepreneur in particular.
- CO4** Analyze the social marketing environment.
- CO5** Understand the nature of corporate social responsibility in creating social value in developing business in India and abroad.

Course Code: 19MSPEDD**Course Name: Small Business Management**

- CO1** Visualize the importance and role of small businesses and its advantages and disadvantages.
- CO2** Identify the Dynamics of Small Business (i.e.) Concepts and Definitions of Small-Scale Industries (SSIs), Government Policy and Development of SSIs
- CO3** Understand the institutional support to the development of small businesses and be prepared for interacting with them.
- CO4** Face the challenges of the small businesses.
- CO5** Identifying the Global Opportunities for Small Business

Course Code: 19MSPFIC**Course Name: International Financial Management**

- CO1** Analyze International Financial Management Environment
- CO2** Evaluate the Currency forecasting and Manage foreign exchange risk
- CO3** Analysis of Foreign Investment Decision.
- CO4** Learn Multinational Cash management.
- CO5** Perform Foreign Exchange Operations.

Course Code: 19MSPFID**Course Name: Banking Regulations and Services**

- CO1** Analyze Structural framework-Indian Banking System.
- CO2** Evaluate the Banking services provided by the banks.
- CO3** Learn the Regulatory framework related to Banking Regulations
- CO4** Apply the Marketing of banking services
- CO5** Apply of Technology in Banking

Course Code: 19MSPHCC**Course Name: International Health Management**

- CO1** Understand the International health care scenario.
- CO2** Have knowledge about the reforms in the health care sector with an international perspective.
- CO3** Understand a health care delivery system.

CO4 Appreciate the importance of IPR and its relevance to the health care sector.

CO5 Understand the International health care policies for the betterment of health care.

Course Code: 19MSPHCD

Course Name: Public Health Systems and Health Insurance

CO1 Understand the process of the Public health system.

CO2 Understand the reforms in the Health sector and its financial implications.

CO3 Understand the planning and budgeting of the health sector.

CO4 Have practical insight into risk management and insurance in general.

CO5 Understand the Health Insurance system and the risk coverage.

Course Code: 19MSPHRC

Course Name: Organization Development

CO1 Demonstrate the philosophical, historical, theoretical, political and practical underpinnings of OD as a core area of practice within HRD.

CO2 Gain an insight into the organizational development programmes and the components of OD.

CO3 Increase awareness of different tools that are used to diagnose organizations as well as interventions used through hands-on experience.

CO4 Demonstrate how to evaluate organizational development interventions and the use of technology.

CO5 Enhance their skills in the latest trends in OD.

Course Code: 19MSPHRD

Course Name: Industrial Relations and Labour Legislations

CO1 Understand the industrial relation systems in India and as well as at International level

CO2 Have adequate knowledge of acts relating to trade union and dispute management and apply it in corporate life

CO3 Utilize provisions regarding social welfare measures in their workplace.

CO4 Employ the law regarding the wages when faced with issues relating to it

CO5 Get acquainted with factories act and other laws pertaining to women and children

Course Code: 19MSPLMD

Course Name: International Logistics & Shipping Management

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|------------|-----------------------------------------------------------------------------------------------------------------------------------|
| CO1 | Identify and evaluate the elements of an international logistics system |
| CO2 | Understand the relationships between international logistics management, the international business environment |
| CO3 | Recognize the complexity of the elements in international logistics system and how they are related to organizational performance |
| CO4 | Learn the current issues for the design and evaluation of an international logistics system |
| CO5 | Analysis the elements of an international logistics system should be integrated and coordinated in the most cost-effective manner |

Course Code: 19MSPMEC

Course Name: Media Management and Public Relations

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|------------|---------------------------------------------------------------------------------|
| CO1 | Understand the basics of Media Planning and its Metrics. |
| CO2 | Visualize the components of Media Mix and its planning. |
| CO3 | Plan and implement a Media Plan. |
| CO4 | Understand the concept of PR and its importance to Media. |
| CO5 | Evaluate the Media Management, PR strategy and planning through the objectives. |

Course Code: 19MSPMED

Course Name: Media Law and Ethics

- | | |
|------------|------------------------------------------------------------------------------------|
| CO1 | Examine media law and ethics pertaining to media. |
| CO2 | Understand the media acts and principles to the professional settings. |
| CO3 | Analyse various laws relating to Patent Rights |
| CO4 | Comprehend various Media Law relating to women and broadcast media. |
| CO5 | Differentiate Ethics Vs Law and understand the various regulatory bodies in India. |

Course Code: 19MSPMMC

Course Name: Brand Management

- | | |
|------------|-----------------------------------------------------------------------------------------------------------|
| CO1 | Understand the key principles and elements of branding. |
| CO2 | Practically develop a brand, including positioning and communications. |
| CO3 | Develop the process and methods of brand management, including how to establish brand image and identity. |

- CO4** Analyze the effective branding strategies, brand extension programs and new product development.
- CO5** Formulate and justify brand valuation and develop building brands.

Course Code: 19MSPMMDD

Course Name: Retail Management

- CO1** Conceptualize the fundamentals of retail management.
- CO2** Visualize the consumer shopping behaviour and retail market segments in India.
- CO3** Differentiate the retail formats and analyze the role of MNC's in organized retailing.
- CO4** Develop retail location and plan the retail operation.
- CO5** Plan good retail store design and analyze the impact of electronic commerce in retailing.

Course Code: 19MSPPPNC

Course Name: Total Quality Management

- CO1** Understand the concept of TQM and its importance in an organization
- CO2** Understand the tools of TQM and use it improving organizational performance.
- CO3** Apply quantitative techniques for managerial decision-making process for achieving total quality.
- CO4** To apply the SQC principles for operational excellence of the organization.
- CO5** Have practical insights into organisational issues relating to implementation of ISO.

Course Code: 19MSPPND

Course Name: Logistics & Supply Chain Management

- CO1** Understand the structure of supply chains and its importance in the competitive market.
- CO2** Will be able to design an effective supply chain network
- CO3** Understand the components of the Logistics system.
- CO4** Understand the role of various intermediaries in the logistics system
- CO5** An understanding on the importance of the global logistics system in today's context.

Course Code: 19MSPSYCBN

Course Name: Enterprise Resource Planning

- CO1** Analyze ERP its role in integrating business functions
- CO2** Analyze the strategic options for ERP identification and adoption.

- CO3** Design the ERP implementation strategies.
- CO4** Create reengineered business processes for successful ERP implementation.
- CO5** Gain all knowledge about ERP Software and its new trends.

Course Code: 19MSPSYD

Course Name: Business Analytics

- CO1** Visualise the basic concepts of business intelligence.
- CO2** Have the knowledge of the business analytical strategy.
- CO3** Understand the technologies with emphasis on data mining.
- CO4** Have practical insight in to the various aspects of tools and services to the development of data warehousing.
- CO5** Gain all knowledge about various Business Intelligence Architectures and its new trends.

Course Code: 19MSPTTC

Course Name: Event Management

- CO1** Understand the concept and typology of events
- CO2** Understand the techniques and strategies required to plan successful events
- CO3** Acquire skills regarding preparation of budget, apply and evaluate the proposal.
- CO4** Select location and design an event
- CO5** Plan and execute the logistics for an event.

Course Code: 19MSPTTD

Course Name: Travel Agency and Tour Operation

- CO1** Understand the growth and prospects of travel agency and tour operator trade.
- CO2** Know the rules and regulations of the govt to set up travel agency and tour operation business.
- CO3** Be confident in planning the tour itinerary.
- CO4** Application of domain knowledge in tour packaging and pricing of it.
- CO5** Knowledge about the various trade associations involved in the tourism industry and their support in the development of the travel and tour operations across the globe.

PROGRAMME NAME: M.Sc. (Biotechnology)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO 1	To produce Biotechnologists who will be employable in core Biotech/ Pharmaceutical industries, domain-based software services, academic/ Industry sponsored research/ Entrepreneurs
PEO 2	To demonstrate professional and ethical attitude with awareness of major issues at the forefront of the discipline and think about the social entailment of their work, especially its impact on safety, health and environment for sustainable development.
PEO 3	To exhibit strong, independent learning, analytical, problem solving skills, and ability to work in teams and provide opportunity to manage and work on multidisciplinary projects.
PEO 4	To enrich the global think-tank with right mixes of innovative ability, existing policies at generating and safeguarding the product of their intellect, equipped with entrepreneurship abilities contributing to self and national development

PROGRAMME OUTCOMES

PO1	Understand and comprehend the fundamental and advanced knowledge on various domains of Biotechnology.
PO2	Develop an independent thinking ability, design and conduct experiments as well as to analyze and interpret scientific data.
PO3	Understanding of professional and ethical responsibility
PO4	Equip the students with the laboratory skills in biotechnology and usage of modern tools for promoting life science research
PO5	Ability to communicate effectively and promote team working ability
PO6	Awareness of the impact of bio-solutions in a global, economic, environmental, and societal context
PO7	Facilitate to assimilate technologies through an inter-disciplinary learning habit

COURSE OUTCOMES

SEMESTER I

Course Code: 20BTP01

Course Name: Cell and Molecular Biology

- CO1** Describe the knowledge of cell structures, functions, cellular organelles and various metabolic processes which will help students to design experiments with appropriate understanding and leads to conduct genuine research.
- CO2** Understand and discuss the properties and biological significance of the major classes of molecules found in living organisms and the relationship between molecular structure and biological function.
- CO3** Apply the structural organization of genes for control of gene expression, replication and photosynthesis.
- CO4** Represent and illustrate the processes that control eukaryotic cell cycle and cell death, link the rapid advances in cell and molecular biology to a better understanding of diseases.

Course Code: 20BTP02

Course Name: Applied Microbiology

- CO1** Explain scope and techniques of microbiology, microbial based product and its application in various fields
- CO2** Understand various techniques involved in pharmaceutical microbiology, its products and characterizations
- CO3** Apply the various roles of microorganism in waste water and drinking water, fuel cells, biodegradation and food industry
- CO4** Analyse the appropriate roles in medicine and human health with appropriate knowledge in pathogen and human interactions and their significance

Course Code: 20BTP03

Course Name: Biochemistry

- CO1** Acquire knowledge on the building blocks of the macromolecules, their chemical properties, modification and their importance in normal functioning of living organisms.
- CO2** Understand various biochemical reactions- thermodynamics - energy production through biochemical process responsible for the manifestation of life disease and metabolic errors.
- CO3** Apply the metabolic pathways, identify how the genetic abnormalities disturb the normal homeostasis and link with pathological conditions
- CO4** Analyse the various applications of biochemistry in medicine, agriculture and pharmaceuticals

Course Code: 20BTP04A**Course Name: Elective I: Plant and Animal System Physiology**

- CO1** Remember about biosynthesis of secondary metabolite, biotic and abiotic stress.
- CO2** Understand about blood and cardiovascular system with their anatomy, specialized tissues.
- CO3** Apply the anatomy, structure and function of lungs, Nervous system and sense organs.
- CO4** Analyse the inventory thoughts on Excretory system, endocrinology and reproduction in regulation of body

Course Code: 20BTP04B**Course Name: Elective I: Occupational Health and Industrial Safety**

- CO1** Know how to identify hazards in the home or workplace that poses a danger or threat to safety, health and others.
- CO2** Understand the various occupational health hazards, diseases and propose methods to eliminate the hazard
- CO3** Apply and discuss the role of health and safety guidelines in the workplace pertaining to the responsibilities of workers, managers, supervisors and explain a comprehension of the changes created by WHMIS legislation in everyday life.
- CO4** Analyse and create a decisive making skill required to maintain protection of the environment, home and workplace as well as personal health and safety.

