

## DEPARTMENT OF B.A.

### VISSION

Our Goal is to Encourage Students to Develop Strong Critical Thinking, Analytical Reasoning and Built-up of Leadership.

### MISSION

The Faculty of Arts and Social Sciences is Dedicated to Delivering The Highest Quality Arts, Humanities and Social Science Education.

## Programme- B.A.

### Programme Outcomes

PO1	To enable the students to understand fundamental concepts in Economics, History, Geography and Marathi subjects respectively
PO2	To acquaint the learners with various genres of Marathi literature
PO3	To understand the relationship between literature and society and reflection of Universal truths
PO4	To appreciate world classics in the realm of British, American and Indian Literature
PO5	To develop communication skills amongst the students for better employability
PO6	To make learners sensitive about environment issues and sustainable development
PO7	To understand importance of social, political, economic ethical and human values in life
PO8	To enable the learners to think logically and bridge the gap between local and global environment
PO9	To make the students to have better personality traits

# Bachelor of Arts

## Department of Economics

### Programme Specific Outcomes

PSO1	Students will able to understand the basic concepts of economics.
PSO2	Students will learn the application of different concepts of economics in practical field.
PSO3	Students will able to appear in different fields of economics.
PSO4	Students can participate in various examinations linked to economics.

### Class: F.Y.B.A. (Economics)

#### Semester I

##### Course (Paper) Name and No.:

##### Micro Economics- I

CO1	Learners will understand the concepts of micro economics.
CO2	Learners will able to understand the ten principles of economics.
CO3	Learners will understand the structure of market, as well as demand and supply.
CO4	Learners will understand the nature of consumer's.

#### Semester II

##### Course (Paper) Name and No.:

##### Macro Economics- I

CO1	Learners will understand the process of production analysis.
CO2	Learners will get with the concepts of cost and Revenue analysis.
CO3	Learners will understand the details about factor pricing and their rewards.
CO4	Learners will understand equilibrium of different market structures.

## **Class: S.Y.B.A. (Economics)**

### **Semester III**

#### **Course (Paper) Name and No.: Macro Economics - II**

CO1	Learners will learn about various types of income.
CO2	Learners will study the theories related to consumption.
CO3	Learners will learn the supply of money and demand for money.
CO4	Learners will understand the banking structure.

#### **Course (Paper) Name and No.: Public Finance - III**

CO1	Learners will understand the basic concepts of public finance.
CO2	Learners will get information about budget and tax structure.
CO3	Learners will know public expenditure and debt.
CO4	Learners will know the sources of income and ways to expenditure.

### **Semester IV**

#### **Course (Paper) Name and No.: Macro Economics - II**

CO1	Learners will understand the detail concept of Inflation.
CO2	Learners will understand fiscal and monetary policies.
CO3	Learners will understand post Keynesian Economics.
CO4	Learners will understand external sector and different exchange rates.

#### **Course (Paper) Name and No.: Indian Economy -III**

CO1	Learners will know the introductory part of the Indian Economy.
CO2	Learners will understand the nature of agriculture sector of the Indian Economy.
CO3	Learners will get the details about industrial sector of India.
CO4	Learners will be able to know service sector of Indian Economy.

## **Class: T.Y.B.A. (Economics)**

### **Semester V**

**Course (Paper) Name and No.:**  
**Advanced Micro Economics -VII**

CO1	Learners understand the monopoly situation.
CO2	Learners are able to discriminate how the monopoly and oligopoly.
CO3	Learners are studied the equilibrium concept and social welfare of the people.
CO4	Learners are studied the Nash equilibrium

**Course (Paper) Name and No.:**  
**Economics of Development –VIII**

CO1	Learners will get familiar with concepts of growth and development.
CO2	Learners will able to understand the role of factors of development.
CO3	Learners will study effects of poverty, inequality on development.
CO4	Learners will think about sustainable development

**Course (Paper) Name and No.:**  
**Economics of Agriculture and cooperation -IX**

CO1	To get the role of agriculture in economic development.
CO2	To know the institutional and non-institutional sources of credit and micro finance.
CO3	To recognize the importance of marketing in agriculture.
CO4	To understand various agriculture price and policy

**Course (Paper) Name and No.:** Research  
**Methodology - X**

CO1	Learners will study the concepts of research.
CO2	Learners will study the elements of research methodology.
CO3	Learners will study the different sources of data for research.
CO4	Learners will study the process and analysis of data

**Course (Paper) Name and No.:**  
**Environmental Economics - XI**

CO1	Learners will study the environment and its importance in development.
CO2	Learners will study the various environmental policies for sustainable development.
CO3	Learners will study about environmental improvement.
CO4	Learners will study the environmental problems.

**Course (Paper) Name and No.:**  
**History of Economic Thought - XII**

CO1	Learners are studied the classical thought of economist.
CO2	Learners are understand the Marshall and Schumpeter's historical thought
CO3	Learners are studied the Keynesian views.
CO4	Learners are able to discriminate the Keynesian and post Keynesian views.

## **Semester VI**

**Course (Paper) Name and No.:** **Advanced Macro Economics - XIII**

CO1	To study the goods market and the open economy.
CO2	To study the financial market.
CO3	To study the exchange rate crisis.
CO4	To study the international monetary situation

**Course (Paper) Name and No.:** **International Economics -XIV**

CO1	Learners are studied the importance of international economics.
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CO2	Learners are studied the various modern theories of international trade.
CO3	Learners are learned how trade is an engine of economic growth.
CO4	Learners understand the trade policy and regionalism

**Course (Paper) Name and  
No.: Economics of  
Agriculture and cooperation  
-XV**

CO1	To understand the important feature of co-operation.
CO2	To get need, structure and progress of co-operative finance.
CO3	To know the role and types of co-operative agro Industries.
CO4	To know the role of co-operative organization in India

**Course (Paper) Name and  
No.: Research Methodology  
– XVI**

CO1	Learners will study statistical applications in research.
CO2	Learners will study index numbers.
CO3	Learners will study hypothesis formulation and testing.
CO4	Learners will study research report writing

**Course (Paper) Name and  
No.: Environmental  
Economics - XVII**

CO1	Learners will study the environment and its importance in development.
CO2	Learners will study the various environmental policies for sustainable development.
CO3	Learners will study about environmental improvement.
CO4	Learners will study the environmental problems.

**Course (Paper) Name and  
No.: History of Economic**

## Thought - XVIII

CO1

Learners are studied the classical thought of economist.

CO2

Learners are understand the Marshall and Schumpeter's historical thought

CO3

Learners are studied the Keynesian views.

CO4

Learners are able to discriminate the Keynesian and post Keynesian views.

# Department of Geography

## Programme Specific Outcomes

PSO1	Understand, coherently and effectively about various genres of Geography.
PSO2	Understanding the diverse concepts in the field of Geography.
PSO3	Understand global and regional patterns of cultural, political and economic institutions, and their effects on exploitation of natural resources and landscapes.
PSO4	Understand need for protection and conservation of natural resources.
PSO5	Develop basic skills in practical Geography and its industrial applications.

## Course Outcomes

### Class: F.Y.B.A. (Geography)

#### Semester I

#### Course (Paper) Name and No.: Paper No. I – Human Geography

CO1	Understand comprehensibly the nature and scope of Human Geography
CO2	Understanding the composition and structure of the interior of the earth and the types Rocks.
CO3	Understand the Diastrophic and catastrophic movements of the earth surface
CO4	Understand the concept and types of weathering and erosion.
CO5	Understand the erosional and depositional landforms by the erosional agents.
CO6	Identification of contours, slopes and drawing of sections to depict contour landforms.

#### Semester II

#### Course (Paper) Name and No.: Paper No. I – Environmental Geography

CO1	Understand comprehensibly the nature, scope, approaches, branches and concepts in Human Geography
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CO2	Understanding the concept, types and patterns of rural and urban settlements.
CO3	Understand the determinants on growth, distribution and problems of population.
CO4	Understand the concept, causes, types, trends and consequences of migration.
CO5	Able to construct and interpret of line graphs and flow diagrams and other techniques.

## **Class: S.Y.B.A. (Geography)**

### **Semester III**

#### **Course (Paper) Name and No.: Paper No. II - An Introduction to Climatology**

CO1	Understand the introduction to Climatology considering weather & climate, role of climate in human life, aims, nature, scope, and some other sub division of the course.
CO2	Understand weather phenomena winds, humidity, precipitation and winds.
CO3	Understand the process, methods of weather forecasting and climatic changes
CO4	Able to read and interpret the weather map and to construct the various graphs related to climatology.

#### **Course (Paper) Name and No.: Paper No. III – Physical Geography of India**

CO1	Understand importance of the location and the geographical personality of India.
CO2	Understand the variability of drainage pattern and climate in India.
CO3	Study of problems related to soil and forest depletion and their conservation methods.
CO4	Study of problems related to minerals and power resources and their conservation methods
CO5	Show the geographical features in the map of India.
CO6	Read, convert and prepare the map scale.

### **Semester IV**

#### **Course (Paper) Name and No.: Paper No. II - An Introduction to Oceanography**

CO1	Understand importance and physical structure of ocean.
CO2	Knowledge about effect of ocean Currents.
CO3	Understand the relationship between man and ocean.
CO4	Study about movements of ocean water
CO5	Read and interpret the bathymetrical maps.

**Course (Paper) Name and No.: Paper  
No. III – Agriculture Geography of  
India**

CO1	Understand the introduction to agriculture, nature, scope, significance and approaches of agriculture geography.
CO2	Understand features, determinants, major crops and problems of Indian agriculture
CO3	Understand the history, components and impacts of green revolution in India.
CO4	Understand the development of recent trends in agriculture in India.
CO5	Interpret the thematic maps and draw the statistical diagrams and graphs

**Class: T.Y.B.A. (Geography)  
Semester V**

**Course (Paper) Name and No.:  
Geography of Settlements**

CO1	Understand the nature and scope of Settlement Geography and the characteristics of rural and urban settlements.
CO2	Understand the structure of house and building materials, regional variations of rural settlement in India.
CO3	Understand the history of world settlements and factors responsible for world settlements.
CO4	Understand the classification and morphology, pattern and nature and process of rural and urban settlements
CO5	Understand the process of urbanization, urban problems and smart cities in India

**Course (Paper) Name and No.:  
Geography of Maharashtra**

C01	Understand the location, administrative setup and geographical personality of Maharashtra
C02	Understand the drainage and climate in Maharashtra
C03	Understand the natural and human resources of Maharashtra
C04	Understand the agriculture, fishing and livestock resources in Maharashtra.
C05	Understand the growth and development of industries, trade and transport in Maharashtra

**Course (Paper) Name and No.:**

**Population Geography**

C01	Understand the nature, scope, importance and relation with other social sciences of Population Geography
C02	Understand the structure, growth, density & distribution of population in India and World.
C03	Get knowledge about population theories.
C04	Understand the causes, consequences and recent trends of migration in India
C05	Understand the contemporary issues of population in India.

**Course (Paper) Name and No.: Tools and Techniques In Geography For Spatial Analysis-I (Practical)**

C01	Understand the basic concept and types map projections.
C02	Understand the Basic elements of map and able to area calculation.
C03	Able to read and interpret of topographical maps.
C04	Able to use the computer with basic Microsoft and SPSS software's.
C05	Able to prepare the thematic maps by using different techniques

**Course (Paper) Name and No.: Regional Planning and Development**

C01	Understand the concept, nature and problems of Regional Planning
C02	Gain knowledge about definition of region, evolution and types of regional planning.
C03	Understand the concept, strategies and measurements of regional disparities and different models of regional development.
C04	Understand the regional planning of India.

**Course (Paper) Name and No.:**

**Geography of Resources**

CO1	Understand the concept, factors, importance and classification of resources.
CO2	Know the over exploitation and conservation measures of natural resources.
CO3	Learn the importance, consumption, problems and Conservation methods of water, forest, soil and mineral resources.
CO4	Understand the concept and distribution of human resources.

**Semester VI**

**Course (Paper) Name and No.:**

**Environmental Geography**

CO1	Understand the nature, scope, importance and man-environment relationship in Environmental Geography
CO2	Understand the Structure, functions and types of ecosystem.
CO3	Acquire knowledge about biodiversity and its importance and Management.
CO4	Understand the concept, types, distribution and hotspots of biodiversity
CO5	Understand environmental problems there Cause, Effect and Remedies.
CO6	Understand the Sustainable Development and Environmental Management methods in India.

**Course (Paper) Name and No.:**

**Geography of Tourism and Recreation**

CO1	Understand about nature, scope, development and factors of tourism development
CO2	Understand about infrastructure and ancillary services for tourism
CO3	They understand about types and impacts of tourism.
CO4	Understand Planning and organization about tourism
CO5	Understand the potential of tourism sectors in Maharashtra and India

CO6

Know about national tourism policy.

**Course (Paper) Name and No.: Tools and Techniques in Geography for Spatial Analysis-II (Practical)**

CO1

Understand the Meaning and types of data and its presentation.

CO2

Understand and able to solve the examples of measures of central tendency, dispersion and deviation and correlation, regression and hypothesis testing.

CO3

Able to collect and analysis of data sampling.

CO4

Able to collect the field data, its processing and writing of research report.

**Course (Paper) Name and No.: Economic Geography**

CO1

Understand the nature, scope branches and approaches of Economic Geography

CO2

Know the human economic activities

CO3

Understand the mineral resources and industrial development

CO4

Understand the Weber's industrial location theory

CO5

Understand the importance and pattern of transport and international trade

CO6

Understand the levels of economic development, Special Economic Zones and related issues in India.

**Course (Paper) Name and No.: Social Geography**

CO1

Understand the nature, scope, and concept, relationship between culture and social environment.

CO2

Understand the race, religion, language and tribes in India and the world.

CO3

Understand the social groups and its segregation.

CO4

Understand the contemporary social issues in India.

**Course (Paper) Name and No.:**  
**Research Methodology in Geography**

CO1

Students will be able to understand the concept, types and stages in the research methodology, formulation of research and research design.