Course Code: 20BTP05**Course Name: Practical I - Cell and Molecular Biology**

- CO1** Observe to know basic Concept principle and application of cell and molecular biology
- CO2** Understand the cells of various living organisms and get awareness of physiological processes of cell e.g. cell divisions.
- CO3** Identify different cell types, cellular structures using different microscopic techniques.
- CO4** Analyse and execute a laboratory experiment using the standard methods and techniques in molecular biology

Course Code: 20BTP06**Course Name: Practical II–Applied Microbiology**

- CO1** Understand the microscopic techniques and methods for laboratory management and handling

- CO2** Standardise the protocol for the isolation of microbes from various sources and staining methods
- CO3** Apply and conduct biochemical tests to identify various pathogenic organisms for environmental pollution monitoring
- CO4** Analyse various diagnoses test for human pathogen upon culturing and assessing from human sample

Course Code:20BTP07

Course Name: Practical III–Biochemistry

- CO1** Know the importance of Biomolecules in Living organisms
- CO2** Understand a protocol for the isolation of microbes and staining methods
- CO3** Apply the analytical quality solutions, buffers and dilution series and know it calibration, understand principles of calibration.
- CO4** Analyse and select and optimize media for maximum production of microbial metabolites.

SEMESTER II

Course Code:20BTP08

Course Name: Genetic Engineering

- CO1** Remember the structure of gene and genome organization and expression in prokaryotes and eukaryotes.
- CO2** Understand the types and functions of enzymes in genetic engineering
- CO3** Apply the knowledge of plant and animal vectors as a tool in genetic engineering.
- CO4** Analyse and explore about advanced molecular techniques in biotechnology.

Course Code: 20BTP09

Course Name: Research Methodology and Biostatistics

- CO1** Know the research, collection of data's, data characteristics, and thesis writing
- CO2** Understand the exact method of data analysis for the problem under investigation - about publication of manuscript- databases, journal information and impact factor
- CO3** Apply know-how to use and interpret results of descriptive statistical methods
- CO4** Analyse the principal methods of statistical interference and design for effective use in analysing biotechnological results

Course Code: 20BTP10**Course Name: Bioprocess Technology**

- CO1** Remember the fermentation and usage of microorganisms in the production of fermented products.
- CO2** Understand and explore various media and its compositions for fermentation with various microbes and sterilization process
- CO3** Apply and evaluate and design the features and the instrumentation and control of bioreactors and types and modes of fermentation operations and kinetics
- CO4** Analyse and elucidate the downstream processing in the product recovery

Course Code: 20BTP11A**Course Name: Elective II: Bioethics, Biosafety and IPR**

- CO1** Remember the rationale for and against IPR and especially patents
- CO2** Understand to why India has adopted an IPR Policy and be familiar with broad outline of patent regulations
- CO3** Apply and create a different types of intellectual property rights in general and protection of products derived from biotechnology research and issues related to application and obtaining patents
- CO4** Analyse the biosafety and risk assessment of products derived from recombinant DNA research and environmental release of genetically modified organisms, national and international regulations

Course Code: 20BTP11B**Course Name: Elective II: Genomics and Proteomics**

- CO1** Remember and explain the importance of bioinformatics in systems biology
- CO2** Understand and discuss the use of genes and genomes data in systems biology
- CO3** Apply and integrate the omics data for networking
- CO4** Analyse the appropriate tools in systems biology for modelling

Course Code: 20BTP11C**Course Name: Molecular Diagnostics and Clinical Testing**

- CO1** Know the rationale molecular diagnostics with reference to clinical diagnostics
- CO2** Understand the DNA based molecular diagnostics with reference to sequencing using PCR
- CO3** Apply and elucidate different types of Proteomic analysis and characterization
- CO4** Analyse and gain applied knowledge on types of molecular diseases and its diagnostics

Course Code: 20BTP12**Course Name: Practical IV -Genetic Engineering**

- CO1** Remember the basic of rDNA technology, Concept and principle and application of genetic engineering.
- CO2** Understand and observe Gel electrophoresis and detailed mechanism and explore different aspects of learning
- CO3** Apply and explain principles, material and methodology of techniques involved in rDNA technology, blotting techniques, sequencing methods, PCR. DNA fingerprinting and Reporter gene assays
- CO4** Analyse independently execute a laboratory experiment using the standard methods and techniques in molecular biology, with the appropriate analysis and interpretation of results obtained.

Course Code: 20BTP13**Course Name: Practical IV -Bioprocess Technology**

- CO1** Remember basic of fermentation technology, Concept, principle and application of bioprocesses technology.
- CO2** Understand Fermentor and working principles and mechanism and importance
- CO3** Apply principles, material and methodology of citric Acid Production, enzyme production, wine production, antibiotic Production. Isolation and secondary screening of industrially
- CO4** Analyse independently execute the isolation and secondary screening of industrially important microbes in fermentation technology field.

Course Code: 20BTP14**Course Name: Self-supportive course: Biodiversity and Conservation Biology**

- CO1** Remember the basic biodiversity and their distribution in Western Ghats.
- CO2** Understand the decreases of animal diversity and species extinction.
- CO3** Apply about conservation biology by In-situ and Ex-situ tools.
- CO4** Analyse and solve biological problems, by laws and policy in India. And to understand about role of different organization in conservation.

SEMESTER III**Course Code: 19BTP16****Course Name: Immunology And Immunotechnology**

- CO1** Enable the students to understand about the cell and organs of the immune system and their role in rendering cellular immunity

CO2

Make the students to know about the structure of immunoglobulin, their classification and theories of clonal selection; to make them aware of underlying principles of antigen antibody interactions

CO3

Discuss immunological techniques and their applications in biotechnical industry.

CO4

Evaluate and assess current and evolving concepts in immunological developments including immunotechnology, immunotherapy (cancer and stem cell) and immunoprophylaxis.

Course Code: 19BTP17

Course Name: Animal and Pharmaceutical Biotechnology

CO1

Describe Animal cell culture, growth medium, requirements, contamination and decontamination and preservation

CO2

Define cell line characterization, cytotoxicity, stem cell biology and tissue engineering

CO3

Formulate scientific questions about drug discovery and drug development and their metabolism

CO4

Apply the manufacturing principles quality assurance and quality control methodology in drug development

Course Code: 19BTP18

Course Name: Plant Biotechnology

CO1

Illustrate the conventional methods of plant breeding and basic techniques of various cultures

CO2

Explain the various methods for hybrid production and role of molecular markers in plant breeding

CO3

Describe the genome of important plant organelles and their expression, methods for obtaining genetically modified plants

CO4

Demonstrate critical knowledge in problem solving with a context of biotechnological production of secondary metabolites and recombinant product using plant tissue culture technology

Course Code: 19BTP19A

Course Name: Elective III Developmental Biology and Behavioral Studies

CO1

Demonstrate the basic concept and various stage of embryogenesis and morphogenesis of plant cells

CO2

Assess the detailed mechanism involved during morphogenesis and organogenesis of animal cell

- CO3** Compare various theories for evolution and origin of cells
- CO4** Outline the basic concept of brain and behaviour relationship among various animal

Course Code: 19BTP19B

Course Name: Elective III Biotechniques

- CO1** Describe principle and application of electrophoresis and blotting
- CO2** Explain the applications of different spectroscopic techniques in biology
- CO3** Discuss applications of chromatographic techniques in biology. Principles and applications of microscopy
- CO4** Define the nature and types of radiations and their application in structural and functional analysis of biological samples

Course Code: 19BTP21

Course Name: Practical VI – Immunology and Immunotechnology

- CO1** Provide hands on for blood film preparation, identification of blood cells, human blood grouping
- CO2** Able to perform immunological techniques, double diffusion, radial Immunodiffusion, widal test, ELISA, western blotting, rocket immunoelectrophoresis
- CO3** Assess molecular detection of infectious proteins by blotting techniques
- CO4** Analyze the components of human sera by performing agarose and polyacrylamide gel electrophoresis

Course Code: 19BTP22

Course Name: Practical VII – Animal and Pharmaceutical Biotechnology

- CO1** Utilize the foundational knowledge of cell culture techniques and competence in laboratory techniques
- CO2** Assess the protocol for various basic animal tissue culture experiments
- CO3** Identify more insight information about various pharmaceutical testing
- CO4** Plan the gained knowledge to take up animal pharmaceutical based biological research as well as placement in the relevant biotech industry

Course Code: 19BTP23
Biotechnology

Course Name: Practical VIII – Plant

- CO1** Demonstrate the knowledge about the Lab organization & measures adopted for aseptic manipulation and nutritional requirements of cultured tissues.

- CO2** Formulate the protocol for media preparation, explant sterilization and apply knowledge for large scale clonal propagation of plants through various micro propagation techniques
- CO3** Acquaint with principles, technical requirement, scientific and commercial applications in Plant Biotechnology
- CO4** Design a set goals towards pursuing higher level positions like lab manager and key scientist in plant biotechnological research institutes and industries

SEMESTER IV

Course Code: 19BTP24

Course Name: Environmental Biotechnology and Bionanotechnology

- CO1** Describe various pollutions and its impacts on environment and living being and identify the solution to these pollution-based problems
- CO2** Evaluate the different methods and measurement of environmental pollution, Xenobiotic biodegradation and Herbicide Degradation
- CO3** Identify, define and apply the concepts of solid waste management for various industrial wastes and methods of treatment
- CO4** Prepare a protocol for nanoparticle synthesis and analyze the structure, function and their various applications

Course Code: 19BTP25

Course Name: Practical IX – Environmental Biotechnology and Bionanotechnology

- CO1** Recall to design and execute experimental protocol for physico-chemical properties wastewater
- CO2** Explain the isolation method for microbial population in polluted environment
- CO3** Examine the potability water using qualitative and quantitative analysis
- CO4** Investigate the green synthesis and characterization of nanoparticles Asses the phenomena of nanotechnology in bioremediation of industrial waste waters.

PROGRAMME NAME: M.Sc. (Microbiology)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO 1	Articulate the knowledge of Science to identify, apply modern tools, and analyze the societal, health, safety, legal, and cultural issues and the consequent responsibilities relevant to the Profession.
PEO 2	Apply ethical principles and commit to professional ethics, communicate effectively and recognize the need for life-long learning in the broadest context of technological change

PROGRAMME OUTCOMES

PO 1	To acquire the appropriate skills of Microbiology so as to perform their duties as Microbiologists.
PO 2	Students will be able to analyze the problems related to Microbiology and come up with most suitable solutions.
PO 3	The graduates in Microbiology develop awareness which is mandatory for practicing scientific areas including ethics of working in a laboratory, environmental sustainability and ethics followed for scientific publishing of their research work in future.
PO4	Helps the students to use modern tools that will help them acquire interdisciplinary skills.
PO5	The students in post graduate Microbiology develop excellent communication skills and are able to work in teams.
PO6	Recognize the need for life-long learning in the broadest context of technological change.
PO7	Ability to generate new knowledge, innovate and analyze data collected through study and small projects.

COURSE OUTCOMES

Semester I

Course code : 20MBP01

Course Name : Bacteriology

- | | |
|-----|---------------------------------------------------------|
| CO1 | Justify the history of Microbiology and cell structures |
| CO2 | Order the taxonomical classification of bacteria |

- CO3** Summarize the nutritional requirements for bacterial growth
- CO4** Find and analyze microbial biosynthetic pathways and cell signaling

Course code : 20MBP02

Course Name : Virology

- CO1** Determine taxonomical classification and discriminate the architecture of viruses
- CO2** Distinguish the various structure and replication of bacterial viruses
- CO3** Summarize the life cycle of plant viruses to learn pathogenesis
- CO4** Evaluate animal viruses and viral diagnostic methods

Course code : 20MBP03

Course Name : Mycology, Phycology and Parasitology

- CO1** Compare fungal structure, ecosystem and classification
- CO2** Summarize the ecology and classification of algae
- CO3** Order the lifecycle of protozoa
- CO4** Evaluate the economic importance of algae, fungi and protozoa

Course code : 20MBP04

Course Name : Biochemistry

- CO1** Reframe the structure of macromolecules and their properties
- CO2** Assess the metabolic pathways and their disorders
- CO3** Summarize the properties, physiological functions and deficiency of vitamins and minerals
- CO4** Compare the methods of purification of enzymes

Course code : 20MBP05

Course Name : Practical I – Bacteriology, Virology, Mycology, Phycology and Parasitology

- CO1** Test microorganisms from soil.
- CO2** Assess microscopy to observe microorganisms and determine growth curve.
- CO3** Estimate the biochemical characterization of bacteria.
- CO4** Find the morphology of algae and protozoa and evaluate anaerobic cultivation methods.