CO2

Students will know methods of data collection and its processing and role of internet in research.

CO3

Students will be able to prepare the hypothesis and also be able to do the hypothesis testing by using computer and statistical techniques.

CO4

Students will be able to spatial and non-spatial data analysis in GIS software's and competent for research writing.

CO5

Students will be able to prepare the research report on any one theme in Physical Geography or Human Geography

## Department of History

### Programme Specific Outcomes

PO1	To understand the background of social, economic, religious, cultural and political life of people and compare it with present to achieve overall development of society.
PO2	The study of history impart the knowledge of the significant historical events and past mistakes and create awareness for avoid the mistakes in present for better future with peace, progress in diverse and global community.
PO3	History instil the idea of national integration and harmony as well as generates the feeling of nationalism and patriotism.
PO4	History develop curious approach and interest for historical facts, art and architecture, archaeological sites, museums and archives as the sources for research in history

### Course Outcomes

#### Class: F.Y.B.A. (History)

#### Semester I

#### Course (Paper) Name and No.:

#### History of Modern India (1857 C.E-1947 C.E)

CO1	The Learners will be able to understand the Modern History with regards to the struggles that their forefathers had undertaken to break the fetters of British Slavery.
CO2	The Learners will get well acquainted with the significant events, Freedom fighters, personas, political movements in the History of Modern India.
CO3	The Learners can envisage the whole process of Freedom struggle and learn from the mistakes in the past.
CO4	Learners will acquit an intensive and rare understanding of landmarks events and

personality

## **Semester II**

**Course (Paper) Name and No.:**

**History of Modern India**

CO1

To study how the seeds of Nationalism were sown in the Socio-Religious Reform Movements

CO2

Educational Development has enabled learners today to taste its sweet fruits

CO3

Learners will comprehend about the impact of the British Rule on Indian Economy.

CO4

To study the development of Subaltern factors in the History of Modern I

## **Class: S.Y.B.A. (History) Semester III**

**Course (Paper) Name and No.:**

**Ancient India from Earliest Times to 1000 AD**

CO1 Students will have better understanding of ancient period of Indian history.

CO2 They will be able to trace the continuity and change in historical perspective.

CO3 To understand the spiritual philosophy related to life through the study of ancient India

CO4 It will induce students to history of India In chronological framework.

**Course (Paper) Name and No.: Landmarks in World History**

CO1 The Learners will be able to understand the significant historical events of the world

CO2 The Learners understand how the whole world came out of the medieval dark ages.

CO3 The learners was aware of the Revolutions which gave very important concepts to world.

CO4 To understand the effects of global change on human life

## **Semester IV**

**Course (Paper) Name and No.:**

**History of Ancient India**



CO1 The course will enable the students to study the history of ancient India from an analytical perspective

CO2 It will acquaint the student with various approaches and interpretation of ancient history of India

CO3 The learners are made aware of the glorious era in the history of ancient India

CO4 The learners can be introduced to the art and architecture of south India

### **Course (Paper) Name and No.: Landmarks in World History**

CO1 The syllabus will enable the students to critically analysis of totalitarian rules res

CO2 The learners will understand about global events during two world wars and their impact on the world

CO3 They understand how arms race poses a threats to word peace and progress

CO4 Explaining the International Nationalism to students through this course

# Foundation Course

Department of Foundation Course

Class: F.Y. B.A./B.Com./B.Sc.

## Semester I

### Course (Paper) Name and No.: Foundation Course- I

CO1 To know about duties & responsibilities towards society

CO2 To aware about the socio-economic problems and diversified issues of society.

CO3 To impart knowledge of Globalization and make students aware about the problems in society. CO4 To create awareness about the fundamental rights according to Indian Constitution

CO5 To study key Aspect of political Process

## Semester II

### Course (Paper) Name and No.: Foundation Course- II

CO1 The learners would be acquainted with the sectors of the Indian Economy and its basic facets.

CO2 To help learners grasp the idea of Fundamental Rights and Duties according to Indian Constitution.

CO3 This will inspire learners to understand and take care of our Mother Earth.

CO4 This will aid to identify the problems within humans in the contemporary society and ways to deal with it.

CO5 The learners will learn how to cope up with stress and deal with conflicts.

## Semester III

### Course (Paper) Name and No.: Foundation Course- III

CO1 Student will able to understand about Right of SC, ST, Women, children,& people with disabilities.

CO2 Learners will able to understand about Environmental disaster

CO3 To understand about various Science & technology and their uses

CO4 Student will able to understand about verbal & non verbal communication, presentation skills

## Semester IV

## **Course (Paper) Name and No.: Foundation Course- III**

CO1 Student will able to understand about Right of SC, ST, Women, children,& people with disabilities.

CO2 Learners will able to understand about Environmental disaster

CO3 To understand about various Science & technology and their uses

CO4 Student will able to understand about verbal & non verbal communication, presentation skills

**Faculty of Commerce**

**Programme- B.COM.**

**Programme**

**Outcomes**

**PO1**

**Understand the fundamental concepts of accounting practices in India and in the International Market.**

**PO2**

**Gain advanced knowledge in the field of traditional and modern accounting practices.**

**PO3**

**Obtain knowledge and skills in the subject of Corporate Financial Reporting**

**PO4**

**Have analytical skills to critically evaluate the scope and importance of accounting information for making effective decisions.**

**PO5**

**To develop communication skills amongst the students for better employability**

**PO6**

**To make learners sensitive about environment issues and sustainable development**

**PO7**

**To understand importance of social, political, economic ethical and human values in life**

**PO8**

**To enable the learners to think logically and bridge the gap between local and global environment**

**PO9**

**Identify, analyze and solve the problems of various issues in accounting and finance through different tools and techniques.**

**Department of Commerce**

**Bachelor of Commerce**

**Programme  
Specific  
Outcomes**

- PSO1**            **The students will be able to understand the basic concepts of Final Accounts of Manufacturing Concern, Partnership Firms, Limited Liability Partnership and Private Limited Companies**
- PSO2**            **The students will be able to Understand the basics of Auditing**
- PSO3**            **The students will be able to understand the concepts of Departmental Accounting, Hire Purchase Accounting, Consignment Accounting, Branch Accounting, Single Entry, Fire Insurance Claim, Piecemeal Distribution of Cash, Amalgamation of Firms, Conversion of Partnership Firms into Limited Company, Redemption of Preference Shares and Debentures, Treatment of Profit Prior to Incorporation, Personal Investment Accounting, Accounting of transactions involving Foreign currency, statement of underwriters liability.**
- PSO4**            **The students will be able to understand the basic concepts related to Companies, its Final Accounts, Internal Reconstruction, Buyback of Shares, Amalgamation, Absorption and External Reconstruction and liquidation of company.0**

**Class: F.Y.B.COM. (Semester- I)**

**Course (Paper) Name and No.:**  
**Accountancy & Financial**  
**Management-I**

- |            |   |
|------------|---|
| <b>CO1</b> | <b>Students will get an insight. Students will be able to solve practical problems on inventory valuation by FIFO and Weighted Average Method</b>   |
| <b>CO2</b> | <b>Students will be able to recognize capital and revenue – expenditure and receipts. Students will be able to solve practical problems regarding Final Accounts of Manufacturing Concern</b> |
| <b>CO3</b> | <b>Students will be able to solve practical problems regarding Hire Purchase Accounting.</b>  |
| <b>CO4</b> | <b>Students will be able to solve practical problems regarding Departmental Accounting</b>  |

**Semester I**

**Course (Paper)**  
**Name and No.:**

**Commerce-I**

- |            |  |
|------------|--|
| <b>CO1</b> | <b>Learn the scope of business and impact of internal and external environment on business</b> |
|------------|--|

- CO2** Gain knowledge of Business planning process and aspects of feasibility and project report
- CO3** Learn about problems and promotion of women entrepreneurship and get encouraged from study of entrepreneurship competencies and discover about Intrapreneur concept
- CO4** Be aware of importance of Service Sector with special focus on the retail sector, Business Process Outsourcing, net banking and E-commerce

**Class: F.Y.B.Com.**

**Business Economics-I**

**Semester I**

**Course (Paper) Name  
and No.: Business  
Economics-I**

- CO1** Students are introduced to basic tools for economic analysis and know how they operate in case of an individual economic unit
- CO2** Students are able to calculate, based on data, the impact of pricing decisions of individual firms on revenue and profit
- CO3** Students are able to understand the relationship between cost and output, recognize the economic impact of learning in the long run and calculate the break-even out level for individual firms
- CO4** Students are able to appreciate the impact of various output scale and input combination decisions made by the individual firms.

**Course (Paper) Name and No.:**  
**Business Communication-I**

- CO1** After successful completion of the course the learner should be able to enhance his Listening, Speaking, Reading and Writing skills to meet the challenges of the world
- CO2** Learners will get information about budget and tax structure.
- CO3** Learners will know public expenditure and debt.
- CO4** Learners will know the sources of income and ways to expenditure.

**Course (Paper) Name and No.:** Environmental Studies-I

**Semester I**

- CO1** Understands the seriousness behind conservation of resources and concepts related to sustainable development improvement of quality of life.
- CO2** It will help to understand the complexities of our natural environment and relations between different components of environment
- CO3** Students will understand the migration pattern of population in the world and its implications. 2)students will become aware about the various efforts taken



**CO4**

**Students will be able to do investigative studies on various environmental issues related to geographical location of the place.**

**Course (Paper) Name and No.:**  
**Mathematical and Statistical**  
**Techniques-I**

**CO1**

**Students will be able to apply counting principles like combination and permutation in various problems**

**CO2**

**Students will be able to understand the concept of Shares and Mutual funds, able to determine profit, rate of interest etc for the investment.**

**CO3**

**Students will be able to calculate probability of basic real life problems**

**CO4**

**Students will be able to apply mean, mode, median, standard deviation etc. in different areas of commerce accounts and economics**

**Course (Paper) Name and No.: Foundation Course-I**

**Semester I**

**CO1 Students are made to understand the religious, linguistic and cultural diversity of the Indian society and its characteristics**

**CO2 Students are able to describe the nature of inequality and its causes and consequences on the society**

**CO3 Students are made to understand the nature of inequality caused due to these problems and find the solution.**

**CO4 Students are able to understand the nature of preamble, features of the constitution and significance of fundamental duties**

**CO5 Students are able to understand the working of the local self-government like municipal corporation, Z.P. Gram Panchayat etc.**

**SEMESTER II**

**Course (Paper) Name and No.:**

**Accountancy & Financial Management-  
II**

**CO1**

**Students will be able to convert incomplete records into complete records to facilitate preparation of final accounts.**

**CO2**

**Students will be able to understand the concept and practical aspect of Consignment Account**

**CO3**

**Students will be able to solve practical problems by Debtors System and Stock and Debtors System of Dependent Branch.**

**CO4**

**Students will be able to solve practical problems on fire insurance claim**



**Course (Paper)**

**Name and No.:**

**Commerce-II**

**CO1**

**Learn the scope of business and impact of internal and external environment on business**

**CO2**

**Gain knowledge of Business planning process and aspects of feasibility and project report**

**CO3**

**Learn about problems and promotion of women entrepreneurship and get encouraged from study of entrepreneurship competencies and discover about Intrapreneur concept..**

**CO4**

**Be aware of importance of Service Sector with special focus on the retail sector, Business Process Outsourcing, net banking and E-commerce**



**Course (Paper) Name and  
No.: Business  
Communication-II**

**CO1**                      **After successful completion of the course the learner should be able to enhance his Listening, Speaking, Reading and Writing skills to meet the challenges of the world.**

**Course (Paper) Name and No.:  
Environmental Studies-II**

**CO1**

**Students will know how SW is affecting the environment and its resources with the help of few case studies**

**CO2**                      **Students will understand that how industries and agriculture too**



is affecting the natural environment

**CO3** Students will know about the sustainable way of practicing agriculture and industrialization for the conservation of resources and protection of the environment.

**CO4** Students will be able to get information to develop a strategic overview of the environmental assets of the region

**Course (Paper) Name and No.:**  
**Mathematical and Statistical**  
**Techniques-II**

**CO1** Students will be able to use derivatives for solving various commercial problems.

**CO2** Students will be able to calculate annuity, EMI and interest for their personal as well as real life investments

**CO3** Students will be able to correlate different entities and are able to give a linear relation between those values.