Course code : 20MBP06

Course Name : Practical II – Biochemistry

- CO1** Estimate the methods of macromolecules quantitatively

- CO2** Measure the immobilization of microbial cells
- CO3** Evaluate the separation of macromolecules
- CO4** Distinguish the techniques for protein separation and purification

Semester II

Course code : 20MBP07

Course Name : Applied Biotechniques

- CO1** Estimate the principle and applications of Microscopy and Spectroscopy
- CO2** Summarize the types of Centrifugation & Chromatography
- CO3** Compare the methods of electrophoresis and radio isotopes
- CO4** Evaluate the gene transfer and r DNA techniques

Course code : 20MBP08

Course Name : Immunobiology

- CO1** Distinguish immune system and its response and immunization
- CO2** Compare the types of antigen, antibody and complement pathways
- CO3** Grade hypersensitivity, transplantation immunology and immunodeficiency diseases
- CO4** Appraise antigen processing, presentation and Immunotechniques

Course code : 20MBP09

Course Name : Genetic Engineering

- CO1** Justify the importance of the central dogma of Molecular biology
- CO2** Compare the types of mutations and repair mechanisms
- CO3** Summarize the concepts of genetic recombination
- CO4** Assess the enzymes and vectors in genetic engineering and summarize the applications of transgenic plants and animals

Course code : 20MBP10

Course Name : Medical Microbiology

- CO1** Distinguish the types, sources and methods of transmission of infection
- CO2** Evaluate the pathogenicity and lab diagnosis of Gram positive bacteria

- CO3** Assess the pathogenicity and lab diagnosis of Gram negative organisms
- CO4** Rank the types of fungal infections and summarize the rapid diagnostic tests

Course code : 20MBP11

Course Name : Practical III - Immunobiology and Medical Microbiology

- CO1** Justify the methods to identify pathogens from clinical specimens
- CO2** Estimate the antibiotic sensitivity testing and interpretation
- CO3** Justify with the antigen, antibody reactions by various tests
- CO4** Assess blood cells and assess the efficacy of disinfectants

Course code : 20MBP12

Course Name : Practical IV - Applied Biotechniques and Genetic Engineering

- CO1** Relate the different growth characteristics of bacteria
- CO2** Infer the biochemical characterization of microorganisms
- CO3** Demonstrate, Isolate and quantify chromosomal DNA, Plasmid and RNA
- CO4** Analyze the gene transfer methods

Semester III

Course code : 19MBP13

Course Name : Environmental and Agricultural Microbiology

- CO1** Outline the knowledge on microbiology of air, water and soil
- CO2** Describe techniques to treat soil and liquid waste
- CO3** Illustrate the role of microbes in environment
- CO4** Formulate the various methods in determine the quality of wastewater treatment

Course code : 19MBP14

Course Name : Food and Dairy Microbiology

- CO1** Describe food microflora and food preservation
- CO2** Summarize the fermented food products
- CO3** Illustrate the contamination and spoilage of vegetables, meat and fruits
- CO4** Outline on food borne diseases and quality assurance in food industry.

Course code : 19MBP15

Course Name : Large Scale Manufacturing Practices

- CO1** Describe about fermentation and fermenter types
- CO2** Distinguish upstream and downstream processes
- CO3** Demonstrate fermented products in large scale
- CO4** Categorize commercial products and its uses

Course code : 19MBP16A

Course Name : Pharmaceutical Microbiology

- CO1** Describe about antibiotics and synthetic antimicrobial agents
- CO2** Classify drug development strategies
- CO3** Illustrate the production of few biopharmaceuticals
- CO4** Categorize the regulatory aspects in pharmaceutical industry

Course code : 19MBP16B

Course Name : Microbial Genomics and Proteomics

- CO1** Describe the components of prokaryotic and eukaryotic genomes
- CO2** Classify the tools used in genome sequencing and genome analysis
- CO3** Discover the databases for proteins and nucleic acids
- CO4** Analyze the tools used in recombinant DNA technology

Course code : 19MBP16C

Course Name : Microbial Production of Recombinant Molecules

- CO1** Describe the vector construction and the requirement of recombinant molecule
- CO2** Distinguish the gene expression and promoters and integration of DNA in host
- CO3** Demonstrate the process of mutagenesis and engineered proteins
- CO4** Illustrate on molecular markers and mapping of genome

Course code : 19MBP17

Course Name : Practical V - Food Microbiology and Fermentation Technology

- CO1** Explain the production of organic acid and antibiotics
- CO2** Differentiate the estimation of various enzymes and wine
- CO3** Demonstrate the sterility of food products
- CO4** Analyze the presence of toxins in food

Course code : 19MBP18

Course Name : Practical VI - Recombinant DNA Technology, Environmental And Pharmaceutical Microbiology

- CO1** Identify restriction digestion pattern and preparation of competent cells
- CO2** Distinguish blotting techniques
- CO3** Demonstrate the parameters for water quality
- CO4** Categorize spoilage of pharmaceutical products and bioassay methods

Course code : 19MBP20

Course Name : Bioethics, IPR And Biosafety

- CO1** Describe the ethical values in Microbiological Research
- CO2** Discuss about Patenting in Biological research
- CO3** Apply and use of animal and human specimens for Research
- CO4** Illustrate biosafety in applying genetically modified organisms

Semester IV

Course code : 19MBP21

Course Name : Biostatistics and Research Methodology

- CO1** Define the statistical theory and their probabilistic foundation
- CO2** Explain the basic framework of research process
- CO3** Apply the various research design and techniques
- CO4** Relate and organize data and literature

Course code : 19MBP22A

Course Name : Bioinformatics and Nanotechnology

- CO1** Identify the basic concepts in Bioinformatics
- CO2** Describe databases and to construct phylogenetic trees
- CO3** Demonstrate the alignment methods.
- CO4** Analyze the Synthesis of Nanoparticles

Course code : 19MBP22B

Course Name : Commercial Microbiology

- CO1** Select the ability to establish a mushroom cultivation unit
- CO2** Classify the parameters to the production of Biofertilisers and composting
- CO3** Develop the skills for commercial production
- CO4** Design and formulate the principles of entrepreneurship

Course code : 19MBP22C

Course Name : Total Quality Management

- CO1** Identify, understand the design and applications of Microbiology lab.
- CO2** Describe the maintenance of lab equipment and quality control records
- CO3** Compute biological references and standards
- CO4** Outline good lab practices and first aid procedures

Course code : 19MBP23

Course Name : Practical VII - Biostatistics and Bioinformatics

- CO1** Identify bioinformatics databases and retrieve sequences
- CO2** Discuss statistical methods for biological data
- CO3** Demonstrate primer design and setup PCR cycles
- CO4** Compare prediction results from nucleotide and protein databases

PROGRAMME NAME: M.Sc. (Mathematics)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Have the ability to pursue interdepartmental and intradepartmental research in Universities in India and abroad.
PEO2	Have the caliber to work in foreign Universities and Shine in higher level of administration like IAS, IPS, Officers in Nationalized Banks, LIC, etc.,.
PEO3	Motivate and prepare the students to pursue higher studies and research in Mathematics and Interdisciplinary Sciences, thus contributing to the ever-increasing academic demands of the country.
PEO4	Enrich the students with strong communication and interpersonal skills, broad knowledge and an understanding of multicultural and global perspectives, to work effectively in multidisciplinary teams, both as leaders and team members.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Demonstrate in-depth knowledge of Mathematics, both in theory and application.
PO2	PROBLEM SOLVING AND ANALYSING: Identify, formulate, and analyze the complex problems using the Principles of Mathematics.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Equips students with advanced knowledge and insight in mathematics.
PO4	MODERN TOOL USAGE: Solve critical problems by applying the Mathematical Software Tools.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: Work individually or as a team member or leader in uniform and multidisciplinary settings.
PO6	SELF DIRECTED / LIFE LONG LEARNING: Enhances professional skills in Mathematics and some specialized areas of applied mathematics.
PO7	ENHANCING RESEARCH CULTURE: Apply the Mathematical concepts, in all the fields of learning including higher research, and recognize the need and prepare for lifelong learning.

COURSE OUTCOMES

SEMESTER I

Course Code: 20MAP01**Course Name: Advanced Algebra with Geogebra**

- CO1** Studies the algebraic structures known as groups and the advance ideas in Group theory.
- CO2** Recognize subgroup and the relation of conjugacy with Cauchy's theorem and Sylow's theorem.
- CO3** To relate ring as one of the fundamental algebraic structures used in abstract algebra with Euclidean rings and Polynomial rings.
- CO4** To explain field as a non-trivial division ring and Analyze the Roots of polynomials.

Course Code: 20MAP02**Course Name: Advanced Real Analysis**

- CO1** Acquire the knowledge of Limits and continuity of functions and the Derivatives of Real function with its higher order.
- CO2** Understand the Riemann Stieltjes integral of real valued functions on intervals and its properties.
- CO3** Demonstrate the idea in uniform convergence and differentiation and in uniform convergence and integration.
- CO4** Analyze the structure of the exponential, the logarithmic, the trigonometric, the gamma and beta functions.

Course Code: 20MAP03**Course Name: Ordinary Differential Equations with Scilab**

- CO1** Learn mathematical methods to solve higher order differential equations.
- CO2** Understand the concept of power series solution, special function, existence and uniqueness of solutions of ODE's.
- CO3** To Examine some special functions of Mathematical Physics and it's properties.
- CO4** Infer the knowledge in Non-linear differential equations.

Course Code: 20MAP04**Course Name: Numerical Methods**

- CO1** Learn various tools in solving numerical problems.
- CO2** To understand numerical methods of solving the non-linear equations, interpolation, differentiation, and integration.
- CO3** To Apply the Approximation methods and Iterative methods for finding solutions of Equations.
- CO4** Relate to competitive examinations.

Course Code: 20MAP05**Course Name: Mathematical Softwares – I**

- CO1** Intended for students with no programming experience, provides the foundations of LATEX and programming in MATLAB. Variables, arrays, conditional statements, loops, functions, and plots are explained.
- CO2** Good understanding of Linear algebra and Signal processing concepts.
- CO3** Perform mathematical Modeling in MATLAB.
- CO4** Develop programs in MATLAB. Evaluate, analyze and plot results.

Course Code: 20MAP06**Course Name: Practical I: Mathematical Softwares - I -Lab**

- CO1** Intended for students with no programming experience, provides the foundations of LATEX and programming in MATLAB.
- CO2** Good understanding of Linear algebra and Signal processing concepts.
- CO3** Perform mathematical Modeling in MATLAB.
- CO4** Develop programs in MATLAB. Evaluate, analyze and plot results.

SEMESTER II**Course Code: 20MAP07****Course Name: Advanced Complex Analysis with Tableau**

- CO1** Lay the foundation for topics in Advanced Complex Analysis by studying analytic functions and conformal mapping.
- CO2** To understand fundamental theorems used in complex analysis.
- CO3** To compare the concept of residues with Poisson's formula.
- CO4** Analyze the Taylor series, Laurent series and elliptic functions. Develop clear thinking and analyzing capacity for research.

Course Code: 20MAP08
with Scilab**Course Name: Partial Differential Equations**

- CO1** Identify various methods of solving different kinds of Partial differential equations.
- CO2** Have a clear understanding on the concept of elliptic, parabolic and hyperbolic equations.
- CO3** Applying the core concepts of differential equation which can help individuals for better solving the problems.
- CO4** Analyze partial derivative equation techniques to predict the behaviour of certain phenomena.

Course Code: 20MAP09**Course Name: Mechanics**

- CO1** Remember the postulates governing static and dynamic system and to study difference application of these concepts.
- CO2** End of this course, the students are expected to gain the knowledge about the Canonical Transformations and Introduction to Relativity
- CO3** Analyze the mechanism of solving the problem.
- CO4** On successful completion of this course, the students should gain knowledge about Hamilton's Equations, Hamilton-Jacobi Theory and analyze them.

Course Code: 20MAP10**Course Name: Optimization Techniques**

- CO1** Identify shortest route and shortest distance algorithms, Inventory models, Game theory concepts and Queuing Models.
- CO2** Understand shortest route and shortest distance algorithms, Inventory models, Game theory concepts and Queuing Models.
- CO3** Proficient in implementing Optimization methods for a variety of multidisciplinary applications.
- CO4** Analyze some managerial decision making problems.

Course Code: 20MAP11**Course Name: Fuzzy Logic and Fuzzy Set**

- CO1** To identify the fundamental theory and concepts of Fuzzy Logic.
- CO2** To understand the concepts of fuzzy sets, knowledge representation using fuzzy rules, approximate reasoning, fuzzy inference systems, and fuzzy logic control and other machine intelligence applications of fuzzy logic.
- CO3** To Apply the operations on fuzzy sets and the combinations of operations.
- CO4** Inference from conditional fuzzy propositions, Fuzzy quantifiers.

SEMESTER III**Course Code: 19MAP12****Course Name: Topology**

- CO1** Understand the generalized notions lying behind real and complex spaces and understand the way these spaces are generalized to topological spaces.
- CO2** Have a thorough knowledge about different topological spaces, their properties and get an insight about the significance of topological spaces in mathematical analysis.
- CO3** To know and analyse the topological properties of function spaces and distinguish between the properties of spaces with strong and weak topologies.
- CO4** To inculcate the concept of Compactness in Metric Spaces.

Course Code:19MAP13**Course Name: Advanced Topics in Fluid Dynamics**

- CO1** To Analyze fluid flow problems with the application of the momentum and energy equations.
- CO2** To understand modelling approximations in finding exact solutions.
- CO3** To Apply basic principles of multi-variable calculus, differential equations and complex variables to fluid dynamic problems.
- CO4** Inference from Viscous flows and incompressible flows.

CourseCode:19MAP14**Course Name: Probability Theory and Mathematical Statistics**

- CO1** The ability to use and simulate random variables, distribution functions, probability mass functions, and probability density functions, through calculus and functional transformations, to answer quantitative questions about the outcomes of probabilistic systems.
- CO2** The ability to use and simulate multivariate distributions, independence, conditioning, and functions of random variables, including the ability to compute expectations, moments, and correlation functions, to describe relationships between different experimental conditions.
- CO3** The ability to use probabilistic reasoning and the foundations of probability theory to describe probabilistic engineering experiments in terms of sample spaces, event algebras, classical probability, and axioms.
- CO4** The ability to use Markov chain from measurements and transition matrices to make reasonable quantitative inferences about engineering systems.

Course Code:19MAP15A**Course Name: Elective I : Graph Theory**

- CO1** Be able to grasp features, properties of special graphs
- CO2** Be able to formulate and prove central theorems about trees, matching, connectivity, coloring and planar graphs;
- CO3** To discuss the concept of graph, tree, Euler graph, cut set and Combinatorics
- CO4** Be able to use graph theory as a modeling tool

Course Code:19MAP15B**Course Name: Elective - I: Stochastic Differential Equations**

- CO1** Know the basics knowledge about stochastic process.
- CO2** Acquire more detailed knowledge about Markov Process with discrete and continuous state space.

- CO3** To find the Existence and Uniqueness Result and Weak and Strong Solutions
- CO4** Inference from Diffusion properties.

Course Code:19MAP16

Course Name: Mathematical Softwares -II

- CO1** It lays foundation for doing matrix manipulations, plotting of functions and data, implementation of algorithms, and creation of user interfaces.
- CO2** It helps in integrating computation, visualization and programming in an easy to use environment where problems and solutions are expressed in familiar mathematical notations.
- CO3** This software is a more flexible programming tool for users in order to create large and complex application programs. .
- CO4** It consists of set of tools that facilitates for developing, managing, debugging and profiling M-files, and MATHEMATICA's applications.

Course Code:19MAP17

**Course Name: Mathematical Software - II
(Practical)**

- CO1** Intended for students with no programming experience, provides the foundations of MATHEMATICA and programming in MATHEMATICA. Variables, arrays, conditional statements, loops, functions, and plots are explained.
- CO2** Good understanding of Linear algebra and Signal processing concepts.
- CO3** Perform mathematical Modeling in MATHEMATICA.
- CO4** Develop programs in MATHEMATICA. Evaluate, analyze and plot results.

SEMESTER IV

Course Code: 19MAP18

Course Name: Functional Analysis

- CO1** Appreciate how ideas from different areas of mathematics combine to produce new tools that are more powerful than would otherwise be possible.
- CO2** Understand how functional analysis underpins modern analysis
- CO3** Develop their mathematical intuition and problem-solving capabilities, especially in predicting the space in which the solution of a partial differential equation belongs to.
- CO4** Describe the spectral theorem

Course Code: 19MAP19**Course Name: Mathematical Methods**

- CO1** To Know about Fourier and Laplace's transforms.
- CO2** To be Familiar with Volterra and Fredholm integral equations.
- CO3** To Describe the functionals of the integral forms.
- CO4** To apply the acquired knowledge in solving applied problems of science and engineering. .

Course Code: 19MAP20**Course Name: C++ Programming**

- CO1** Understand the basic concepts of OOPS.
- CO2** Know fundamentals of C++ programming language
- CO3** Understand advanced features of C++ such as stream I/O templates and operator overloading
- CO4** Know fundamentals of C++ programming language with the means of writing efficient, maintainable and portable code in Numerical Problems.

Course Code: 19MAP21**Course Name: Practical II - C++ Programming**

- CO1** Understand advanced features of C++ such as stream I/O templates and operator overloading.
- CO2** Ability to use different data structures and memory allocation method. .
- CO3** Apply the major object oriented concepts to implement object oriented programs in C++, encapsulation and inheritance.
- CO4** Develop programs in C++ Evaluate, analyze and plot results.

Course Code: 19MAP22A**Course Name: Elective - II : Magneto Hydro Dynamics**

- CO1** Describe and explain the domains of validity of one-fluid MHD.
- CO2** Demonstrate the basic properties of MHD.
- CO3** To Analyze the types of flows and its properties.
- CO4** Inference from stability and instability of the fluid.

- CO1** To Identify Fundamental properties of bounded linear operators.
- CO2** To understand Partial isometry operator and its characterization.
- CO3** To know the Relations among several classes of non-normal operators.
- CO4** Inference Further development of bounded linear operators.

PROGRAMME NAME: M.Sc. (Electronics and Communication Systems)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Have a successful career in electronics academia / industries / entrepreneurs.
PEO2	Critically analyze existing literature in an area of specialization and ethically develop innovative and research-oriented methodologies to solve the problems identified.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Utilize the basic knowledge in mathematics, science and technology in Electronics and Communication field.
PO2	PROBLEM SOLVING AND ANALYSING: Identify, formulate and solve complex problems to achieve demonstrated conclusions using mathematical principles and science in Electronics and Communication field.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Design system components that meet the requirement of public safety and offer solutions to the societal and environmental concerns.
PO4	MODERN TOOL USAGE: Construct, choose and apply the techniques, resources and modern tools required for Electronics and Communication systems applications.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: Communicate the electronic activities to technical society for documentation and presentation.
PO6	SELF DIRECTED / LIFE LONG LEARNING: Demonstrate resourcefulness for contemporary issues and lifelong learning. Interpret the data pertaining to Electronics and Communication problems and arrive at valid conclusions.
PO7	ENHANCING RESEARCH CULTURE: Apply research-based knowledge to design, conduct, analyse and synthesize experiments.

COURSE OUTCOMES

SEMESTER I

Course Code: 20ELP01

Course Name: Digital and Network Communication

CO1	Illustrate and analyze the performance of different modulation techniques.
CO2	Understand and focus on different types of digital modulation schemes.
CO3	Define and illustrate the concept of analog and digital transmission of data.
CO4	Examine and explain the functions of various layers and infer the functions of asynchronous Protocols and working of LAN standards

Course Code: 20ELP02**Course Name: Microwave and RADAR
Navigation System**

- CO1** Remember and illustrate the applications of wave equations
- CO2** Understand and explain the working of various microwave devices
- CO3** Identify and categorize the working of microwave amplifiers and oscillators
- CO4** Analyze the performance of waveguides and various antennas and working of RADAR system and its applications

Course Code: 20ELP03**Course Name: 8051 Microcontroller with
C Programming**

- CO1** Recall and devise the fundamentals of microprocessors and architecture of 8051
- CO2** Understand and estimate the assembly and C language programming concepts of 8051
- CO3** Compute the function of interrupts and serial communication in real world applications
- CO4** Analyze different types of external interfaces including LEDs, LCD, Keypad, Matrix, Switches & Seven segment display and programming concepts of real time applications

Course Code: 20ELP04**Course Name: Power Electronics**

- CO1** Recognize and explain the fundamental concepts of power electronic devices.
- CO2** Explain the working of controlled rectifiers and regulators.
- CO3** Analyze the working of static switches and voltage controllers
- CO4** Evaluate the operation of inverters and power supplies for industrial needs, UPS, battery charger.

Course Code: 20ELP05**Course Name: Practical I: Digital Communication
Systems**

- CO1** Understand and analyze the implementation of base band modulation techniques
- CO2** Evaluate PCM and DM concept to design digital communication system.
- CO3** Analyze the working of various pulse modulation schemes
- CO4** Design various digital modulators and demodulators for implementing digital communication

Course Code: 20ELP06

Course Name: Practical II:8051 Microcontroller and its Applications

- CO1** Remember and differentiate basic programming concepts of 8051 μ C
- CO2** Understand and evaluate the data transfer operation through serial and parallel ports
- CO3** Analyze ADC & DAC interfacing with 8051 μ C
- CO4** Estimate various embedded system products to solve real time problems using 8051 μ C

SEMESTER II

Course Code: 20ELP07

Course Name: Optical Fiber Communication

- CO1** Enumerate and focus on the fabrication process of optical fibers
- CO2** Classify the types of optical fibers
- CO3** Apply and distinguish the characteristics of single mode fibers
- CO4** Analyze the function of various light sources and detectors, optical fibers in SONET.