**CO4** Students will have basic idea of probability and its distributions

**Course (Paper) Name and No.:**  
**Foundation Course-II**

**CO1**

**Students are able to understand the meaning of basic concepts related to globalization and its impact on the Indian economy.**

**CO2**

**Students are made to understand the significance of basic human life and fundamental rights in the modern society**

**CO3**

**Students are able to understand nature of environmental problems and their duty towards protection of the environment**

**CO4**

**Students are able to explain the causes of stress, conflict, aggression and violence**

**BACHELOR OF COMMERCE**  
**COURSE OUTCOMES**

**S. Y. B. Com**

**SEMESTER III**

**Course (Paper) Name and No.:**  
**Accountancy & Financial**  
**Management-III**

**CO1**

**Students will get the insight of Final Accounts of a partnership**

**firm in which admission/retirement/death took place d**

**CO2**

**Students will get the insight of piecemeal distribution of cash on dissolution of cash.**

**CO3**

**Students will get the insight of amalgamation of Firms and conversion of partnership firms into limited companies.**

**Course (Paper) Name and No.:**  
**Commerce-III**

**CO1**

**Get an insight into principles practices and techniques of company management**

**CO2**

**Learn the basics of management functions applicable for effective management of a company.**

**CO3**

**Learn about the application of principles and techniques of management in the fields such as production and finance**

**CO4** Study contemporary terms as well as trends in the field of production, quality control, inventory management and control as well as finance

**Course (Paper) Name and No.:**  
**Business Economics-III**

**CO1** Students are expected to understand the significance of the macroeconomic concepts national income accounting

**CO2** Students are able to explain use of Keynesian theory to provide a solution to the macroeconomic problems

**CO3** After studying this unit, students are able to understand the development of Post-Keynesian economics.

**CO4** Students are able to understand the connection between money supply and inflation

**Course (Paper) Name and No.:**  
**Business Law-I**

**CO1**  
Students are introduced to basic tools for understanding law and basic concepts of Contract Law

**CO2**

**Students are able to analyze detailed provisions of how to make and terminate a contract legally in India**

**CO3**

**Students are able to appreciate the application of contractual obligations in different practical situations**

**CO4**

**Students are able to understand specific application of Contract law in sale and purchase of Goods**

**Course (Paper) Name and No.:**

**Financial Accounting and Auditing V- Management Accounting**

**CO1** Identify problems associated with relying on financial accounting information for various managerial decision making

**CO2**

**Learns the application of management accounting tools for pricing, budgetary control, cost allocation and performance evaluation**

**Course (Paper) Name and No.:**

**Foundation Course-III**

**CO1**

**Students are introduced to basic reasons of Human RightViolations and their resistance, legally and constitutionally**

**CO2**

**Students are able to analyze situations which bring forth disasters and how to effectively manage them**

**CO3**

**Students are able to appreciate the application of science and develop a scientific temper.**

**CO4**

**Students are expected to be have understanding of basic level communication skills**

**CO5**

**Students get hands-on experience with many issues which they are learning in classrooms.**

**Course (Paper) Name and No.:**

**Advertising-I**

**CO1**

**Get an understanding of advertising as a tool of Integrated Marketing Communication**

**CO2**

**Obtain knowledge about economic and social impact of advertising and thereby ethical aspects in advertising**

**CO3**

**Understand different types of advertising and role of advertising agency.**

**CO4**

**Be aware of various mediums of advertising and understand its benefits and disadvantages.**

**CO5**

**Learn about techniques of using and creating Copy, Slogan, headlines, illustrations and logo for effective construction of advertisements.**

**SEMESTER IV**

**Course (Paper) Name and No.:**

**Accountancy & Financial Management-IV**

**CO1**

**Students will get the insight of types of companies, issue and forfeiture of shares and debentures.**

**CO2**

**Students will get the insight of Redemption Of Preference shares and Debentures.**

**CO3**

**Students will get the insight of ascertainment and treatment of profit prior incorporation.**

**CO4**

**Students will get an insight into principles for ascertainment and treatment of profit prior to incorporation.**



**Course (Paper) Name and No.:**

**Commerce-IV**

**CO1**

**Get an insight into principles, practices and techniques of company management.**

**CO2**

**Learn the basics of management functions applicable for effective management of a company.**

**CO3**

**Learn about the application of principles and techniques of management in the fields such as production and finance.**

**CO4**

**Study contemporary terms as well as trends in the field of production, quality control, inventory management and control as well as finance.**

**Course (Paper) Name and No.:**

**Business Economics-IV**

**CO1**

**Students are expected to gain insight in understanding basic concepts of public finance.**

**CO2**

**Students are expected to understand basic concepts about the taxation, tax burden and its effects.**

**CO3**

**After studying this topic, students  
about government expenditure**

**are expected to have knowledge**

**CO4**

**After studying this unit students are able to understand the implications of budget and Fiscal  
management.**

**Course (Paper) Name and No.:**

**Business Law-II**

**CO1**

**Students are able to understand the significance and basic concept of the company form of  
organizations.**

**CO2**

**Students are now capable of understanding how far you need to be conscious, legally, while  
implementing various functions in a company**

**CO3**

**Students are introduced to**

**the market realities of Intellectual property Rights.**

**CO4**

**Students are capable of evaluating their relative merits and  
demerits**

**Course (Paper) Name and No.:**

**Financial Accounting and Auditing VI- Auditing**

**CO1**

**Discuss the need for an independent or external auditor**

**CO2**

**Understands the financial audit process beginning with accepting client s till communication of result to the clients**

**Course (Paper) Name and No.:**

**Foundation Course-IV**

**CO1**

**Students are introduced to basic Human Rights Protection available to a newage citizens**

**CO2**

**Students are expected to develop a sophisticated approach towards the environment and concern for nature.**

**CO3**

**Students are able to appreciate the application of science and develop a scientific temper.**

**CO4**

**Students are expected to be have understanding of basic**

**CO5**

**level communication skills and general idea about competitive examinations which they can attempt.**

**Course (Paper) Name and No.:**

**Advertising-II**

**CO1**

**Get an understanding of advertising as a tool of Integrated Marketing Communication.**

**CO2**

**Obtain knowledge about economic and social impact of advertising and thereby ethical aspects in advertising**

**CO3**

**Understand different types of advertising and role of advertising agency.**

**CO4**

**Be aware of various mediums of advertising and understand its benefits and disadvantages.**

**BACHELOR OF COMMERCE COURSE OUTCOMES**

**SEMESTER -V**

**T. Y. B. Com**

**Course (Paper) Name and No.:**

**Financial Accounting and Auditing VII- Financial Accounting**

**CO1**

**Students will be able to solve practical problems on Final Accounts of Companies**

**CO2**

**Students will be able to understand the provisions and to solve practical problems related to internal reconstruction.**

**CO3**

**Students will be able to understand the provisions and to solve practical problems related to buy back of shares.**

**CO4**

**Students will be able to solve practical problems on personal investment accounting**

**Course (Paper) Name and No.:**

**Financial Accounting and Auditing VIII- Cost Accounting**

**CO1**

**Students will get the insight of the concepts of cost accountancy, material cost and labor cost.**

**CO2**

**Students will get the insight of overheads, cost sheet and reconciliation of Profits as per financial accounts and cost accounts.**

**Course (Paper) Name and No.:**

**Commerce V- M.H.R.M (Marketing)**

**CO1**

**Get holistic idea about the evolution of marketing, contemporary trends in marketing and various marketing strategies (PPPP) to handle marketing activity of a business firm**

**CO2**

**Learn about the psyche of consumer behavior so as to handle them effectively**

**CO3**

**Be able to venture into the domain of marketing more confidently as he will be more equipped with the latest tools and techniques of marketing.**

**Course (Paper) Name and No.:**

**Business Economics-V**

**CO1**

**Students are expected to be familiar with the process of reforms and the improvements in social and economic infrastructure, to enable them to understand and appreciate the ongoing policy changes.**

**CO2**

**Students are expected to be familiar with the agricultural scenario in the county including the crucial issues of pricing and marketing to form**

**informed opinion.**

**CO3**

**After studying this unit, students are to have an in depth knowledge of the secondary and tertiary sectors of the economy and the problems facing them**

**CO4**

**Students are expected to become effective and productive participants of the financial sector and the various employment opportunities offered by it.**

**Course (Paper) Name and No.:**

**Export Marketing**

**CO1**

**Get an insight into the field of global and Indian export marketing practices**

**CO2**

**Learn about the procedural formalities required for undertaking export activity in the country**

**CO3**

**Know about the institutional structure, incentives and export promotion facilities initiated by the government**

**CO4**

**Learn about marketing mix strategies including Product, Price, Promotion and physical distribution ineffective marketing of exportable**

**Course (Paper) Name and No.:**

**Direct and Indirect Taxation Paper – I**

**CO1**

**Define the procedure of direct tax assessment.**

**CO2**

**Able to file ITreturn on**

**individual basis.**

**SEMESTER VI**

**Course (Paper) Name and No.:**

**Financial Accounting and Auditing IX- Financial Accounting**

**CO1**

**Students will be able to calculate purchase consideration by various methods and solving practical problems based on Amalgamation, Absorption and External Reconstruction of Companies**

**CO2**

**Students will be able to compute and handle exchange rate differences arising out of transactions involving Foreign Currency.**

**CO3**

**Students will be able to solve practical problems based on the liquidation of the company.**

**CO4**

**Students will be able to prepare statement of underwriter's liability**

**Course (Paper) Name and No.:**

**Financial Accounting and Auditing X- Cost Accounting**

**CO1**

**Preparation of Final**

**Accounts of Limited**

**CO2**

**Students will get the insight of cost recording systems.**

**CO3**

**Students will get the insight of contract costing and process costing.**

**CO4**

**Students will get the insight of standard costing and marginal costing.**

**Course (Paper) Name and No.:**

**Commerce VI- M.H.R.M (HR Management)**

**CO1**

**Learn about the invaluable role of HR in the effective management of business organization.**



**CO2**

**Get an idea about contemporary practices in the field of HRM**

**CO3**

**Know about the nature of challenges faced by HR managers in changing business environments in the millennium.**

**Course (Paper) Name and No.:**

**Business Economics-VI**

**CO1**

**Students are expected to gain insight into the various theories on trade.**

**CO2**

**Students are expected to be aware of the latest developments in international trade as well as gain knowledge on developments on Britain's relationship with the rest of Europe.**

**CO3**

**After studying this topic, students are expected to have gained adequate knowledge regarding the India's external sector and how the WTO provisions have impacted in India**

**CO4**

**After studying this unit students are to have gained enough knowledge on the exchange rate determination so that they can become active participation in the market.**

**Course (Paper) Name and No.:**

**Export Marketing**

**CO1**

**Get an insight into the field of global and Indian export marketing practices.**

**CO2**

**Learn about the procedural formalities required for undertaking export activity in the country**

**CO3**

**Know about the institutional structure, incentives and export promotion facilities initiated by the government**

**Course (Paper) Name and No.:**

**Direct and Indirect Taxation Paper – II**

**CO1**

**Students should be able to analyze indirect taxes.**

**CO2**

**Students should be able to calculate GST on various goods & services.**

## **COURSE OF BMS**

### **Mission**

To create responsible business leaders and achieve overall excellence

### **Vision**

- Create innovative skills among students
- Achieve overall excellence
- Inculcate values, ethics and leadership styles
- Collaborate with alumni, corporates and social organisations for sustainable development
- Inculcate habit of social service among students

### **Name of the Programme: Bachelor in Management Studies**

### **PROGRAMME OBJECTIVES:**

PO1: To provide in-depth theoretical & practical knowledge

PO2: To provide exposure to real life situations through case-studies, role plays, discussions and presentations.

PO3: To equip learners with skills required for management, finance, marketing and human resources.

PO4: To equip them with the skills required to function in any organization as well as starting their entrepreneurial venture.

PO5: To train them adopt a holistic view to real life business situations.

PO6: To inculcate a research aptitude and problem-solving approach in learners.

### **PROGRAMME OUTCOMES:**

After completion of the three years Bachelor of Management Studies (BMS) Programme, the learner will:

PO-1: Have comprehensive knowledge of Management , Marketing, Finance, Accounting and other areas of Management.

PO-2: Be able to identify problems in business and provide solutions for the same with contemporary knowledge of technology .

PO-3: Develop managerial skills, decision-making skills , presentation skills, interpersonal skills and soft skills and use appropriate ICT tools innovatively.

PO-4: Cultivate leadership qualities, entrepreneurial skills among learners and prepare them to work with ethical and moral values while working individually as well as in teams.

PO-5: Promote research acumen in business and critical thinking to find solutions to real life business situations.

PO-6: Build a concrete foundation for advanced studies in Commerce and Management and make them ready for employment.

**Program Specific Outcome:**

BMS (Marketing) Specialization in BMS (Marketing) has been designed to prepare graduating students for attaining the following specific outcomes:

1. PSO-1: Knowledge of principles of marketing, consumer behaviour, sales and distribution management and other areas of marketing will be enhanced.
2. PSO-2: Conceptual and analytical abilities required for decision making in marketing will be improved.
3. PSO-3: To be able to solve marketing problems in business with ethical and moral values.
4. PSO-4: - Develop an understanding of the multi-cultural dimensions, local, national and global marketing environment and its impact on marketing to make the learners industry ready.

## **Semester I**

### **1. Business Communication I**

#### **Course Objectives:**

- 1 The course is designed to analyze the role of communication in business.
- 2 The course intends to give hands on experience on Language and writing skills.

#### **Course Outcomes:**

After completion of this course the learner will be able to:

- CO1: Demonstrates an understanding of the methods and modes of communication. (Level: Understand)
- CO2: Illustrate ability in writing business and personal letters. (Level: Apply)
- CO3: Analyse different modes of communication. (Level: Analyse)
- CO4: Prepare reports and paragraphs on a given situation. (Level: Apply)

### **2. Foundation Course –I**

#### **Course Objectives:**

1. The subject helps in understanding the multi-cultural diversity of Indian Society through various segments.
2. The subject explains the Philosophy of Indian constitution and its impact on Political process.

#### **Course Outcomes:**

After completion of this course the learner will be able to:

- CO1: Describe the cultural diversity of Indian Society. (Level: Understand)
- CO2: Distinguish between diversity in society due to gender, caste system and culture. (Level: Analyse)
- CO3: Discuss the philosophy of the Indian Constitution. (Level: Understand)
- CO4: Analyse the political system in India. (Level: Analyse)

### **3. Foundation of Human Skills**

#### **Course Objectives:**

1. To understand the concept of Human Nature and its implementation in Group Behavior
2. To provide understanding of Organizational culture and its impact on Organizational process.
3. To understand the relevance of organizational creativity and work stress.

#### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Analyse individual behaviour and different personalities.

CO2: Discuss perception and group behaviour.

CO3: Illustrate an understanding for organizational process and culture.

CO4: Describe motivation, creativity and stress and the workplace.

#### **4. Business Law**

##### **Course Objectives:**

1. To understand the key elements of Contract Act.
2. To provide insights into company Law and Intellectual Property Rights (IPR).
3. To provide student with basic understanding of Business Law.

##### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Discuss the Contract Act, 1872 and Goods Act, 1930. (Level: Understand)

CO2: Apply the Consumer Protection Act, 1986. (Level: Apply)

CO3: Describe the Company Law. (Level: Understand) CO4: Explain the Intellectual property Rights. (Level: Understand)

#### **5. Business Statistics**

##### **Course Objectives:**

1. To acquaint the learners with various concepts of Statistics.
2. To understand the various methods and techniques of Statistics.

##### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Demonstrates an understanding of the concepts of Business Statistics.