Course Code: 20ELP08

Course Name: MEMS and Control Systems

- CO1** Recall and categorize the concepts of MEMS and multidisciplinary nature of Microsystems
- CO2** Understand and evaluate the working of micro sensors
- CO3** Estimate the concept of control system in electrical and thermal systems
- CO4** Analyze the time and frequency-domain responses of first, second-order systems and stability analysis of control systems

Course Code: 20ELP09

Course Name: Embedded Systems and RTOS

- CO1** Understand and classify the fundamentals of Embedded System
- CO2** Categorize the instruction sets used in architecture
- CO3** Apply and estimate the peripheral features used in microcontroller
- CO4** Explain the characteristics of Embedded software architecture, memory management and real time operating systems

Course Code: 20ELP010**Course Name: Digital System Design Using VHDL**

- CO1** Recall and analyze the functionality of combinational and sequential circuit design
- CO2** Evaluate the sequential statements used in VHDL
- CO3** Classify the specifications of modeling registers and counters
- CO4** Differentiate the characteristics of programmable logic devices and design examples

Course Code: 20ELP011**Course Name: Practical III: Optical and Microwave Communication**

- CO1** Understand and classify the working of analog and digital optical communication system
- CO2** Characterize the Attenuation, Bending and Coupling Loss of optical fibers
- CO3** Demonstrate and identify the characteristics of Reflex Klystron and Gunn Diode Oscillator
- CO4** Characterize the performance of various microwave components devices

Course Code: 20ELP012**Course Name: Practical IV: Embedded System and RTOS**

- CO1** Recall and analyze the basic programming concepts
- CO2** Understand and estimate the interfacing concept of various peripherals with embedded microcontroller
- CO3** Analyze the data transfer information through serial and parallel ports
- CO4** Construct and interpret various real world applications of Embedded Systems

SEMESTER III**Course Code: 19ELP13****Course Name: Mobile Communication**

- CO1** Understand the 2G, 3G and 4G cellular communication systems.
- CO2** Analyze the proper multiple accessing methods depending on channel model.
- CO3** Identify traffic channels for call processing
- CO4** Evaluate the key performance metrics of a cellular communication system and design.

Course Code: 19ELP14**Course Name: Digital Signal Processing**

- CO1** Understand the performance and frequency transforms for the signals
- CO2** Ability to design & analyze DSP systems like FIR and IIR Filter etc..
- CO3** Integrate computer – based tools for engineering applications
- CO4** Evaluate the working of filters with required applications.

Course Code: 19ELP15 Course Name: Nano Electronics and Nano Systems

- CO1** Understand the concepts of silicon technology road map.
- CO2** Examine the implication of nano devices in evolution.
- CO3** Relate the construction and working of RTD, RTBT and SET.
- CO4** Inspire on emerging nano systems such as DNA computers, Bio and Molecular electronics.

Course Code: 19ELP16**Course Name: Modern VLSI Design**

- CO1** Understand fabrication of passive and active electronics components.
- CO2** Relate the VLSI design flow and VLSI circuit design process.
- CO3** Examine the design flow of programmable logic devices.
- CO4** Inspect the chip design issues and demonstrate the various design applications using ASIC.

Course Code: 19ELP17**Course Name: Practical V: DSP and MATLAB**

- CO1** Recall and apply basic signal processing operations.
- CO2** Demonstrate the abilities towards MATLAB based implementation of various DSP systems.
- CO3** Analyze the architecture of a DSP Processor.
- CO4** Design a system for various applications of DSP.

Course Code: 19ELP18**Course Name: Practical VI: VLSI Design**

- CO1** Design the combinational and sequential logic circuits using Digital IC's/ Lab VIEW/ VHDL.
- CO2** Demonstrate the working of various combinational logic circuits.
- CO3** Validate the working of various sequential logic circuits.
- CO4** Review the working of FIFO.

SEMESTER IV

Course Code: 19ELP19A
Networks

Course Name: Elective I: (A) Wireless Sensor

- CO1** Relate the basic concepts of wireless sensor networks, internet and computing
- CO2** Illustrate wireless sensor network with sensor nodes.
- CO3** Examine the ad-hoc wireless network.
- CO4** Evaluate the significance of wireless sensor networks and recent advancements.

Course Code: 19ELP19B

Course Name: Elective I: (B) Arm Core Processor

- CO1** Understand the features of embedded systems and architecture of ARM7.
- CO2** Analyze the instruction set ARM7
- CO3** Evaluate the operation of exceptions, interrupts and interrupt handling.
- CO4** Test the interfacing of peripheral devices to LPC2378.

Course Code: 19ELP20A

Course Name: Elective II: (A) Real Time System Design

- CO1** Understand the principles of real time environment and IoT.
- CO2** Analyze the working of various embedded system components and analyze the various real time systems using debugging components
- CO3** Evaluate the system life cycle requirements.
- CO4** Design various real time applications for emerging trends.

Course Code: 19ELP21A

**Course Name : Elective III Practical VII:
Internet of Things**

- CO1** Understand the application areas of IOT
- CO2** Apply the revolution of Internet in Mobile Devices, Cloud & Sensor Networks
- CO3** Analyze the building blocks of Internet of Things and its characteristics.
- CO4** Build the IoT products for various real time applications

Course Code: 19ELP21B

Course Name : Elective III Practical VII: Virtual Instrumentation

- CO1** Understand the software environment of Lab VIEW and use the programming structures and data types that exist in Lab VIEW.
- CO2** Create user interfaces with charts, graph and buttons.
- CO3** Outline the uses of data acquisition systems, analysis and display operations.
- CO4** Create and save VIs for industrial applications.

PROGRAMME NAME: M.Sc. (Physics)

PROGRAMME EDUCATIONAL OUTCOMES

PEO1	Apply knowledge and skill in the design and development of Physics to cater to the needs of science and excel in the research related to Physics and Materials characterization.
PEO2	Become professionally trained in the area of materials characterization and laser. Demonstrate highest standards of actuarial ethical conduct and professional behaviour, critical, interpersonal and communication skills as well as a commitment to life-long learning.

PROGRAMME OUTCOMES

PO1	DISCIPLINARY KNOWLEDGE: Understand the basic concepts and laws in physical sciences.
PO2	PROBLEM SOLVING AND ANALYSING: Identify and formulate research literature & analyze complex problems in Physical Science.
PO3	ENVIRONMENT SUSTAINABILITY AND ETHICS: Apply appropriate techniques including prediction for modeling complex activities physical Science.
PO4	MODERN TOOL USAGE: Design solution for problems related to public health, safety, social and environmental considerations using modern tools.
PO5	TEAM WORK & COMMUNICATIVE SKILLS: Communicate effectively through report writing, documentation and effective presentations.
PO6	SELF DIRECTED / LIFE LONG LEARNING: Function effectively as an individual member or leader in diverse teams in multidisciplinary fields.
PO7	ENHANCING RESEARCH CULTURE: Enhance and adopt new skills for future employability in teaching and research through seminar, internship and dissertation.

COURSE OUTCOMES

SEMESTER I

Course Code : 20PHP01

Course Title: Mathematical Physics

CO1	Understand the concept of modern mathematical physics.
CO2	Analyze the principles of complex variable theory and linear space.
CO3	Apply the basic concept of Fourier transform and Laplace transform in theoretical mechanics and quantum mechanics.

CO4

Evaluate the concepts of group theory in theoretical mechanics, quantum mechanics and electromagnetism.

Course Code : 20PHP02

Course Title: Classical Mechanics

CO1

Remember the lagrangian and hamiltonian formalism.

CO2

Understand Hamiltonian formalism and the physical parameters.

CO3

Analyze the Hamilton -Jacobi Method and theoretical problems of classical mechanics.

CO4

Evaluate two body problems and rigid body dynamics.

Course Code : 20PHP03

Course Title: Computational Physics

CO1

Identify modern programming methods to extent their limitations of computational methods in physics.

CO2

Understand and apply the basic methodology of numerical differentiation and numerical integration to a broad range of physics problems.

CO3

Examine MATLAB fundamentals and apply the knowledge in real time applications.

CO4

Analyse and solve various problems using MATLAB programming constructs.

Course Code : 20PHP04

Course Title: Integrated Electronics

CO1

Understand the basic concepts of semiconductor devices and its fabrication.

CO2

Evaluate the characteristics of Operational Amplifiers for linear and non-linear applications.

CO3

Analyse the working of various Analog and Digital modulation schemes.

CO4

Examine the behaviour of various combinational and sequential logic circuits.

Course Code : 20PHP05

Course Title: Practical I: General Physics - I

CO1

Understand the basics of experimental physics.

CO2

Interpret the concepts of young's modules and semiconductor devices.

CO3

Analyze strong laboratory skills and enhance the knowledge level to present-day requirements in industries, research fields.

CO4

Develop the design knowledge of general physics.

Course Code : 20PHP06

Course Title: Practical II General Electronics

- CO1** Understand the basic knowledge of simple electronics circuits.
- CO2** Interpret the theoretical concepts by doing experiments.
- CO3** Apply the characteristics knowledge and systematically study the behavior of BJT and power electronics components.
- CO4** Develop and enhance the design knowledge towards real time applications.

SEMESTER II

Course Code : 20PHP07

Course Title: Electromagnetic Wave Theory

- CO1** Understand the fundamentals of Electromagnetic and magnetostatics.
- CO2** Predict the transverse behavior of electromagnetic waves.
- CO3** Analyze the concept of electromagnetic waves using Maxwell's Equations.
- CO4** Solve problems in electrostatic, magnetostatic, and electromagnetic fields

Course Code : 20PHP08

Course Title: Crystal Growth and Thin Film Physics

- CO1** Understand the fundamental terminology and characteristics of crystal growth and thin films.
- CO2** Analyse the basis of various thin film preparation methods.
- CO3** Examine the working of various thin film deposition technique.
- CO4** Apply the acquired knowledge in different characterization techniques.

Course Code : 20PHP09

Course Title: Quantum Mechanics

- CO1** Identify the mathematical foundations of quantum mechanics.
- CO2** Understand the Schrödinger equation using various approximation methods.
- CO3** Apply Time Dependent Perturbation Theory to solve simple problems.
- CO4** Evaluate the concept of Angular Momentum.

Course Code : 20PHP10A

Course Title: 8051 Microcontroller

- CO1** Understand the architecture of 8051 Microcontroller.

- CO2** Analyze the addressing mode and Instruction set.
- CO3** Apply the use of Interrupts and Communication in various real time problems.
- CO4** Create various embedded systems products for consumer and industrial applications.

Course Code : 20PHP10B

Course Title: Experimental Techniques and Data Analysis

- CO1** Remember the basics of experimental techniques.
- CO2** Understand the concepts of passive and active transducers, amplifiers and signal conditioning circuits.
- CO3** Analyze the concept of CW, AM, FM and PM waves.
- CO4** Create new applications using of various electronic measuring instruments.

Course Code : 20PHP11

Course Title: Practical III: General Physics–II

- CO1** Remember the basics of experimental physics.
- CO2** Understand the working of LASER.
- CO3** Evaluate the working of microwave test benches (Klystron, Gunn Diode Oscillator etc.)
- CO4** Create the knowledge of theories involved in physics using practical experiments.

Course Code : 20PHP12

Course Title: Practical IV: Advanced Electronics

- CO1** Recall the fundamentals of Timer.
- CO2** Understand the basic principles of Microwave Engineering.
- CO3** Examine the operation of 8051 Microcontroller.
- CO4** Develop various products for real time applications using 8051 Microcontroller.

SEMESTER III

Course Code : 19PHP13

Course Title: Nuclear and Particle Physics

- CO1** Understand the ground state properties of the nucleus to study the nuclear structure behaviour.

- CO2** Outline the structure of the nucleus, radioactive decay, nuclear reactions and the interaction of nuclear radiation with matter.
- CO3** Apply the deuteron physics concepts for the better understanding of nuclear forces in Nucleon-Nucleon scattering.
- CO4** Justify the interactions between elementary particles.

Course Code : 19PHP14

Course Title: Atomic and Molecular Spectroscopy

- CO1** Acquire knowledge about Infrared Spectroscopy.
- CO2** Classify the types of Spectroscopy.
- CO3** Interpret the interior depth of Spectroscopy.
- CO4** Analyse the concepts of Spectroscopy.

Course Code : 19PHP15

Course Title: Communication Electronics

- CO1** Understand the Propagation of Radio waves in free space.
- CO2** Analyse the applications of optical fiber communication systems.
- CO3** Interpret the purpose of satellite communications.
- CO4** Apply the various network systems for information transfer.