CO2: Solve problems related to measures of central tendency, dispersion, co-relation and linear regression. (Level: Apply)

CO3: Prepare time series by various methods. (Level: Apply)

CO4: Describe probability distribution and decision making. (Level: Understand)

#### **6. Introduction to Financial Accounts**

##### **Course Objectives:**

1. To understand the concept of Accounting Standards and transactions.
2. To introduce the basic concepts of final Accounts.

##### **Course Outcomes:**

After completion of this course the learner will be able to:

- CO1: Describe the accounting principles and accounting standards.
- CO2: Describe the application of accounting standards.
- CO3: Prepare trial balance and practice depreciation accounting.
- CO4: Compute final accounts as per the Companies Act, 2013.

## **7. Business Economics I**

### **Course Objectives:**

1. To familiarize the students with elementary Principles of Economics and Business Economics.
2. To apply business analysis to the “firm” under different market conditions.
3. To apply economic models to examine current economic scenario and evaluate policy options for addressing economic issues.
4. To gain understanding of some Macroeconomic concepts to improve their ability to understand the business climate.

### **Course Outcomes:**

After completion of this course the learner will be able to:

- CO1: Explain the basic concepts of business economics.
- CO2: Demonstrate an understanding of demand, supply and production decisions.
- CO3: Compute the cost of production.
- CO4: Compare and contrast the different types of market structures.

## Semester II

### 1. Business Communication- II

#### Course Objectives:

1. The course is designed to analyze the role of communication in business.
2. The course intends to give hands on experience on Language and writing skills.

#### Course Outcomes:

After completion of this course the learner will be able to:

CO1: Apply principles of effective presentation.

CO2: Describe various methods of group communication.

CO3: Prepare trade letters.

CO4: Write reports and prepare summaries.

### 2. Foundation Course –II

#### Course Objectives:

1. To create right understanding of human values and soft skills to actualize these in their personality and behaviour of students leading to peace and harmony for sustainable success in career and happiness.
2. In order enable manpower to achieve success in profession and happiness in life, they need to possess universal human values and Soft Skills essential for fulfilling need of keeping harmony within self, family, job, society and world.
3. To acquaint students with UDHR and Fundamental Rights in Indian Constitution.

#### Course Outcomes:

After completion of this course the learner will be able to:

CO1: Discuss the concepts of liberalization, privatization and globalization.

(Level: Understand)

CO2: Apply the concept of human rights. (Level: Apply) Nagindas Khandwala College (Autonomous) 7 BMS 2020-21 Nagindas Khandwala College

(Autonomous)

CO3: Explain the concepts of environment, ecology and their interconnectedness.

(Level: Understand)

CO4: Appraise the causes of stress and conflict in individuals and society. (Level: Analyse)



### **3. Business Environment**

#### **Course Objectives:**

1. By studying the business environment, we can know the changes of business. This information is very useful for our business.
2. Every businessman should aware current environment of business. With this, he can think the future of his business in such environment.
3. One of the objective of the study of business environment that it can provide all the information which is needed for taking good decisions.
4. For making good business policies, we need to know and scan business through business environment.

#### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Discuss the concepts of micro and macro business environment. (Level: Understand)

CO2: Describe the political and legal environment in India. (Level: Understand)

CO3: Appraise the social, cultural, technological and competitive Environment. (Level: Analyse)

CO4: Demonstrate an understanding of the international environment with respect to GATT/WTO, globalization and FDIs. (Level: Apply)

### **4. Business Mathematics**

#### **Course Objectives:**

1. Mathematics is an important part of managing business. Business mathematics is used by commercial enterprises to record and manage business operations.
2. Commercial organizations use mathematics in accounting, inventory management, marketing, sales forecasting, and financial analysis.

#### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Illustrate understanding of elementary mathematics. (Level: Apply)

CO2: Explain matrices and determinants. (Level: Understand)

CO3: Describe the application of derivatives. (Level: Apply)

CO4: Understand numerical analysis. (Level: Understand)

### **5. Industrial Law**

#### **Course Objectives:**

1. To understand the key elements of Industrial Disputes Act, 1947
2. To provide insights into laws related to Health, Safety, Welfare and Social Legislation.
3. To provide student with basic understanding of Industrial Law.

**Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Discuss laws related to industrial Relations and Industrial Disputes. (Level: Understand)

CO2: Apply the laws related to Health, Safety and Welfare. (Level: Apply)

CO3: Explain the concepts related to Social Legislation. (Level: Understand)

CO4: Demonstrate an understanding for laws related to Compensation Management. (Level:

## 6. Principles of Marketing

**Course Objectives:**

1. To introduce the marketing concept and how we identify, understand and satisfy the needs of customers and markets.
2. To analyze companies and competitors and to introduce marketing strategy to increase awareness of the strategic and tactical decisions behind today's top performing brands.

**Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Explain the core concepts of marketing

CO2: Apply the concepts of segmentation, targeting, positioning and consumer behaviour.

CO3: Analyse the elements of the marketing mix. Compare and contrast the different strategies for promotion.

**Course Objectives:**

1. To familiarize the students with elementary Principles of Economics and Business Economics.
2. To apply business analysis to the "firm" under different market conditions.
3. To apply economic models to examine current economic scenario and evaluate policy options for addressing economic issues.
4. To gain understanding of some Macroeconomic concepts to improve their ability to understand the business climate.

**Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Explain the basic concepts of business economics.

CO2: Demonstrate an understanding of demand, supply and production decisions.

CO3: Compute the cost of production.

CO4: Compare and contrast the different types of market structures.

## **7.Principles of Management**

### **Course Objectives:**

1. To relate, discuss, understand the management principles, processes and procedures in consideration of their efforts on individual actions.
2. Knowledge and understanding of the subject will enable the student to gain valuable insights into the working of business and other organization.

### **Course Outcomes:**

After completion of this course the learner will be able to

CO1: Describe the concepts of management. (Level: Understand)

CO2: Apply principles of planning, decision making and controlling in organizations.  
(Level:

CO3: Discuss organizational management strategies. (Level: Understand)

CO4: Demonstrate of understanding business ethics, CSR and leadership. (Level:  
Apply)

## **Semester III**

### **1. Business Planning and Entrepreneurial Management**

#### **Course Objectives:**

1. Entrepreneurship is one of the major focus areas of the discipline of Management. This course introduces Entrepreneurship to budding managers.
2. To develop entrepreneurs and to prepare students to take the responsibility of full line of management function of a company.

#### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Demonstrate an understanding for entrepreneurial development.

CO2: Classify the various types of entrepreneurs.

CO3: Analyse a business plan.

CO4: Employ the steps involved in starting a business venture.

### **2. Accounting for Managerial Decisions**

#### **Course Objectives:**

1. To acquaint management learners with basic accounting fundamentals.
2. To develop financial analysis skills among learners.
3. The course aims at explaining the core concepts of business finance and its importance in managing a business

#### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Analyse and Interpret financial statements..

CO2: Calculate ratios and interpret their results

CO3: Prepare cash flow statements.

CO4: Apply working capital and receivables management.

### **3. Strategic Management**

#### **Course Objectives:**

1. The course is designed to understand different strategies and their role in organization.
2. The course helps to understand different environmental factors and strategy formulation and implementation.
3. The course explores different methods which business can adopt for their internationalization.

#### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Describe strategy and strategy management process.

CO2: Explain the importance of strategic business units.

CO3: Apply the principles of strategy formulation, implementation and control.

CO4: Discuss international strategies.

#### **4. Information Technology in Business Management**

##### **Course Objectives:**

1. To learn basic concepts of Information Technology, its support and role in management, to provide students with expertise in the technological aspects of management specially use of computers for solving business problems and making managerial decisions.
2. Module II comprises of practical hands-on training required for office automation. It is expected to have practical sessions of latest MS-Office software
3. To understand basic concepts of Email, Internet and websites, domains and security therein
4. To recognize security aspects of IT in business, highlighting electronic transactions, advanced security features.

##### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Apply the concepts of IT for management. (Level: Apply)

CO2: Prepare documents using office productivity software. (Level: Apply)

CO3: Describe consumer oriented E-Commerce. (Level: Understand)

CO4: Describe the various types of security threats. (Level: Understand)

Discipline

#### **5. Consumer Behaviour**

##### **Course Objectives:**

1. The objective of the course is to develop an understanding about the consumer decision making process and its applications in marketing function of the firms.
2. This course is meant to equip undergraduate students with basic knowledge about issues and dimensions of Consumer Behaviour. Students are expected to develop the skill of understanding and analyzing consumer information and using it to create consumeroriented marketing strategies.

**Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Apply knowledge of consumer behaviour in marketing.

CO2: Analyse determinants of consumer behaviour.

CO3: Illustrate the cultural Influences on consumer behaviour.

CO4: Explain the consumer decision making models.

**6 .Product Innovations Management****Course Objectives:**

1. To understand the concept of innovations and relevance of innovations in the present day scenario.

2. To understand the importance of protecting innovations and legal aspects related to innovations.

3. To study product innovations, process innovations and innovations diffusion.

4. To acquaint the students with stages in new product development.

**Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain the concepts of innovation and innovation management.

CO2: Apply the managerial aspects of innovation.

CO3: Contrast between product, process and new product strategy.

CO4: Demonstrate an understanding of diffusion of innovation.

**7. Foundation Course –III****Course Objectives:**

1. To create right understanding of human values and soft skills to actualize these in their personality and behaviour of students leading to peace and harmony for sustainable success in career and happiness.

2. In order enable manpower to achieve success in profession and happiness in life, they need to possess universal human values and Soft Skills essential for fulfilling need of keeping harmony within self, family, job, society and world.

3. To acquaint students with UDHR and Fundamental Rights in Indian Constitution

**Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Discuss the concepts of liberalization, privatization and globalization.

CO2: Apply the concept of human rights.

CO3: Explain the concepts of environment, ecology and their interconnectedness.

CO4: Appraise the causes of stress and conflict in individuals and society.

## **Semester IV**

### **1. Business Economics- II**

#### **Course Objectives:**

1. The course is designed to make students aware of the new trends in Business Economics.
2. The course intends to give learners hands on experience and learning in Business Economics.

#### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain the concepts of macroeconomics.

CO2: Apply the concepts of inflation and monetary policy.

CO3: Describe the constituents of fiscal policy.

CO4: Demonstrate the principles of international trade.

### **2. Business Research Methods**

#### **Course Objectives:**

1. The course is designed to inculcate the analytical abilities and research skills among the students.
2. The course intends to give hands on experience and learning in Business Research.

#### **Learning Outcome:**

1. Learners develop understanding on various types of research, objectives of doing research, research process, research design and sampling.
2. Learners develop understanding on data measurement and scaling techniques.
3. Learners understand basics of data analysis and report writing.

### **3. Production and Total Quality Management**

#### **Course Objectives:**

1. To acquaint learners with the basic management decisions with respect to production and quality management.
2. To make the learners understand the designing aspect of production systems.
3. To enable the learners apply what they have learnt theoretically.

#### **Course Outcomes:**

After the completion of the Course, the Learner will be able to  
CO1: Explain the components of production management.  
CO2: Apply the concepts of materials and inventory management at the workplace.  
CO3: Appraise the need for productivity and TQM in organizations.  
CO4: Apply quality improvement strategies.

### **4. Information Technology in Business Management-II**

#### **Course Objectives:**

1. To understand managerial decision-making and to develop perceptive of major functional area of MIS.
2. This module provides understanding about emerging MIS technologies like ERP, CRM, SCM and trends in enterprise applications.
3. To learn and understand relationship between database management and data warehouse approaches, the requirements and applications of data warehouse.
4. To learn outsourcing concepts. BPO/KPO industries, their structures, cloud computing.

#### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:  
CO1: Explain the concepts of MIS.  
CO2: Distinguish between ERP/E-SCM/E-CRM.  
CO3: Describe database and data warehouse.  
CO4: Analyse the need for outsourcing in business.



## **5. Integrated Marketing Communication**

### **Course Objectives:**

1. To equip the students with knowledge about the nature, purpose and complex construction in the planning and execution of an effective Integrated Marketing Communication (IMC) program
2. To understand the various tools of IMC and the importance of coordinating them for an effective marketing communication program.

### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain the concepts of various tools of integrated marketing communication.

CO2: Inculcate the ethical and moral consciousness in marketing communications.

CO3: Demonstrate comprehensive understanding of marketing communication theories and concepts.

CO4: Prepare a marketing communication brief for creative .

## **6.Rural Marketing**

### **Course Objectives:**

1. The objective of this course is to explore the students to the Agriculture and Rural Marketing environment so that they can understand consumer's and marketing characteristics of the same for understanding and contributing to the emerging challenges in the upcoming global economic scenario.

### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Discuss the concepts of rural marketing.

CO2: Compare rural and urban consumer behaviour.

CO3: Apply the rural marketing mix to business.

CO4: Analyse the different strategies used in rural markets.

## **7.Foundation Course –IV**

### **Course Objectives:**

1. To create right understanding of human values and soft skills to actualize these in their personality and behaviour of students leading to peace and harmony for sustainable success in career and happiness.

2. In order enable manpower to achieve success in profession and happiness in life, they need to possess universal human values and Soft Skills essential for fulfilling need of keeping harmony within self, family, job, society and world.

### **Course Outcomes:**

After completion of this course the learner will be able to:

CO1: Discuss the concepts of liberalization, privatization and globalization.

CO2: Apply the concept of human rights.

CO3: Explain the concepts of environment, ecology and their interconnectedness.

## **Semester V**

### **1. Logistics and Supply Chain Management**

#### **Course Objectives:**

1. To provide students with basic understanding of concepts of logistics and supply chain management.
2. To introduce students to the key activities performed by the logistics function.
3. To provide an insight in to the nature of supply chain, its functions and supply chain systems.
4. To understand global trends in logistics and supply chain management.

#### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain the concepts of logistics and logistics chain management.

CO2: Apply the elements of logistics mix to business.

CO3: Formulate logistics operations for optimum utilization of resources.