Course Code : 19PHP16A

Course Title: Lasers and Optics

- CO1** Remember the fundamentals of optics.
- CO2** Understand the classifications of pumping sources.
- CO3** Interpret the interior depth of lasers in science.
- CO4** Analyse the knowledge about the laser in industry.

Course Code : 19PHP16B

Course Title: Plasma Physics

- CO1** Understand the concept of plasma.
- CO2** Analyse the behaviour of charged particles in electric and magnetic waves.
- CO3** Relate the concepts of waves in plasma.
- CO4** Evaluate the kinetic theory of plasma.

Course Code : 19PHP17**Course Title: Practical V: Advanced Physics**

- CO1** Understand the experimental foundation for the theoretical concepts introduced in the lectures.
- CO2** Analyse the basic principles of photo cells.
- CO3** Observe and analyses the laboratory instrumental techniques and gain the practical knowledge.
- CO4** Introduce new concepts and techniques which have a wide application in experimental science.

Course Code : 19PHP18**Course Title: Practical VI: Communication Systems**

- CO1** Recall and apply basic laws of modulation.
- CO2** Understand the working of various modulator and demodulator.
- CO3** Analyse the working of various digital modulation scheme.
- CO4** Evaluate the working of Analog and Digital fiber optics link.

SEMESTER IV**Course Code : 19PHP19A****Course Title: Molecular Physics**

- CO1** Remember the concepts of molecular structures and bonding.
- CO2** Understand the principles of interactions in molecule.
- CO3** Predict the concepts of molecular dynamics.
- CO4** Evaluate and interpret electron transfer, electronic structure and spectra.

Course Code : 19PHP19B**Course Title: Thermodynamics and Statistical Methods**

- CO1** Understand Equilibrium of thermodynamics.
- CO2** Interpret the quantum statistics.
- CO3** Apply the concepts of Fermi Energy in thermodynamics.
- CO4** Analyse the applications of statistical physics.

Course Code : 19PHP20A**Course Title: Medical Physics**

- CO1** Understand the bio-electric Potentials and electrodes.

- CO2** Demonstrate the working of Digital X-ray imaging and Computed Tomography.
- CO3** Evaluate the working of magnetic resonance imaging.
- CO4** Investigate the working of Medical Imaging Instrumentation.

Course Code : 19PHP20B

Course Title: Condensed Matter Physics

- CO1** Understand the basics of Bonding and Crystallography.
- CO2** Remember the vibration and thermal properties of matter.
- CO3** Apply the knowledge of free electron model and band structure in metals.
- CO4** Analyse the behaviour of magnetic, dielectric and superconducting materials.

Course Code : 19PHP21A

Course Title: Electronic Instrumentation

- CO1** Understand the principles of measurements and transducers.
- CO2** Analyze the functions of analog instruments.
- CO3** Evaluate the working of digital instruments.
- CO4** Investigate the functions of oscilloscope and signal generator.

Course Code : 19PHP21B

Course Title: Nano Electronics and Nano Systems

- CO1** Understand the principles of solid-state physics.
- CO2** Interpret the measuring properties of nanostructure.
- CO3** Analyze the principle of Carbon and Bulk Nanostructure materials.
- CO4** Applications of Self-Assembly, Nano machines & Nano devices

PROGRAMME NAME: M.Sc. (Costume Design and Fashion)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	To educate and develop skills on Apparel Designing.
PEO2	To train students as Professionals for the Textile & Fashion Industry.

PROGRAMME OUTCOMES

PO1	Enhance the students' Knowledge on the latest textiles and the technology in their production and creation of apparels.
PO2	Trains the students to design advanced techniques for fashion shows and other special occasions
PO3	Enable the student to design Apparels for specific industrial needs
PO4	Student will develop advanced skills of Illustrating and Designing Apparel, Accessories and other Textile.
PO5	Enables students to become merchandisers in the Textile & Fashion Industry
PO6	Enable students to innovate garment designs, accessory products and do research on textiles.
PO7	Enables students to Produce and market Apparels for International market.

COURSE OUTCOMES

SEMESTER I

Course Code:20CDP01

Course Name: Research Methodology

- | | |
|------------|--------------------------------------------------------------------------------|
| CO1 | Explain the basic and methods of research |
| CO2 | Relate the applications of research techniques for analysis and interpretation |
| CO3 | Apply the technique of Research, different types of research. |
| CO4 | Explain and choose a research design in their Project and Thesis. |

Course Code: 20CDP02

**Course Name: Standards And Specifications
for Clothing**

- | | |
|------------|----------------------------------|
| CO1 | Explain about clothing standards |
|------------|----------------------------------|

- CO2** Compare between the global standards for various components and other aspects of export apparels.
- CO3** Explain on international standard bodies
- CO4** Decide garment design with standards and specifications for export garments

Course Code: 20CDP03

Course Name: Practical I- Advanced Illustration

- CO1** Relate Illustration techniques for Fashion.
- CO2** Develop Fashion illustration
- CO3** Plan Theme Creation with illustration
- CO4** Reframe and Design garments for various occasion.

Course Code: 20CDP04

Course Name: Practical II- Advanced Draping

- CO1** Explain the basics of draping technique in garment display
- CO2** Develop the basic patterns in a garment
- CO3** Select various fullness and produce pattern for a garment.
- CO4** Select and Develop intric garment designs for various occasions.

Course Code: 20CDP05

Course Name: Practical III- Advanced Textile Printing

- CO1** Classify different types of design.
- CO2** Develop different types of textile design
- CO3** Analyze different type of textile design
- CO4** Select and Develop textile design prints on various types of fabrics/garment design

SEMESTER II

Course Code: 20CDP06

Course Name: Indian Textile Industries

- CO1** Students will collect information about Indian Textile Industry
- CO2** Students will examine the various aspects of Indian Textile industry
- CO3** Will be able to explain about fiber, fabric and printing
- CO4** Compare about the various policies of the Indian Textile Industry

Course Code: 20CDP07**Course Name: Technical Textiles**

- CO1** Will learn and explain technical textile
- CO2** Appraise various types of technical textiles
- CO3** Will learn the functions of technical textiles
- CO4** Will be able to evaluate on various types of textiles used for industries

Course Code: 20CDP08**Course Name: Practical IV- Advanced Garment Designing and Construction**

- CO1** Explain designing the basic garment
- CO2** Develop the details from the basic garment
- CO3** Analyze and assemble the details for advanced garment design
- CO4** Create design and develop garments for special occasions.

Course Code: 20CDP09**Course Name: Practical V- Accessories and Ornaments Making**

- CO1** Persuade to gain the knowledge on types of material used for ornaments and accessories.
- CO2** Classify different types of materials for making ornaments and accessories.
- CO3** Apply suitable material for specific ornaments and accessories.
- CO4** Create design and develop ornaments and accessories for customers.

Course Code: 20CDP10**Course Name: Mini Project on World Costumes**

- CO1** Find out the costumes of various countries
- CO2** Identify and illustrate the costumes of different regions of the world
- CO3** Discover and plan the various traditions and the costumes of the world
- CO4** Compare the various traditional garments used in different countries

SEMESTER III

Course Code: 19CDP12

Course Name: International Trade and Documentation

- CO1** Student will have knowledge in international trade
- CO2** Student will be familiar with documents in international trade.
- CO3** Student will understand on export and import procedure
- CO4** Student will be familiar with documents

Course Code: 19CDP13

Course Name: Textile Testing

- CO1** Student will have knowledge on methods of testing.
- CO2** Student will have knowledge on utility of different physical testing equipment.
- CO3** Student will be familiar with testing equipment.
- CO4** Student can utilize the knowledge gained in testing fabric in testing field.

Course Code: 19CDP14

Course Name: Practical: Textile Testing

- CO1** Student will have knowledge on utility of different physical testing equipment.
- CO2** Student will be familiar with testing equipment.
- CO3** Student can utilize the skill gained in testing fabric in testing field.
- CO4** Students will be able to commercially cost textiles for research

Course Code: 19CDP15

Course Name: Computer Aided Fashion Designing

- CO1** Student will have knowledge on CAD pattern making on garment created.
- CO2** Student will be familiar with grading techniques in CAD testing equipment .
- CO3** Student can utilize the skill gained in CAD portfolio.
- CO4** Students can be employable in the apparel export production industry

Course Code: 19CDP16A

Course Name: Practical: Home Textiles & Furnishing

- CO1** Student will have creative ability in designing home furnishing.

- CO2** Student can utilize the skill gained in furnishing for different types of rooms.
- CO3** students will be able to design home textiles for various application
- CO4** students will be able to design and produce home textiles for customers

Course Code: 19CDP16B

Course Name: Practical: Garment Care & Labeling

- CO1** Classifies different types of Fabric
- CO2** Identifies the methods of care
- CO3** Applies methods for cleaning of fabrics.
- CO4** Application in identifying stains and removal

Course Code: 19CDP17

Course Name: Mini Project – Case Study

- CO1** Student will be introduced to branding
- CO2** Student will gain knowledge on national brands
- CO3** Student will gain knowledge on international brands
- CO4** Student will have knowledge to start his own brand

Course Code: 19CDP18

Course Name: Industrial Training – Viva Voce

- CO1** Student will gain knowledge on the terms in marketing
- CO2** Student will gain knowledge on merchandising types
- CO3** Student will gain knowledge on merchandising process
- CO4** Student will gain knowledge to be employed in an buying house or apparel industry as merchandiser

SEMESTER IV

Course Code: 19CDP19

Course Name: Practical: Fashion Photography

- CO1** Learns the basic terms in Photography
- CO2** Learns about the tools in photography
- CO3** Learns about the techniques in photography
- CO4** Applies the knowledge on shooting various subjective photographs.

Course Code: 19CDP20A**Course Name: Practical: Beauty Care**

- CO1** Will learn the terms in Beauty care
- CO2** Will learn about the equipments used
- CO3** Will learn about the techniques for grooming
- CO4** Will be applying the knowledge on grooming for various occasion

Course Code: 19CDP20B**Course Name: Practical: Visual Merchandising**

- CO1** Enables to gain the knowledge on types of material used for ornaments and accessories.
- CO2** Enables them to gain knowledge on application of different types of materials for making ornaments and accessories.
- CO3** Enables to select the suitable material for specific ornaments and accessories.
- CO4** Enables to design and create ornaments and accessories for customers.

Course Code: 19CDP21**Course Name: Project Work – Viva Voce**

- CO1** Student will gain knowledge to differentiate between fashion and textile industry
- CO2** Student will be able to select topic for the research proposal
- CO3** Student will be able to design research project proposal
- CO4** Student will be able to execute a research proposal

PROGRAMME NAME: M.Sc. (Visual Communication)

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	To Prepare the students for ever growing demands of the media world and to cater the needs of the entry level communication job markets.
PEO2	Increase the standards of excellence and performance of students by offering a modern curriculum by offering a need based education keeping in tune with the newer societal aspirations.

PROGRAMME OUTCOMES

PO1	Provides adequate hands on experience in various medium and techniques
PO2	Prepared with an ability of rational thinking, logical thinking and creativity based on the societal needs.
PO3	Fortified to meet out the parallel growth in theoretical and practical skills to face the current enlargement of the media industry.
PO4	Equipped with uncompromising standards to perceive the outside world and to understand the living environment and culture which will enhance their profession.
PO5	Progressed with a sense of commitment to fully meet the expectation of the media industry.
PO6	Exposed with adequate research experience in communication design, marketing, advertising, film, and other media.
PO7	Provided with appropriate experience to enhance their specialization by exploring various medium.