CO4: Analyse and apply global trends in logistics and supply chain management.

## **2. E-Commerce and Digital Marketing**

### **Course Objectives:**

1. To understand increasing significance of E-Commerce and its applications in Business and Various Sectors.
2. To provide an insight on Digital Marketing activities on various Social Media platforms and its emerging significance in Business.
3. To understand Latest Trends and Practices in E-Commerce and Digital Marketing, along with its Challenges and Opportunities for an Organisation.

### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain concepts of e-commerce and digital marketing.

CO2: Demonstrate e-business and its applications.

CO3: Compare online payment methods and security issues.

O4: Demonstrate the strategies for digital marketing.

## **3. Sales and Distribution Management**

### **Course Objectives:**

1. To develop understanding of the sales & distribution processes in organizations.
2. To get familiarized with concepts, approaches and the practical aspects of the key decision-making variables in sales management and distribution channel management and distribution channel **management.**

### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain concepts of sales and distribution management.

CO2: Apply market analysis and selling skills.

CO3: Compare different distribution channels.

CO4: Demonstrate methods of evaluation for sales and channel performance.

## **4. Customer Relationship Management**

### **Course Objectives:**

1. To understand concept of Customer Relationship Management (CRM) and implementation of customer relationship management.
2. To provide insight into CRM marketing initiatives, customer service and designing CRM strategy.
3. To understand new trends in CRM, challenges and opportunities **for organizations**

### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain concepts of customer relationship management.  
CO2: Apply CRM marketing initiatives.  
CO3: Compare different CRM strategies.  
CO4: Demonstrate new trends in CRM.

## **5. Corporate Communication & Public Relations**

### **Course Objectives:**

1. To understand concept of Corporate Communication & Public Relations (CC&PR) and implementation of customer relationship management.
2. To provide insight into CC&PR marketing initiatives, customer service and designing CC&PR strategy.
3. To understand new trends in CC&PR CRM, challenges and opportunities for organization

### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

- Apply CC&PR marketing initiatives.  
CO3: Compare different CC&PR strategies.  
CO4: Demonstrate new trends in CC&PR.

**Semester VI**  
**1. Operations Research**

**Course Objectives:**

1. To help students to understand operations research methodologies.
2. To help students to solve various problems practically.
3. To make students proficient in case analysis and interpretation.

**Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain concepts of operations research and linear programming.

CO2: Solve problems of assignment and transportation models.

CO3: Apply network analysis.

(Autonomous) CO4: Solve problems related to job sequencing and theory of games. (Level: Apply) Discipline Specific Elective (DSE-9, 10, 11, 12) Any FOUR of GROUP

**2 Project Management :**

**Course Objectives:**

1. The objective of this course is to familiarize the learners with the fundamental aspects of various issues associated with Project Management
2. To give a comprehensive overview of Project Management as a separate area of Management
3. To introduce the basic concepts, functions, process, techniques and create an awareness of the role, functions and functioning of Project Management

**Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Explain the concepts of project management.

CO2: Analyse project feasibility.

CO3: Analyse budget, cost and risk estimates in project management.

CO4: Describe new dimensions in project management.

### 3.Brand Management

#### **Course Objectives:**

1. To understand the meaning and significance of Brand Management
2. To Know how to build, sustain and grow brands
3. To know the various sources of brand equity

#### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Demonstrate knowledge of the nature and processes of branding and brand management.

CO2: Evaluate the scope of brand management activity across the overall organisational context and analyze how it relates to other business areas.

CO3: Appraise the key issues in managing a brand portfolio and making strategic brand decisions.

CO4: Analyze and discuss contemporary brand related problems and develop appropriate strategies and initiatives.

CO5: Formulate and justify brand development decisions.

### 4.Retail Management

#### **Course Objectives:**

1. To familiarize the students with retail management concepts and operations.
2. To provide understanding of retail management and types of retailers.
3. To develop an understanding of retail management terminology including merchandize management, store management and retail strategy.
4. To acquaint the students with legal and ethical aspects of retail management.
5. To create awareness about emerging trends in retail management.

## **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Describe how the consumers' decision process affects retailers.

CO2: Develop a retail strategy that appeals to a specific target market.

CO3: Explain the design, implementation, and assessment of retailing strategies based on consumer needs and market changes.

CO4: Apply strategies for maintaining and sustaining in retail.

## **5.International Marketing**

### **Course Objectives:**

1. To understand International Marketing, its Advantages and Challenges.

2. To provide an insight on the dynamics of International Marketing Environment.

3. To understand the relevance of International Marketing Mix decisions and recent developments in Global Market.

### **Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Describe the concepts of international marketing and trade.

CO2: Analyze the international marketing environment and its implication on business.

CO3: Apply the international marketing mix to products and services.

CO4: Analyze the developments in international market with respect to the domestic, regional and national markets.

## **6.Media Planning and Management**

### **Course Objectives:**

1. To understand Media Planning, Strategy and Management with reference to current business scenario.

2. To know the basic characteristics of all media to ensure most effective use of advertising budget.

3. To provide an insight on Media Planning, Budgeting, Scheduling and Evaluating the Different Media Buys.

**Course Outcomes:**

After the completion of the Course, the Learner will be able to:

CO1: Describe the concepts of media and media planning.

CO2: Apply media mix and media strategy to products and services.

CO3: Analyze a media budget, buying and scheduling.

CO4: Evaluate measurement of various media.



## Department of Science

**VISION-** To promote the value of teaching. Develop fundamental knowledge of science, strong academic foundation with practical exercise.

**MISSION-** The faculty of department of science provides challenging and quality education to the students.

## Department of Botany

### PROGRAM OUTCOME

- PO1 To recognize and identify major groups of non-vascular and vascular plants and their phylogenetic relationships.
- PO2 To understand the phylogeny of plants and study various systems of classification.
- PO3 To understand physiological processes and adaptations of plants.
- PO4 To provide knowledge about environmental factors and natural resources and their importance in sustainable development.
- PO5 To be able to deal with all microbes and the technologies for their effective uses in industry and mitigation of environmental concerns.
- PO6 To explore the morphological, anatomical, embryological details as well as economic importance of cryptogams and phanerogams.
- PO7 To understand patterns of heredity and variation among individuals, species and populations and apply principles for improvement of quality and yield.
- PO8 Able to apply statistical tools to gain insights into significantly different data.
- PO9 To acquire recently published knowledge in molecular biology, such as rDNA technology; PTC and bioinformatics and their applications.
- PO10 Able to carry out phytochemical analysis of plant extracts.

### COURSE OUTCOME

**Class: F.Y.B. Sc. Botany**  
**Semester I**

## Course Name: Plant Diversity I

### Course Outcomes:

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

- CO1:** Understand Chlorophyta among algae along with the life-cycles of *Nostoc* and *Spirogyra*, range of thallus, reproduction and economic importance of algae.
- CO2:** Understand how to identify and classify Phycomycetes from Fungi based on general characters & life cycles of Rhizopus and Aspergillus.
- CO3:** Understand basic concepts of economic importance of fungi & their modes of nutrition in nature.
- CO4:** Understand Hepaticae from Bryophytes along with life cycle of *Riccia*.

## **Course Name: Form and Function-I**

### **Course Outcomes:**

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

**CO1:** To describe eucaryotic cell and the ultrastructure of cell organelles

**CO2:** To understand the concept of ecosystem, food chain, food web, and energy flow.

**CO3:** To understand concepts in Mendelian genetics.

**CO4:** To understand concepts in non-mendelian genetics, epistasis and multiple allelism.

## **Class: F.Y.B. Sc. Botany Semester II**

## **Course Name: Plant Diversity I**

### **Course Outcomes:**

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

**CO1:** Understand stelar evolution among Pteridophytes along with the life-cycle of *Nephrolepis*.

**CO2:** Understand basic concepts of economic importance of Gymnosperms & the life cycle and economic important of *Cycas*.

**CO3:** Understand Angiosperm and Plant Morphology like Morphology of Leaf and Inflorescence.

**CO4:** To understand the diversity of plants & their parts and be able to describe & identify them in the field along with their economic importance.

## **Course Name: Form and Function-I**

### **Course Outcomes:**

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

**CO1:** To describe the simple permanent tissues and primary structure of dicot and monocot root, stem and leaf

**CO2:** To get knowledge of water potential, solute potential, matric potential and pressure potential and enzyme inhibition, kinetics, mechanism of action

**CO3:** Understand concepts of primary and secondary metabolites

**CO4:** To write down the sources, parts used, active constituents and medicinal uses of Common medicinal plants

**Class: S.Y.B. Sc. Botany**  
**Semester III**

**Course Name: Plant Diversity II**

**Course Outcomes:**

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

- CO1.** Detailed study of diversity in algae, bryophyte and its future applications in industry and environment.
- CO2.** Learning the diversity in Pteridophyta.
- CO3.** Understanding the past environment with the study of palaeobotany, fossils and geological time scale.

**Course Name: Form and Function-II**

**Course Outcomes:**

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

- CO1.** To understand the ultrastructure of different cell organelles and cell division
- CO2.** To gain knowledge of cytogenetics and related diseases
- CO3.** To acquire the knowledge of molecular biology and their application in plants
- CO4.** To get insight into protein synthesis procedure and technique

**Course Name: Current trends and Plant Sciences III**

**Course Outcomes:**

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

- CO1.** Learning of principles and working of microscopy, colorimetric, Spectrophotometry and Chromatography. Research orientation
- CO2.** Identification and understanding the economic importance of forest products and Spices and condiments. Develop Entrepreneurial skills among the learners
- CO3.** Basic molecular biology concept learning. Research orientation

**Class: S.Y.B. Sc. Botany**  
**Semester IV**

**Course Name: Plant Diversity II**

**Course Outcomes:**

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

- CO1**The students will learn to identify and study the life cycles of fungi,
- CO1**fungi causing plant diseases, lichens,
- CO1**Pteridophytes, Gymnosperms, and fossil members mentioned in the syllabus.

**Course Name: Form and Function-II**

**Course Outcomes:**

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

**CO1.** The students will be able to relate structure with function by studying different anatomical details.

**CO2.** They will be able to understand the basic concepts and applications of respiration, photorespiration, photoperiodism and vernalisation.

**CO3.** They will be able to grasp the principles governing ecology and environmental biology with reference to biogeochemical cycles, ecological factors, and community ecology.

### **Course Name: Current trends and Plant Sciences III**

#### **Course Outcomes:**

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

**CO1**To understand different branches of horticulture and types of garden

**CO2**To gain insight into different techniques of plant tissue culture and R-DNA technology

**CO3**Able to calculate the coefficient of correlation

**CO4**To acquire the knowledge and application of Bioinformatics in study of botany

### **Class: T.Y.B. Sc. Botany Semester V**

### **Course Name: Plant Diversity III**

#### **Course Outcomes:**

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

The students would be able to : □

**CO1.** To gain knowledge about microbial diversity and techniques for culturing and visualization. □

**CO2.** To understand the salient features of three major groups of algae, their life cycle patterns with a suitable example; to be able to identify them. □

**CO3.** To learn the general characteristics and classification of two major groups of fungi along with life cycles of each group; to be able to identify them. □

**CO4.** To understand the scope and importance of Plant Pathology and apply the concepts of various control measures of commonly widespread plant diseases.

### **Course Name: Plant Diversity IV**

#### **Course Outcomes:**

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

**CO1**To acquire knowledge of different fossil forms and understand their role in evolution. □

**CO2**To provide plant description, describe the morphological and reproductive structures of seven families and also identify and classify according to Bentham and Hooker's system. □ \

**CO3**To gain proficiency in the use of keys and identification manuals for identifying any unknown plants to species level. □

**CO4**To relate anomalies in internal stem structure with function and appreciate the salient features of the root stem transition zone. □

*CO5* To get exposure to pollen study and learn to apply it in various fields

### **Course Name: Form and Function-III**

#### **Course Outcomes:**

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

*CO1* To acquire knowledge about two important organelles and molecular mechanisms of translation

*CO2* To understand succession in plant communities and study bioremediation technology.

*CO3* To get exposure to principles and techniques of plant tissue culture.

*CO4* To understand water relations of plants, inorganic and organic solute transport.

### **Course Name: Current Trends in Plant Sciences-II**

#### **Course Outcomes:**

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

*CO1.* To get exposure to the technique of mushroom cultivation and explore the possibility of entrepreneurship in the same.

*CO2.* To learn ethnobotanical principles, phytochemical constituents and utilize indigenous plant knowledge for the cure of common human diseases.

*CO3.* To gain knowledge about the Construction of genomic DNA libraries, Chromosome libraries and c- DNA libraries.

*CO4* To learn principles and application of commonly used techniques in instrumentation.

## **Class: T.Y.B. Sc. Botany Semester VI**

### **Course Name: Plant Diversity III**

#### **Course Outcomes:**

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

*CO1.* To identify, describe and study in detail the life cycles of three Bryophytes. □

*CO2.* To and study in detail classification and general characters of three classes of Pteridophytes and identify as well as describe the life cycles of one example from each class. □

*CO3.* To study evolutionary aspects and economic utilization of Bryophytes and Pteridophytes. □

*CO4.* To identify, describe and study in detail the life cycles of three Gymnosperms.

### **Course Name: Plant Diversity IV**

#### **Course Outcomes:**

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

**CO1.** To study contribution of Botanical gardens, BSI to Angiosperm study and provide plant description, describe the morphological and reproductive structures of seven families. □

**CO2.** To gain exposure to a phylogenetic system of classification. □

**CO3.** To gain insight into the anatomical adaptations of different ecological plant groups. □

**CO4.** To understand development plant of male and female gametophytes, embryonic structure and development.

**CO5.** To understand the different aspects and importance of Biodiversity and utilize them for conservation of species so as to prevent further loss or extinction of Biodiversity and preserve the existing for future generations.

### **Course Name: Form and Function-III**

#### **Course Outcomes:**

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

**CO1.** To study various plant bio molecular structures and appreciate the structures, role, functions and applications of enzymes.

**CO2.** To gain insight into the Nitrogen and plant hormone metabolism with applications of the same in agriculture and horticulture.

**CO3.** To understand principles of genetic mapping, mutations with problem knowledge of various metabolic disorders and their implications

**CO4.** To generate and test hypotheses, make observations, collect data, analyse and interpret results, derive conclusions, and evaluate their significance using suitable statistical techniques.

### **Course Name: Current Trends in Plant Sciences-II**

#### **Course Outcomes:**

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

**CO1.** To gain insight into recent molecular biology techniques for DNA analysis and amplification and Barcoding techniques and applications.

**CO2.** To understand and apply tools of Bioinformatics for data retrieval and phylogenetic analysis.

**CO3.** To learn about the sources of economically important plants in the field of fats and oils and apply it for extraction, dealing with entrepreneurship.

**CO4.** To gain knowledge in preservation of post-harvest produce and explore the possibility of entrepreneurship in the field.

## DEPARTMENT OF CHEMISTRY

### PROGRAMME SPECIFIC OUTCOMES

PSO1 The students will have sound understanding of fundamental and application based principles and theories in Physical, Inorganic, Organic and Analytical Chemistry

PSO2 Students will learn various techniques to perform scientific experiments as well as accurately record and analyse the results of such experiments

PSO3 Student will learn the usage of analytical instruments, select, and apply appropriate techniques and resources for the analysis

PSO4 Extensive laboratory and classroom work will skill the students with in problem solving, critical thinking and analytical reasoning as applied to scientific problems

PSO5 Students will be acquainted with new areas in both chemistry and allied fields of science and technology

PSO6 Students will understand the applications and impact of the chemistry in societal, and environmental contexts, and demonstrate it's knowledge and need for sustainable development

PSO7 Students will learn to apply ethical practices such as limited and safe use of hazardous chemicals, responsibility toward environmental and health safety

PSO8 Students will be able to work in team and thus get prepared as a perfect professional chemist with respect to knowledge, responsibility and teamwork

### COURSE OUTCOMES

#### CLASS: F.Y.B. SC. CHEMISTRY

#### SEMESTER I

##### Course (Paper) Name and No.: Paper I

CO1 Understand different types of systems like open and closed system.

CO2 Acquire knowledge of different form of heat changes taking place in dissolution and chemical reactions.

CO3 Learn various ways of defining concentration of a compound in solution. CO4 Apply the knowledge acquired for calculating the concentration of a compound in solution.

CO5 learn Rutherford atomic model and bohr theory with its limitation.

CO6 Write the IUPAC name of different organic compound. CO7 Explain the hybridization of C, N,O in the given organic compound.

CO8 Classify the different types of organic reactions.

##### Course (Paper) Name and No.: Paper II

CO1 Derive an expression for rate constant of a first order reaction.

CO2 Derive an expression for rate constant of second order reaction with equal initial concentration of two reactant.

CO3 Explain what is mean by main group elements.

CO4 Learn and explain metallic and non-metallic nature of main group elements.

CO5 Understands the concept of electronegativity of main group elements

CO6 Learn about the concept of diagonal relationship between 2nd period elements and 3rd period elements.

CO7 Drawing condensed structural formulas, bondline formulas, perspective drawings, Newman projections, Fischer projections.

CO8 Conformation analysis of alkanes (ethane, propane and n-butane); predicting the relative stability with energy diagrams.

### **Practical**

CO1 Perform the standardization of NaOH solution of various concentration.

CO2 Prepare the solutions of different normality.

CO3 Determine the percentage purity of BaSO<sub>4</sub> containing NH<sub>4</sub>Cl.

CO4 Determine the purity of organic compound by recrystallization.

CO5 Decide the melting point of pure compound.

CO6 Determine the purity of organic compound by sublimation

CO7 Perform the experiment of separation of mixture by thin layer chromatography.

CO8 Separate the liquid mixture by distillation method.

## **SEMESTER II**

### **Course (Paper) Name and No.: Paper I**

CO1 Learn ideal gas laws, kinetic theory of gases.

CO2 Apply the acquired knowledge to calculate different parameters concerning a chemical reaction.

CO3 Learn second law of thermodynamics.

CO4 Learn thermodynamic derivation of equilibrium constant.

CO5 understand mechanism of organic reactions like friedel acylation / alkylation.

CO6 explain calculations of titration curve involving strong acid and strong base.

CO7 Predict the mechanism of organic reaction.

CO8 Describe the electrophilic, Nucleophilic and free radical reactions.



**Course (Paper) Name and No.: Paper II**

CO1 Difference between amorphous and crystalline solid

CO2 Define polarizability ( Fajan's rule ) and can understand the shapes of molecules.

CO3 Understands the applications of redox chemistry like : i) extraction of elements (example : isolation of copper by auto reduction) ii) redox reagents in volumetric analysis I<sub>2</sub> and KMnO<sub>4</sub> iii) titration curves: i) single electron system ii) multi electron system

CO4 Recognize and distinguish between aromatic and antiaromatic compounds by their structures.

CO5 Know the properties of aromatic and antiaromatic compounds, and the chemical consequences of aromaticity.

CO6 Recognize and be able to write the mechanism of electrophilic aromatic substitution.

CO7 Students can able to understand the basics of electrophilic aromatic substitution reactions of the following types: halogenation, nitration, sulfonation, and Friedel-Crafts acylation & alkylation.

CO8 Students can able write the mechanism of electrophilic aromatic substitution reactions of the following types: halogenation, nitration, sulfonation, and Friedel-Crafts acylation & alkylation.

**Course (Paper) Name and No.: Practical**

CO1 To determine the rate constant for the separation reaction between ethyl acetate and NaOH.

CO2 To determine the dissociation constant (K<sub>a</sub>) of weak acid (CH<sub>3</sub>COOH) using Hendersons equation pH metrically.

CO3 Verify Beer-Lamberts law using KMnO<sub>4</sub> solution by coloumetric method.

CO4 Standardize the commercial sample of HCl using borax.

CO5 Analysis qualitatively cations and anions from a sample.

CO6 To determine the percentage of copper (IT) present in a given sample by titration.

CO7 Characterize organic compound containing C,H,(O),N,S,X elements.

**CLASS: S.Y.B. SC. CHEMISTRY****SEMESTER III****Course (Paper) Name and No.: General Chemistry - I**

CO1 Understand and apply laws of thermodynamics to chemical systems.

CO2 Determine feasibility of a chemical reaction from the relation between equilibrium constant and Gibbs free energy.

CO3 Explain dependence of conductance on parameters such as concentration

CO4 Apply Kholrausch's law for the determination of degree of dissociation and dissociation constant of a weak electrolyte conductometrically.

CO5 Understand concept of transference number of transport number of ions.

CO6 Understand linear combination of atomic orbitals

CO7 Explain: Alkyl halides: Nucleophilic substitution reactions : SN1 , SN2 , SNI

CO8 Understand Ring opening reactions, hydrolysis, alcohols, cyanide , ammonia , amines, Grignard reagents and alcoxides

**Course (Paper) Name and No.: General Chemistry-II**

CO1 Explain effect of temperature on the rate of reaction, Arrhenius equation, concepts of energy activation.

CO2 Explain theories of reaction rates like collision theory and activated complex theory.

CO3 Explain Nernst distribution law and its applications

CO4 Describe electron deficient compounds with respect to Lewis acidity and applications.

CO5 Explain preparation of simple boranes.

CO6 Students will understand fundamental concept of keto-enol tautomerism and mechanism of embolization.

CO7 Concept of active methylene compound, formation of enolate and its application.

CO8 Study of conversion of active methylene compounds into  $\beta$ -keto ester, ketone, mono and dicarboxylic acids.

**Course (Paper) Name and No.: Analytical chemistry III**

CO1 Discuss Report and Describe different methods, errors in analysis

CO2 Understand Accuracy, Precision and Gravimetric analysis.

CO3 Discuss different types of Titration with analysis .

CO4 Understand the formation of standard solutions in analytical chemistry.

CO5 Perform different types of Titrations

CO6 Understand basic concepts in Instrumental methods

CO7 Discuss electromagnetic radiation with basic terms involves

CO8 Understand Beers-Lamberts law and Instrumentation for absorption spectroscopy

**Course (Paper) Name and No.: Practical**

CO1 Students will be able to understand practical aspects of conductometry

CO2 Students will be able to discuss critical solution temperature (CST) of phenol - Water System.

CO3 Students will be able to discuss kinetics of the rate determining reaction

CO4 Students will be able to determine acid and basic radicals

CO5 Students will be able to understand practical aspect of Preparation, Crystallisation.

CO6 Students will be able to understand Preparation of different organic reaction

## SEMESTER IV

### Course (Paper) Name and No.: General Chemistry I

CO1 Comprehend difference between galvanic cells and electrolysis.

CO2 Know different forms of electrodes used in electrochemistry.

CO3 Know the electronic configurations of transition elements;

CO4 Appreciate the relative stability of various oxidation states in terms of electrode potential values ;

CO5 Learn the rules of nomenclature of coordination compounds.

CO6 Describe Mechanism Nucleophilic acyl substitution and acid catalysed nucleophilic acyl substitution CO7 Explain Acidity of benzene sulphonic acid

CO8 Understand reactions with alcohol, Phosphorous pentachloride IPSO substitution

### Course (Paper) Name and No.: General Chemistry-II

CO1 Explain laws of crystallography.

CO2 Describe the terms involved in Latimer equations.

CO3 Students will learn the method of nomenclature of aliphatic and aromatic amines.

CO4 Student will be able to write the resonance structures and predict the site at which electrophilic substitution takes place on the basis of stability of intermediate.

CO5 Student will be able to write the resonance structures of furan, pyrrole, thiophene and predict the site at which electrophilic substitution takes place on the basis of stability of intermediate.

CO6 Students will understand the electron distribution based on resonance structures of pyridine and predict the susceptibility of nucleophilic substitution reactions.

CO7 Students will learn to compare the basicity of pyrrole, pyridine, pyrrolidine and piperidine.

CO8 Study of sulphonation, reduction and Chichibabin reactions of pyridine.

### Course (Paper) Name and No.: Analytical chemistry III

CO1 Demonstrate various separation methods.

CO2 Apply the Principle ,Technique& Applications of paper and thin layer chromatography

CO3 Discuss Instrumental techniques like potentiometry, pH-metry etc.

CO4 Understand and explain the construction, working and different titration curves of Conductometry.

CO5 Learn Construction, working and care of combined glass electrode

CO6 Understand and explain Gravimetric analysis, Precipitation, & Argentometric titration with titration curves

CO7 Interpret and explain Co-precipitation and end points in Volhard method, Mohr's method using adsorption indicator

CO8 Explain analysis of Soil, water in environmental analysis.

**Course (Paper) Name and No.: Practical**

CO1 Students will be able to learn potentiometer, Kinetics of the reaction.

CO2 Students will be able to learn compare Inorganic preparation – Nickel dimethyl glyoxime using microscale method

CO3 Students will be able to understand the concept of Complex cation

CO4 Students will be able to understand practical aspect of Preparation Inorganic salt

CO5 Students will be able to understand the Organic Chemistry by Qualitative Analysis of bi-functional organic compounds

**CLASS: T.Y.B. SC. CHEMISTRY**

**SEMESTER V**

**Course (Paper) Name and No.: Physical Chemistry**

CO1 Memorize concept of dipole moment, polar and non- polar molecules.

CO2 Differentiate Rotational Spectroscopy Vibrational Spectroscopy Raman Spectroscopy.

CO3 Understand Raoult's law, Clapeyron equation, van't Hoff Factor.

CO4 Create own model to show osmosis and reverse osmosis

CO5 Define basic terms of radioactivity i.e. decay constant, half life time, average life and units of radioactivity.

CO6 Compare G.M. Counter and Scintillation Counter method for detection of radioactivity

CO7 Apply Carbon Dating method to estimate age of fossils of plants and animals.

CO8 Apply how the BET equation can be used to determine the surface area of an adsorbent

**Practical's**

CO1 Handle and Understand principles of different instruments like Potentiometry, Conductometry, pH Metry.

CO2 Determine molecular weight of substance by using Rast Method

CO3 With the help of Fractional change method find out order of reaction.

**Course (Paper) Name and No.: Inorganic Chemistry**

CO1 describe molecular symmetry and concept of point group

CO2 Appreciate importance of symmetry in chemistry

CO3 Calculate the packing density of different types of cubic unit cells

CO4 Describe the imperfections in solids and their effect on properties

CO5 Explain consequences of frenkel and schottky defects and differentiate them

CO6 Explain the terms superconductivity, transition temperature and meissner effect

CO7 Explain different types of super conductors

CO8 Give application of superconductors

**Course (Paper) Name and No.: Organic Chemistry**

CO1 Students will able to distinguish between stereoselectivity and stereospecificity.

CO2 Students will learn stereochemistry of substitution reaction, elimination and addition reaction.

CO3 Writing the mechanism of molecular rearrangements with example and stereochemistry.

CO4 Writing the structures of carbohydrates in Fisher projection and Haworth formula and its interconversion.

CO5 Students will be able to solve problems of structure elucidation of simple organic compounds using UV-Visible, IR, NMR and Mass technique. Students will learn to calculate index of hydrogen deficiency in given molecular formula.

CO6 Explanation and drawing of structures of DNA and RNA including base pairing.

CO7 Students will understand the functional group transformation and selectivity of reagents like  $\text{LiAlH}_4$ , Red Al,  $\text{NaBH}_4$ ,  $\text{SeO}_2$ , m-CPBA and NBS CO8 Students will learn different types of addition & condensation polymers, their preparations and uses.

**Practical's**

CO1 Students will able to identify chemical type of component present in binary mixture

CO2 Students will develop basic skill in the separation technique of solid-solid mixture.

CO3 Students will learn to separate the mixture into components

CO4 These practicals enable the student to identify unknown organic compound by microscale technique.