COURSE OUTCOMES

SEMESTER I

Course Code: 20VCP01

**Course Name: Introduction to
Communication and Theories**

CO1	Understanding media theories and functions become essential for the effective functioning of the student as a media person.
CO2	Focus on an understanding the core aspects of theories.
CO3	Exposure on contemporary concepts of communication.
CO4	Experiment the validity of theories with real time case studies.

Course Code: 20VCP02**Course Name: Media Writing**

- CO1** Remember Hands-on practice of report writing.
- CO2** Understanding of effective communication through writing.
- CO3** To learn different kinds of writing techniques.
- CO4** The technical writing skills will help the students to be a successful media professional.

Course Code: 20VCP03**Course Name: Advertising and Event Management**

- CO1** To learn the structure and functions of advertising agencies and media Organization.
- CO2** Understanding basic elements in creative advertisements.
- CO3** To learn the connection of creativity and managing skills.
- CO4** The application of event management and the structure of advertisement will help them to run any media campaign in a successful manner.

Course Code: 20VCP04**Course Name: Practical I- Graphic Production**

- CO1** Students will understand the elements and the principles of design.
- CO2** Students can apply the concept of communication in graphics design.
- CO3** To learn creative thinking and develop software skills.
- CO4** To comprehend the need of the industry in graphic design and communication

Course Code: 20VCP05**Course Name: Mini Project Outdoor Exploration**

- CO1** Students will gain a real time experience in a city/village
- CO2** Students will experience the socio, economic and political scenario of the particular place.
- CO3** Documentation on outdoor exploration will be the profile of the students
- CO4** To apply in research of social sciences

SEMESTER II

Course Code: 20VCP06

Course Name: Media Laws And Ethics

- CO1** Students can understand the basic knowledge of Media Functioning.
- CO2** Students can expose the various functions of Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their career opportunities in new media.

Course Code: 20VCP07

Course Name: Fundamentals of Photography

- CO1** Students can get the knowledge on the generation of camera and the essential accessories for indoor and outdoor photography.
- CO2** Students can understand the techniques and aesthetics of photography.
- CO3** Can adapt as a digital image maker.
- CO4** The theoretical exposure will help the students to opt their specialization.

Course Code: 20VCP08

Course Name: Citizen Journalism

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 20VCP09

Course Name: Practical II - Photography

- CO1** Students can get practical exposure to handle camera and lighting.
- CO2** Can explore the techniques and aesthetics in photography.
- CO3** Students can gain the image making skills in indoor and outdoor conditions.
- CO4** The practical exposure will help the students to choose their profession.

Course Code: 20VCP10

**Course Name: Practical – III Television
Program Production**

- CO1** Students can understand the stages of production.
- CO2** Students can learn the techniques of television production
- CO3** The production process will help the students to enhance the skills in literary and software.
- CO4** The practical exposure will ensure the student to work in the field of Broadcast journalism.

SEMESTER III

Course Code: 19VCP11

Course Name: Film Studies

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP12

Course Name: Media Laws and Ethics

- CO1** Students can understand the basic knowledge of Media Functioning.
- CO2** Students can expose the various functions of Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP13

Course Name: Philosophies of Communication

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP14

Course Name: Practical –V Cinematography and Editing Techniques

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP15

Course Name: Project-I - Research Dissertation - Viva Voce

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP16

Course Name: Industrial Traning

- CO1** Internship will help the students to understand the real time functioning of media industry.
- CO2** It will help them to understand the work culture media industry
- CO3** It will help them to understand how the theoretical aspects are Implemented in the field
- CO4** It will prepare the students for their carrier.

SEMESTER IV

Course Code: 19VCP17

Course Name: Environmental Journalism

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP18**Course Name: Mini Project: Portfolio Design**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP19A**Course Name: Elective Specialization: Acting-I (A)**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP19B**Course Name: Elective Specialization: Journalism-I (B)**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP19C**Course Name: Elective Specialization: Film Production-I (C)**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP19D**Course Name: Elective Specialization: Photography-I (D)**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP20A**Course Name: Production Practical : Acting**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP20B**Course Name: Production Practical: Journalism**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP20C**Course Name: Production Practical: Film
Production**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

Course Code: 19VCP20D**Course Name: Production Practical: Photography**

- CO1** Students can understand the basic knowledge of Citizen Journalism.
- CO2** Students can expose the various functions of Citizen Journalism.
- CO3** Can apply the theoretical aspects into new media.
- CO4** Students can choose their carrier opportunities in new media.

PROGRAMME NAME: M.S.W.

PROGRAMME EDUCATIONAL OBJECTIVES

PEO1	Developing Professionalism: Prepare Social Work students by integrating interdisciplinary knowledge, professional Social Work values, maintain ethical standard with professional identity in their community with commitment to address social racial and economic in justice at local and global continuum.
PEO2	Strategies and Techniques of Social Work: The program is built on a strong generalist foundation that converts theoretical knowledge while practicing which provides opportunity for students in analyzing and evaluating existing and emerging areas of knowledge to advance social service delivery, social policies, and direct practice with the vulnerable populations that are served by social workers.

PROGRAMME OUTCOMES

PO1	Understanding of Social Work: Enhance student to understand social work methods, models, ethics approaches, values as a professional service and to recognize the need and importance of social work education training and practice.
PO2	Develop Professionalism: Apply theoretical knowledge in the practical field with professional identity by acquiring skill in the humanity bases.
PO3	Problem Analysis: Critically analyze and understand the existing social issues in the right perspective.
PO4	Development of Solution: Enhancing the capacity for social functioning, improving the quality of life for everyone, promoting social justice, providing opportunities for sustainable development.
PO5	Research and Application: Conduct empirical research and provide solution for problems that help in policy making.

COURSE OUTCOMES

SEMESTER I

Course Code: 20SWP01

Course Name: Introduction to Social Work

- | | |
|-----|-------------------------------------------------------------------|
| CO1 | Memorized the concepts, background and principles of Social Work. |
| CO2 | Enriched the knowledge on the models and methods of Social Work. |

- CO3** Relate the Philosophy, values and code of ethics in Social Work & Professional Associations.
- CO4** Scrutinize the fields and emerging areas of Social Work.

Course Code: 20SWP02

Course Name: Sociology for Social Work Practice

- CO1** Recognized the concepts of Sociology and Indian Society.
- CO2** Enhance the knowledge on the basic concept of Socialization and Social Process.
- CO3** Explore the Indian family system and its impact on society.
- CO4** Assess the concept, characteristics and functions of Social Stratification, Social Change and Social Control.

Course Code: 20SWP03

Course Name: Psychology for Social Work Practice

- CO1** Attain knowledge on the basic psychological and Human Growth & Development.
- CO2** Discover the evolution of personality across individual life span.
- CO3** Relate the concept, principles and theories of learning, motivation and perception.
- CO4** Investigate the concept of abnormality and treatment for promotion community mental health.

Course Code: 20SWP04

Course Name: Social Case Work

- CO1** Recognized the values and principles of working with individuals.
- CO2** Interpret the basic concepts, tools and techniques in working with Individuals in problem solving and in developmental work.
- CO3** Relate the approaches and theories in social case work.
- CO4** Discover social case work in different settings and analyze problems & limitations when practice.

Course Code: 20SWP05

Course Name: Social Work Perspectives for Persons with Disabilities

- CO1** Relate the concept, forms, prevention and management of disability.
- CO2** Enrich the knowledge related to empowerment of Person with Disabilities.

- CO3** Review the Legislations and model related to Persons with Disability.
- CO4** Scrutinize the role of the social workers in rehabilitation with Persons with Disability.

Course Code: 20SWP06

Course Name: Field Work Practicum – I

- CO1** Trace out various agencies of social work settings such as NGO, Governmental agencies, Hospitals and industries.
- CO2** Recognize the different fields of social work agency and sector.
- CO3** Relate individual and group learning through practical exposure.
- CO4** Discover the social issues in the field of social work.

SEMESTER II

Course Code: 20SWP07

Course Name: Social Group Work

- CO1** Enhance knowledge on the basic concepts, characteristics, assumption and philosophy and group work with groups in problem solving.
- CO2** Obtain the knowledge on the theories and function of group work.
- CO3** Relate the social group work process, planning & supervision and recording.
- CO4** Investigate group therapy and group work in various setting.

Course Code: 20SWP08

Course Name: Community Organization and Social Action

- CO1** Explore the philosophy, models and methods of community organization.
- CO2** Recapitulate the phases of community and skills of community organization.
- CO3** Relate the method of community organization in different fields.
- CO4** Investigate social development and social legislation for social action.

Course Code: 20SWP09

Course Name: Social Work Research and Statistics

- CO1** Recognize the concept, characteristics and scientific methods in social work research.
- CO2** Interpret the research design, sampling, tools and types of data collection.

- CO3** Implement the research methodology learn in data processing & report writing.
- CO4** Explore the use of statistics relevant for social science.

Course Code: 20SWP10A

Course Name: Labour Welfare

- CO1** Enhance the concept of labour welfare, methods and measures to control labour issues.
- CO2** Comprehend the labour welfare measures at various levels.
- CO3** Inculcate the concept and importance of industrial health and housing, workers education.
- CO4** Scrutinize the International Labour Organization in labour welfare.

Course Code: 20SWP10B

Course Name: Medical Social Work

- CO1** Explore the basic concepts of health and medical social work.
- CO2** Relate medical social work in different setting.
- CO3** Observe medical social work intervention & rehabilitation.
- CO4** Explore role of medical social worker in prevention of disease and promotion of health.

Course Code: 20SWP10C

Course Name: Rural and Urban Social Structure

- CO1** Enrich the knowledge about rural and urban sociology.
- CO2** Comprehend basic knowledge about rural economy, economics of agriculture and land reform.
- CO3** Assess the problems of rural community.
- CO4** Scrutinize the knowledge about different cooperative institution.

Course Code: 20SWP11

Course Name: Human Rights

- CO1** Comprehend the concept on human rights and issues.
- CO2** Recognize the role of human rights in the constitution of India.
- CO3** Assess the human rights and its issues in different sectors.
- CO4** Relate the international monitoring mechanisms

Course Code: 20SWP12

Course Name: Field Work Practicum - II

- CO1** Relate the theoretical knowledge to implement in practical situation.
- CO2** Observe the functions and activities of field work agency.
- CO3** Relate the skill require to solve the social issues.
- CO4** Assess the skills needed to develop the art of writing the narrative and descriptive records.

SEMESTER III

Course Code:19SWP13

Course Name: Social Welfare Administration and Social Legislations

- CO1** Memorize the concept, scope and functions of Social Welfare Administration
- CO2** Interpret the Evolution of social welfare, Methods and Models
- CO3** Apply Social Work profession in Social Planning and Social Development
- CO4** Analysis the Social Legislations and Society Registration

Course Code:19SWP14A

Course Name: Labour Legislations

- CO1** Identify the concept, historical development and principles of Labour legislations.
- CO2** Understand the National and International labour organization.
- CO3** Apply the Legislations Relating to wages and Social Security of Labourers.
- CO4** Recognise the Legislation provisions relating to work and safety conditions.

Course Code:19SWP14B

Course Name: Mental Health

- CO1** Identify the concept, signs and symptoms and history of Mental Health.
- CO2** Understand Minor Mental Disorders
- CO3** Apply Major Mental Disorders
- CO4** Analyse the childhood and personality disorder

Course Code:19SWP14C**Course Name: Rural Community Development**

- CO1** To acquire specific knowledge on Rural Community and Rural Community Development
- CO2** Understand the Local Self Government and its administration.
- CO3** Apply knowledge regarding Community development administration.
- CO4** Analyse the Different programs related to Rural Community Development in India.

Course Code:19SWP15A**Course Name: Industrial Relations**

- CO1** Identify the basic concept of Industrial Relations.
- CO2** Understand the knowledge on the Industrial Relations system in India.
- CO3** Familiarize the students with the various IR processes.
- CO4** Analysis the role of Trade Unions and legislations relating to IR.