CO5 Students will get training of systematic qualitative analysis of organic compound

**Course (Paper) Name and No.: Analytical Chemistry**

CO1 Students will learn importance of quality concept in industry, different grade chemicals and scientific techniques of sampling

CO2 Students will understand theoretical aspects of types of chemical titrations

CO3 Student get acquainted with different measurements techniques based on various spectroscopic techniques CO4 Students will learn modern and sophisticated separation techniques

**Practical's**

CO1 Students will able to identify chemical type of component present in binary mixture.

CO2 Students will develop basic skill in the separation technique of solid-liquid and liquidliquid mixture.

CO3 Students will learn to separate the mixture into components by fractional distillation.

CO4 Competency in handling and performing fractional distillation.

CO5 These practicals enable the student to identify unknown organic compound by microscale technique.

### **Course (Paper) Name and No.: Drugs**

CO1 Describe the basic scientific concepts and principles that serve as the foundational underpinnings of the pharmacological sciences including pharmacokinetics; pharmacodynamics; drug metabolism; and drug-drug interactions; and explain how these fundamental pharmacological properties can influence route of administration, drug action; drug efficacy and potency; drug levels in the body; potential for drug interactions; drug toxicity; and the appropriate choice of drug for pharmacotherapy in a given patient.

CO2 Explain how to use drug-specific and patient-specific pharmacokinetic parameters to calculate the physiochemical properties that influence rates of drug disposition and clearance in the body, and how these parameters can be used to monitor, design and modify appropriate dosing regimens of drugs in specific patient populations.

CO3 Describe the process by which new drugs are discovered, developed, tested and finally approved by the Federal Drug Administration for use in the clinic.

CO4 List the major drugs and drug classes currently used in medical practice.

CO5 Describe the specific pharmacology of the major drugs and drug classes currently used in medical practice including their indications, contraindications, clinical use, mechanisms of action, physiological effects, pharmacokinetic properties, major adverse effects and clinically significant drug interactions; and apply this knowledge together with both disease specific and patient-specific factors to select the most appropriate medication(s) for the effective pharmacotherapy of a given disease or condition in a specific patient.

CO6 Students will be able to describe the term "addiction" and explain various theories of causation.

CO7 Describe warning sign, symptoms, and the course of substance use disorders.

CO8 To familiarize the basic classification of drugs

### **Practical's**

CO1 Students can able to do the synthesis's of simple drugs i.e aspirin

CO2 Students can able to perform estimation of Ibuprofen.

CO3 Students can able to find out acid neutralizing capacity of antacid.

CO4 Students can able to do the separation of chlorophyll pigment.

CO5 Students able to do the dyeing of cotton.

CO6 Students can able to write monogram of any drug

## SEMESTER VI

### Course (Paper) Name and No.: Physical Chemistry

- CO1 Recall the concept Ionic Strength, activity and activity Coefficient.
- CO2 Differentiate between Concentration cell and chemical cell.
- CO3 Apply Nernst equation for numerical solving
- CO4 Set up an experiment to show decomposition potential and overvoltage
- CO5 Understand Nuclear Spin, Nuclear magnetic moment, Spin angular moment
- CO6 Draw the diagram of NMR Spectrometer.
- CO7 Know the principle of ESR Spectroscopy.
- CO8 Apply principle NMR and ESR for Numerical solving.

### Practical's

- CO1 Handle and Understand principles of different instruments like Colorimetry, Potentiometry, Conductometry.
- CO2 Determine molecular weight of any high polymer polyvinyl alcohols by viscosity measurement.
- CO3 Interpret the order of reaction graphically from given experimental data and to calculate the specific rate constant.

### Course (Paper) Name and No.: Inorganic Chemistry

- CO1 Explain merits and Limitations of Valence Bond Theory.
- CO2 Explain the shapes of d- orbitals
- CO3 Explain Consequences of crystal field splitting on various properties of metal complexes of the first transition series.
- CO4 Explain Limitations of CFT
- CO5 Correlate electronic configurations and lability of complexes.
- CO6 Explain Ligand substitution reactions considering Associative and Dissociative mechanisms.
- CO7 Appreciate rules for determination of ground state term.
- CO8 Determine Terms for p<sup>2</sup> and d<sup>1</sup> electronic configurations

### Course (Paper) Name and No.: Organic Chemistry

- CO1 Students will be able to distinguish between stereoselectivity and stereospecificity.
- CO2 Students will learn stereochemistry of substitution reaction, elimination and addition reaction.
- CO3 Writing the mechanism of molecular rearrangements with example and stereochemistry.

CO4 Writing the structures of carbohydrates in Fisher projection and Haworth formula and its interconversion.

CO5 Students will be able to solve problems of structure elucidation of simple organic compounds using UV-Visible, IR, NMR and Mass technique. Students will learn to calculate index of hydrogen deficiency in given molecular formula.

CO6 Explanation and drawing of structures of DNA and RNA including base pairing.

CO7 Students will understand the functional group transformation and selectivity of reagents like  $\text{LiAlH}_4$ , Red Al,  $\text{NaBH}_4$ ,  $\text{SeO}_2$ , m-CPBA and NBS  
CO8 Students will learn different types of addition & condensation polymers, their preparations and uses.

### **Practical's**

CO1 Students will able to identify chemical type of component present in binary mixture.

CO2 Students will develop basic skill in the separation technique of solid-liquid and liquidliquid mixture.

CO3 Students will learn to separate the mixture into components by fractional distillation.

CO4 Competency in handling and performing fractional distillation.

CO5 These practicals enable the student to identify unknown organic compound by microscale technique.

CO6 Students will get training of systematic qualitative analysis of organic compound.

### **Course (Paper) Name and No.: Analytical Chemistry**

CO1 Students will understand basic principles and applications of electroanalytical techniques

CO2 Students will learn principle of different separation techniques

CO3 Students will appreciate different aspects of food processing and cosmetics industry and the analysis

CO4 Students will get familiar with various thermal methods of analysis and various method validation parameters and their importance.

### **Practical's**

CO1 Students will get hands on practice of various techniques of quantitative estimation.

CO2 Students will get an opportunity to handle and understand principles of different instruments such as colorimeter, spectrophotometer, pH meter, flame photometer and turbidimeter

CO3 Students will come across with different types of samples such as cosmetics, polluted water, fertilizer, food, chemicals etc. and their analysis

### **Course (Paper) Name and No.: Drugs**

CO1 Explain how to use drug-specific and patient-specific pharmacokinetic parameters to calculate the physiochemical properties that influence rates of drug disposition and clearance in the body, and how these parameters can be used to monitor, design and modify appropriate dosing regimens of drugs in specific patient populations.

CO2 Describe the process by which new drugs are discovered, developed, tested and finally approved by the Federal Drug Administration for use in the clinic.



CO3 List the major drugs and drug classes currently used in medical practice.

CO4 Describe the specific pharmacology of the major drugs and drug classes currently used in medical practice including their indications, contraindications, clinical use, mechanisms of action, physiological effects, pharmacokinetic properties, major adverse effects and clinically significant drug interactions; and apply this knowledge together with both disease specific and patient-specific factors to select the most appropriate medication(s) for the effective pharmacotherapy of a given disease or condition in a specific patient.

CO5 Recognize the currently accepted diagnostic criteria required to specific diagnose disease and initiate drug therapy and the anticipated therapeutic goals likely to be achieved by therapeutic intervention for the most commonly encountered pathophysiological state(s) and/or disease mechanism(s), as well as any clinical testing requirements for monitoring drug effectiveness and potential toxicity.

CO6 Students will be able to describe the term "addiction" and explain various theories of causation.

CO7 Students will be able to Identify and describe different approaches used in the treatment of addictions.

CO8 Define the routes of administration, methods of ingestion, tolerance, withdrawal and interactions of these drugs with other psychoactive and non-psychoactive drugs.

### **Practical's**

CO1 Students can able to do the synthesis's of simple drugs i.e aspirin

CO2 Students can able to perform estimation of Ibuprofen.

CO3 Students can able to find out acid neutralizing capacity of antacid.

CO4 Students can able to do the separation of chlorophyll pigment.

CO5 Students able to do the dyeing of cotton.

CO6 Students can able to write monogram of any drug.

## Department of Foundation Course

### Course Outcomes

Class: F.Y. B.A./B.Com./B.Sc.

#### Semester I

##### Course (Paper) Name and No.: Foundation Course- I

CO1 To know about duties & responsibilities towards society

CO2 To aware about the socio-economic problems and diversified issues of society.

CO3 To impart knowledge of Globalization and make students aware about the problems in society. CO4 To create awareness about the fundamental rights according to Indian Constitution

CO5 To study key Aspect of political Process

#### Semester II

##### Course (Paper) Name and No.: Foundation Course- II

CO1 The learners would be acquainted with the sectors of the Indian Economy and its basic facets.

CO2 To help learners grasp the idea of Fundamental Rights and Duties according to Indian Constitution. CO3 This will inspire learners to understand and take care of our Mother Earth.

CO4 This will aid to identify the problems within humans in the contemporary society and ways to deal with it.

CO5 The learners will learn how to cope up with stress and deal with conflicts.

#### Semester III

##### Course (Paper) Name and No.: Foundation Course- III

CO1 Student will able to understand about Right of SC, ST, Women, children,& people with disabilities. CO2 Learners will able to understand about Environmental disaster

CO3 To understand about various Science & technology and their uses

CO4 Student will able to understand about verbal & non verbal communication, presentation skills

#### Semester IV

##### Course (Paper) Name and No.: Foundation Course- III

CO1 Student will able to understand about Right of SC, ST, Women, children,& people with disabilities. CO2 Learners will able to understand about Environmental disaster

CO3 To understand about various Science & technology and their uses

CO4 Student will able to understand about verbal & non verbal communication, presentation skills



**SADGURU VAMANBABA COLLEGE OF COMMERCE & SCIENCE**  
**Department of B.SC.IT**

**VISION:** To Make IT Department most vibrant with the recognition of excellence in mentoring technology.

**MISSION:** Impart quality education to the youth to construct new avenues in the field of Information Technology.

**PROGRAMME OUTCOME**

1. Learners are able to work effectively in IT industries in field of project management.
2. Able to realize the revolution of Internet in Mobile Devices, Cloud & Sensor Networks.
3. Learners are able to create application projects using different technologies such as enterprise java and .Net.
4. Learners are able to build and enhance business intelligence capabilities by adapting the appropriate technology and software solutions.
5. Able to understand building blocks of Internet of Things and characteristics.

**COURSE OUTCOMES**

<b>Course Code</b>	<b>Course</b>	<b>Course Outcome</b>
<b>CLASS: FY.B.SC INFORMATION TECHNOLOGY</b>		
<b>SEMESTER - I</b>		
<b>USIT101</b>	<b>Imperative Programming</b>	1.To make the student build logic. 2.To equip students with structural and decision-making skills 3.To introduce key concepts of programming logic.
<b>USIT102</b>	<b>Digital Electronics</b>	1.To make student aware of basic computing knowledge clear and give a thorough understanding on hardware circuits, chips and complex circuitry using Integrated Circuits. 2.To gives student a broader understanding of how computers work using number systems such as binary, hexadecimal and different types of circuits like sequential, combinational circuits. 3.Learners will be able to understand the functioning of counters and shift registers with respect to its application in electronic display and sequence generator.

<b>USIT103</b>	<b>Operating Systems</b>	<ol style="list-style-type: none"> <li>1.To make the students aware of the software environment they will be using and how commands are given to the system.</li> <li>2.To make student aware the concept of virtualization and types of virtualizations.</li> <li>3.Learners will be able to describe and analyses the memory management and its allocation policies.</li> </ol>
<b>USIT104</b>	<b>Discrete Mathematics</b>	<ol style="list-style-type: none"> <li>1.It enables the learners to understand engineering level mathematical concepts.</li> <li>2.To apply the concept of mathematics to various domains and applications.</li> <li>3. Learners will be able to learn the properties of graphs, tree, isomorphism of trees and finding the shortest path.</li> </ol>
<b>USIT105</b>	<b>Communication Skills</b>	<ol style="list-style-type: none"> <li>1.To make student aware of the basic business communication skills.</li> <li>2. Learners will be able to learn how to communicate in different fields or departments.</li> <li>3. Learners will be able to learn to make presentations and how to present one.</li> </ol>
<b>SEMESTER - II</b>		
<b>USIT201</b>	<b>Object oriented Programming</b>	<ol style="list-style-type: none"> <li>1.To enhance students programming skills at the next level of logic Building.</li> <li>2.This subject is introduced with the aim of making the students learn higher level of programming skills.</li> <li>3. Learners will be able to use classes, constructors and destructors.</li> </ol>
<b>USIT202</b>	<b>Microprocessor Architecture</b>	<ol style="list-style-type: none"> <li>1.To make students understand the concept of assembly language programming that forms the base for machine communication.</li> <li>2.To learn the general construction of microprocessor system</li> </ol>
<b>USIT203</b>	<b>Web Programming</b>	<ol style="list-style-type: none"> <li>1.To make student to build static pages with html and dynamic pages.</li> <li>2.To make students aware of necessity of maintenance of server and to host website.</li> </ol>
<b>USIT204</b>	<b>Numerical and Statistical Methods</b>	<ol style="list-style-type: none"> <li>1.It enables the learners to understand engineering level mathematical concepts.</li> <li>2.To apply the concept of mathematics to various domains and applications.</li> </ol>
<b>USIT205</b>	<b>Green Computing</b>	<ol style="list-style-type: none"> <li>1.To make student responsible eco-citizens and create awareness among the generation for ecofriendly use of computers and their resources.</li> <li>2.To make aware of designing, manufacturing/engineering, using and disposing of computing devices in a way that reduces their environmental impact.</li> </ol>

<b>CLASS : SY.B.SC INFORMATION TECHNOLOGY</b>		
<b>SEMESTER – III</b>		
<b>USIT301</b>	<b>Python Programming</b>	1.To make student aware of python scripting language. 2.To learn how to design and program python programming application.
<b>USIT302</b>	<b>Data Structures</b>	1.To make student understand and implement algorithm through data structures. 2.To make students implement algorithms for the creation, insertion, deletion, searching, and sorting of each data structure.
<b>USIT303</b>	<b>Computer Networks</b>	1.To make students aware of computer networks concepts. 2.The subject deals with the design and understanding of topologies, networks, protocols, modes of communication in the net work and its architecture with the TCP/IP protocol suite
<b>USIT304</b>	<b>Database Management Systems</b>	1.To make student aware of database concepts and their implementation. 2.This course introduces the learners the fundamental concepts of data, data models, data relationships, data storage techniques, constraints, various query languages, the concepts of transactions, concurrent transactions and related problems and how to handle it.
<b>USIT305</b>	<b>Applied Mathematics</b>	1.It enables the learners to understand engineering level mathematical concepts. 2.To apply the concept of mathematics to various domains and applications. 3.It enables the learners to understand engineering level mathematical concepts.
<b>SEMESTER – IV</b>		
<b>USIT401</b>	<b>Core Java</b>	1.To make the student understand and develop cross-platform and threads in programming language for better efficiency in programming. 2.To equip students with error handling techniques
<b>USIT402</b>	<b>Introduction to Embedded Systems</b>	1.To make student learn programming skills to apply in hardware and software. 2.To make student acquire the basic understanding and functioning of various peripherals and hardware components.
<b>USIT403</b>	<b>Computer Oriented Statistical Techniques</b>	1.To use computer functions for statistical analysis. 2.To apply and use statistical technique and tools in computerized applications.
<b>USIT404</b>	<b>Software Engineering</b>	1.To make student aware of software development life cycle. 2.To apply different software development model.