Course Code:19SWP15B**Course Name: Community Health**

- CO1** Identify the concept of community Health, health status and problems
- CO2** Interpret the health administration in different levels
- CO3** Relate the Health Policy and Health Education
- CO4** Analysis the Health Networks.

Course Code:19SWP15C**Course Name: Welfare of the Weaker Sections**

- CO1** Recall the knowledge about weaker section and problems faced.
- CO2** Recognise the Problems, cause and welfare programme relating to the Scheduled Castes and Scheduled tribes.
- CO3** Solve issues related to Bonded Labour and Disabled.
- CO4** Analyse the Status of Women and Empowerment.

Course Code:19SWP16**Course Name: Corporate Social Responsibility**

- CO1** Identify the concepts, types of Entrepreneurship and enhancement of Women Entrepreneurs & Rural Entrepreneurs.
- CO2** Understand the business ethics and Corporate Community Participation in Corporate Social Responsibility at global scenario.
- CO3** Related the Corporate Social Responsibility Policies and Activities.
- CO4** Analysis the Corporate Social Responsibility in Indian Context.

Course Code:19SWP17

Course Name: Disaster Management

- CO1** Identify the concepts, nature and meaning of disaster, various types of disaster.
- CO2** Understand the Stake holder's role in disaster management.
- CO3** Solve the Disaster mitigation and psycho-social issues.
- CO4** Analyse the Impact of Disaster on Women, Children, Aged and others

Course Code:19SWP18

Course Name: Field Work Practicum - III

- CO1** Recall the theoretical knowledge to implement in practical situation.
- CO2** Understanding the functions and activities of field work agency.
- CO3** Apply the skill require to solve the social issues.
- CO4** Analyse the skills needed to develop the art of writing the narrative and descriptive records.

Course Code:19SWP19

Course Name: Institutional Training

- CO1** Identify the opportunity for students to stand out in competitive environment.
- CO2** Recognise through pre placement on regular intervals.
- CO3** Apply the skill require to solve the social issues.
- CO4** Analyse the trainees improved performance.

SEMESTER IV

Course Code:19SWP20A

Course Name: Human Resource Management

- CO1** Identify the concept, origin, Structure and Functions of HR aspects.
- CO2** Familiarize the emerging trends in HRM.
- CO3** Examine the Performance Management System and Compensation.

CO4 Analysis the Strategic HRM & Current Trends in HR.

Course Code:19SWP20B

Course Name: Hospital Administration

CO1 Identify the meaning, evaluation and types of hospital.

CO2 Understand Hospital Administration and Human Resource Management in hospital.

CO3 Relate hospital paining and Hospital Budgeting.

CO4 Analyse Health Related Laws.

Course Code:19SWP20C

Course Name: Urban Community Development

CO1 Identify the meaning, concept, problems of urban community.

CO2 Learn administrative structure and programmes for urban development.

CO3 Understand Urban Development Administration

CO4 Analysis Urban Development Programmes.

Course Code:19SWP21A

Course Name: Organizational Behaviour

CO1 Identify Background, Foundations, Models and Challenges of Organization Behaviour.

CO2 Understand the Motivation and Leadership.

CO3 Use Dynamics and Forms of Organization.

CO4 Analysis Organizational Change and Development.

Course Code:19SWP21B

Course Name: Psychiatric Social Work Practice

CO1 Identify the concepts, history, scope, technique of Psychiatric Social Work and the network services.

CO2 Understand the Psychological Treatment Methods

CO3 Relate Role of Psychiatric Social Worker and Admission and discharge procedures in a Psychiatric Hospital.

CO4 Analyse the Rehabilitation and Legislation.

Course Code:19SWP21C

Course Name: Management of Non – Profit Organisations

CO1 Identify the concepts, background of Non-Profit Organization.

CO2 Recall Project Formulation.

CO3 Apply Project Cycle Management

CO4 Analysis Project Personnel Empowerment and evaluate projects.

Course Code:19SWP22

Course Name: Counseling and Guidance

CO1 Acquire knowledge about the theoretical foundations of counselling.

CO2 Understand the licensing and research foundation of counselling.

CO3 Apply therapeutic process

CO4 Analysis assessment , testing and the diagnostic process

Course Code:19SWP23

Course Name: Field Work Practicum – IV

CO1 Recall the theoretical knowledge to implement in practical situation.

CO2 Understanding the functions and activities of field work agency.

CO3 Apply the skill require to solve the social issues.

CO4 Analyse the skills needed to develop the art of writing the narrative and descriptive records.

Course Code:19SWP24

Course Name: Block Placement

CO1 Recall the hands-on experience within their block field work agencies.

CO2 Understand the available career opportunities and help them to identify.

CO3 Apply the theoretical knowledge in work place.

CO4 Guide the students in developing skills and job-search strategies required to achieve their career.

Course Code:19SWP25

Course Name: Project Work

CO1 Identify the research aptitude of the students in the area of social science.

CO2 Predict the opportunity to conduct empirical study.

CO3 Demonstrate student to prepare project reports.

CO4 Analyse the fields and emerging areas of research in Social Work.

Course Outcomes for Allied Commerce Courses

SEMESTER III

Offered to B.Sc. (Computer Science), B.Sc. (Computer Technology),
B.Sc. (Computer Science with Cognitive Systems)

Course Code: 20CEU12/20CTU12/
20TCU12

Course Name: Business Accounting

- CO1 Describe the need and importance of various accounting modes in business
- CO2 Interpret the application of various modes in accounting
- CO3 Relating various concepts in methods of accounting
- CO4 Preparing of books of accounts and summarize the results of the business

Offered to B.Sc. (Mathematics)

Course Code: 20MAU11

Course Name: Principles of Accountancy

- CO1 Identifying the Concepts and Conventions of accounting and understanding the basic terms of accounting
- CO2 Understanding the Preparation of Journal, Ledger, Trial Balance and final accounts for Sole traders
- CO3 Analyzing the bank reconciliation statement to understand banking concepts
- CO4 Applying the concepts of Average due date and Account Current

Offered to B.Sc. (Catering Science & Hotel Management)

Course Code: 20CHU15

Course Name: Hospitality Accounting

- CO1 Outlining the Basic terms of accounting and its Concepts and Conventions.
- CO2 Understanding and Applying the recording business transactions in the form of Journal, Ledger, subsidiary books and Preparation of Trial Balance.
- CO3 Relating the cost concepts and cost calculations in terms of hotel industry
- CO4 Understanding and Applying the concept of Front office accounting in hotel industry.

SEMESTER IV
Offered to B.Sc. (Mathematics)

Course Code: 20MAU16

Course Name: Financial Accounting

- CO1** Identifying and Understanding about various methods of depreciation in financial statements.
- CO2** Understanding the method of Preparation of cost sheet
- CO3** Analysing and explaining the conceptual framework of management accounting and budgeting
- CO4** Providing the knowledge about Computerized Accounting System

Offered to B.Sc. (Information Technology), B.C.A.

Course Code: 20ITU18/ 20CAU18

Course Name: Business Accounting

- CO1** Describe the need and importance of various accounting modes in business
- CO2** Interpret the application of various modes in accounting
- CO3** Relating various concepts in methods of accounting
- CO4** Preparing of books of accounts and summarize the results of the business

Offered to B.Sc. (Catering Science & Hotel Management)

Course Code: 20CHU28

Course Name: Human Resources Management

- CO1** Remembering the various aspects of Human relations in the organization.
- CO2** Understanding the Human resource planning.
- CO3** Applying the policies and practice of the primary areas of human resource management, including staffing, training and compensation.
- CO4** Understanding the importance of career planning and succession planning and Linking the mobility of employees and their grievances

Course Outcomes for Allied Computer Science Courses

SEMESTER III

Offered to B.Sc. (Catering Science and Hotel Management)

Course Code: 19CHU20

Course Name: Allied Practical: Computer
Application in Hotel Industry

- CO1** List out the requirements for the given word program.
- CO2** Implement interactive web page.
- CO3** Use their skills to find out various current IT trends
- CO4** Explain needs for software specifications also they can classify different types of software requirements and their gathering techniques.

Course Code: 20CHU18

Course Name: Practical: VII Hospitality
Information Systems

- CO1** Defining the basic tools to develop a simple word program using Microsoft office.
- CO2** Paraphrasing the core data details from various interactive web pages.
- CO3** Choosing the techniques to transfer and extract multiple files from innumerable social media.
- CO4** Collaborating the trending techniques to induction forums.

SEMESTER IV

Offered to B.Sc. (Biotechnology)

Course Code: 19BTU15

Course Name: Allied IV - Python Programming

- CO1** Deliberate Python syntax and semantics and be fluent in the use of Python flow control and functions.
- CO2** Understand, run and manipulate Python Programs using core data structures.
- CO3** Apply proficiency in handling Strings and File Systems.
- CO4** Able to analyze Dictionaries and use Regular Expressions.

Course Code: 19BTU17

**Course Name: Allied Practical III -
Programming using Python Lab**

- CO1** Deliberate Python syntax and semantics and be fluent in the use of Python flow control and functions.
- CO2** Understand, run and manipulate Python Programs using core data structures.
- CO3** Apply proficiency in handling Strings and File Systems.
- CO4** Able to analyze Dictionaries and use Regular Expressions.

Course Code: 20BTU16

Course Name: Allied IV - Python Programming

- CO1** Understand Python syntax and semantics and be fluent in the use of Python flow control and functions.
- CO2** Associating the Dictionaries and keywords to form python programming Regular Expressions.
- CO3** Interpreting to apply proficiency in handling the Strings and File Systems.
- CO4** Programming, run and manipulate Python Programs using core data structures.

Course Code: 20BTU18

**Course Name: Allied Practical IV -
Programming using Python Lab**

- CO1** Exp Understanding the basic principles of Python programming language
- CO2** Implementing the logical skills using python programming
- CO3** Apply the concepts of Conditional using python
- CO4** Developing the ability to apply mathematical skills

SEMESTER II

Course Code: 21BTP11

**Course Name: Allied R Programming
for Biologists**

- CO1** Understanding and developing GUI Applications
- CO2** Experimenting components in UI
- CO3** Understand the concepts of Objects in R
- CO4** Creating the application with Dataset

Course Code: 21BTP14

**Course Name: Allied Practical VI: R
Programming For Biologists**

CO1 Create a statistical application for analyzing a Data

CO2 Able to demonstrate Graphs in R Programming

CO3 Demonstrate File handling methods in R

CO4 Statistical analysis in R

Course Outcomes for Allied Mathematics Courses

SEMESTER III

Offered to B.Com. (Corporate Secretaryship)/ B.Com. (Information Technology)/ B.Com. (International Business)/ B.Com. (Banking & Insurance)/ B.Com. (Accounting & Finance)/ B.Com./ B.Com. (Computer Applications)/ B.Com. (Professional Accounting)

Course Code: 19CSU11/19CIU12/19CBU12/
19BAU12/ 19CFU12/19COU12/
19CCU12/19PAU12

Course Name: Business Mathematics

- CO1 Learn to find Arithmetic and Geometric progression
- CO2 Understand the business related Simple and compound interest problems and Differentiation
- CO3 Apply graphical method to solve LPP
- CO4 Solve problems in Interpolation using Newton's and Lagrange method
- CO5 Learn to find Arithmetic and Geometric progression

Course Code: 19CSU16/19CIU17/19CBU17/
19BAU17/ 19CFU17/19COU17/
19CCU17/19PAU17

Course Name: Business Statistics

- CO1 Learn about the basics in statistics
- CO2 Understand about the Measures of central tendency.
- CO3 Apply Index numbers and time series.
- CO4 Solve problems in Correlation and Regression