<b>USIT405</b>	<b>Computer Graphics and Animation</b>	<ol style="list-style-type: none"> <li>1.To make students aware of animation skills.</li> <li>2.To apply and use graphics algorithm.</li> </ol>
<b>CLASS : TY.B.SC INFORMATION TECHNOLOGY</b>		
<b>SEMESTER – V</b>		
<b>USIT501</b>	<b>Software Project Management</b>	<ol style="list-style-type: none"> <li>1.To make students learn selection of projects and portfolios in an enterprise.</li> <li>2.To aware students about effective project execution and control technique for successful project completion.</li> <li>3.Learners will be able to reduce some risk certain of appropriate prototype.</li> </ol>
<b>USIT502</b>	<b>Internet of Things</b>	<ol style="list-style-type: none"> <li>1.To make students aware about various network protocol used in IOT.</li> <li>2.To understand future trends in IT industry.</li> <li>3.Learners will be able to determine the Market perspective of IoT.</li> </ol>
<b>USIT503</b>	<b>Advanced Web Programming</b>	<ol style="list-style-type: none"> <li>1.To make students aware of advance web programming concept.</li> <li>2.Learners will be able to acquire skills to design web page incorporate with different server controls on web pages.</li> <li>3.Learners will be able to provide interaction between web pages using ASP.NET AJAX.</li> </ol>
<b>USIT504</b>	<b>Artificial Intelligence</b>	<ol style="list-style-type: none"> <li>1.To make student aware of in-depth knowledge of AI principles and technique by introducing AI’s fundaments problem.</li> <li>2.To study and build AI algorithms</li> </ol>
<b>USIT506</b>	<b>Enterprise Java</b>	<ol style="list-style-type: none"> <li>1.To make students aware of handling complex programs relating to managing data and processes over the network.</li> <li>2.To learn the concept of servlet, active server pages and hibernation.</li> <li>3.Learners will gain knowledge and experience required to develop and deploy JSP application using JSTL.</li> </ol>
<b>SEMESTER – VI</b>		
<b>USIT601</b>	<b>Software Quality Assurance</b>	<ol style="list-style-type: none"> <li>1.To make students aware of issues in Software Quality and the activities present in a typical Quality Management process.</li> <li>2.To study quality maintenance and documentation.</li> <li>3.Learners will be able to analyse the difference between black box and white box testing.</li> </ol>
<b>USIT602</b>	<b>Security in Computing</b>	<ol style="list-style-type: none"> <li>1.This course provides students with concepts of computer security, cryptography, digital money, secure protocols, detection and other security techniques.</li> <li>2.To learn to secure Information Technology data.</li> <li>3.Learners will be able to identify some of the factors driving the need for Network security.</li> </ol>

<b>USIT603</b>	<b>Business Intelligence</b>	<ol style="list-style-type: none"> <li>1.To make student familiarize with concepts and issues related to business intelligences and decision support systems.</li> <li>2.To learn data warehouses, design methods (dimension modelling), data extracting, transforming and loading processes and OLAP systems.</li> <li>3.Learners will be able to ability to design and develop the AI applications in real world scenario.</li> </ol>
<b>USIT604</b>	<b>Principles of Geographic Information Systems</b>	<ol style="list-style-type: none"> <li>1.To make students evaluate geographical and spatial data.</li> <li>2.To learn remote sensing technology, manage geodatabase.</li> <li>3.Learners will be able to create various maps in GIS.</li> </ol>
<b>USIT607</b>	<b>Cyber Laws</b>	<ol style="list-style-type: none"> <li>1.Make Learner Conversant with The Social And Intellectual Property Issues Emerging From 'Cyberspace.</li> <li>2. Explore The Legal And Policy Developments In Various Countries To Regulate Cyberspace.</li> <li>3. Develop The Understanding Of Relationship Between Commerce And Cyberspace.</li> </ol>



## Department of Physics

### Program outcome

After successful completion of course learner will acquire:

1. Experimental skills.
2. Universally acceptable degree in Physics with theoretical and experimental advancements in electronic instrumentation.
3. A thorough quantitative and conceptual understanding of the core areas of physics (e.g. mechanics, optics, thermodynamics, quantum mechanics, electronics) use contemporary experimental apparatus and analysis tools to acquire, analyze and interpret scientific data.
4. Ability to apply the principles of physics to solve new and unfamiliar problems & communicate scientific results effectively in presentations or posters. familiarize with current and recent scientific and technological developments.

### Course Outcome

#### Semester I

##### Course name- USPH101 Classical Physics

1. Understand Newton's laws and apply them in calculations of the motion of simple systems.
2. Use the free body diagrams to analyze the forces on the object.
3. Understand the concepts of friction and the concepts of elasticity, fluid mechanics and be able to perform calculations using them.
4. Understand the concepts of lens system and interference.
5. Apply the laws of thermodynamics to formulate the relations necessary to analyze a thermodynamic process.
6. Demonstrate quantitative problem solving skills in all the topics covered

##### Course name - USPH102 Modern Physics

After successful completion of this course students will be able to

1. Understand nuclear properties and nuclear behavior.
2. Understand the type isotopes and their applications.
3. Demonstrate and understand the quantum mechanical concepts.
4. Demonstrate quantitative problem solving skills in all the topics covered.

##### USPH101 Practical outcome

- i) To demonstrate their practical skills.
- ii) To understand and practice the skills while doing physics practical.
- iii) To understand the use of apparatus and their use without fear.
- iv) To correlate their physics theory concepts through practical.
- v) Understand the concepts of errors and their estimation

#### Semester II

##### Course Name USPH201 Mathematical Physics

On successful completion of this course students will be able to:

1. Understand the basic mathematical concepts and applications of them in physical situations.
2. Demonstrate quantitative problem solving skills in all the topics covered.

##### Course Name USPH202 Electricity and Electronics

1. Understand the circuits theorem, DC power supply, Digital electronics.
2. Understand the AC bridge, Series circuits, alternating current theory.

## **USPHP2 Practical outcome**

- i) To understand and practice the skills while doing physics practical.
- ii) To understand the use of apparatus and their use without fear.
- iii) To correlate their physics theory concepts through practical.
- iv) Understand the concepts of errors and their estimation.

## **Semester III**

### **Course Name USPH301 Mechanics and Thermodynamics**

On successful completion of this course, students will be able to :

- i) Understand the concepts of mechanics & properties of matter & to apply them to problems.
- ii) Comprehend the basic concepts of thermodynamics & its applications in physical situation.
- iii) Learn about situations in low temperature.
- iv) Demonstrate tentative problem solving skills in all above areas.

### **Course Name-USPH302 Vector calculus, Analog Electronics**

On successful completion of this course students will be able to : 1) Understand the basic concepts of mathematical physics and their applications in physical situations. 2) Understand the basic laws of electrodynamics and be able to perform calculations using them. 3) Understand the basics of transistor biasing, operational amplifiers, their applications 4) Understand the basic concepts of oscillators and be able to perform calculations using them. 5) Demonstrate quantitative problem solving skill in all the topics covered.

### **Course Name- USPH303 : Applied Physics - I**

On completion of this, it is expected that

- i) Students will be exposed to contextual real life situations.
- ii) Students will appreciate the role of Physics in 'interdisciplinary areas related to materials, Bio Physics, Acoustics etc.
- iii) The learner will understand the scope of the subject in Industry & Research.
- iii) Experimental learning opportunities will foster creative thinking & a spirit of inquiry.

## **USPHP2 Practical outcome**

On successful completion of this course students will be able to :

- i) Understand & practice the skills while performing experiments.
- ii) Understand the use of apparatus and their use without fear & hesitation.
- iii) Correlate the physics theory concepts to practical application.
- iv) Understand the concept of errors and their estimation.

## **Semester IV**

### **Course Name- USPH401 : Optics and Digital Electronics**

On successful completion of this course students will be able to :

- 1) Understand the diffraction and polarization processes and applications of them in physical situations.
- 2) Understand the applications of interference in design and working of interferometers.
- 3) Understand the resolving power of different optical instruments.\
- 4) Understand the working of digital circuits
- 5) Use IC 555 timer for various timing applications.
- 6) Demonstrate quantitative problem solving skills in all the topics covered.

### **Course Name-USPH402: QUANTUM PHYSICS**

On successful completion of this course students will be able to :

- 1) Understand the postulates of quantum mechanics and to understand its importance in explaining significant phenomena in Physics.
- 2) Demonstrate quantitative problem solving skills in all the topics covered

### **Course Name-USPH403 : Applied Physics II**

On successful completion of this course, students will be able to :

- i) Understand the concepts of mechanics & properties of matter & to apply them to problems.
- ii) Comprehend the basic concepts of thermodynamics & its applications in physical situation.
- iii) Learn about situations in low temperature.
- iv) Demonstrate tentative problem solving skills in all above areas.

### **Course Name-USPHP4: Practical course -4**

On successful completion of this course students will be able to :

- i) Understand & practise the skills while performing experiments.
- ii) Understand the use of apparatus and their use without fear & hesitation. I
- iii) Correlate their physics theory concepts to practical application.
- iv) Understand the concept of errors and their estimation.

# **M.COM**

## **Vision:**

“To provide comprehensive education, which will train our students to be globally competitive and socially responsible citizens”

## **Mission:**

- To provide education and training to students in the fields of Commerce, Trade, Management and Information and Technology so as to make them fit and ready for the industry.
- To collaborate Academia with Industry for equipping our students with relevant knowledge, skills and attitude.
- And above all, to make our graduates socially sensitive with high sense of civility.

**Name of the Programme: M.Com**

## **PROGRAMME OBJECTIVES**

PO1: Learners will be able to familiar with ICT to thrive in the information age

PO2: Learners will be able to cultivate aptitude for undertaking research activity

PO3: Learners will be able to gain advanced knowledge of Accounting, Taxation, Management, Marketing, E-Commerce, Entrepreneurship, Costing and Financial Reporting.

PO4: Learners will be able to enhance the competencies to be employed or to be self-employed.

## **PROGRAMME OUTCOME M.Com (Accountancy)**

After completing the M. Com. program the learners will be able:

PO1: To provide hands-on training for online tax return/challan filing related to Income Tax & GST.

PO2: To develop knowledge on preparing financial statements of Banking, Insurance and Holding Companies.

PO3: To train Learners in various cost control & cost management techniques

PO4: To enable learners to gain knowledge in International Financial Reporting Standards (IFRS), and Corporate Accounting.

PO5: To prepare learners for a project based on analysing and evaluating the performance of Indian companies by using the Capitaline E-database.

## **Semester 1**

### **1.Strategic Management**

#### **Course objectives**

- 1.To comprehend the concept of strategy management.
- 2.To relate their understanding of strategy formulation to various corporate houses by means of case study.
- 3.To assess strategy implementation at various levels and scale of business organization.
- 4.To utilize skills on various control strategies that the companies adopt.

#### **Course Outcomes:**

CO1: Describe the concepts of strategic management and strategic management process in the business setting.

CO2: Apply environmental scanning for finding solutions to business problems and formulate and implement strategies for business.

CO3: Analyze different strategies and techniques in business.

CO4: Appraise the various types of evaluations and controls in business.

CO5: Apply the techniques of operation control to business situations. (Level: Apply

## **2.Economics for Business Decisions**

### **Course objectives**

- 1.To provide a clear understanding and firm foundation of basic microeconomic concepts.
- 2.To analyze consumer and producer behavior as well as market structure in the context of national, local, and regional development needs.
- 3.To introduce the learner to advanced microeconomic concepts like moral hazards, adverse selection, Signaling and contracts under asymmetric information.
- 4.To compare the different market structures and Pricing methods from an ethical point of view
- 5.To train the learner in the application of tools of business decision making like Demand
- 6.Forecasting, Cost, Revenue and Breakeven analysis and Game Theory to real world situations.

### **Course outcomes**

CO1: Explain the concepts of microeconomics in a business setting.

CO2: Analyze the consumer and producer behavior as well as market structure in the context of national, local, and regional development needs.

CO3: Apply advanced microeconomic concepts like moral hazards, adverse selection, signaling and contracts under asymmetric information.

CO4: Compare the different market structures and pricing methods from an ethical point of view

CO5: Apply the tools of business decision making like demand forecasting, cost, revenue and breakeven analysis and game theory to real world situations.

## **3.Business Ethics & CSR**

### **Course Objectives**

- 1.To understand business ethics and corporate governance in business.
- 2.To familiarize the learner with the corporate social responsibility and its impact on the stakeholders.
- 3.To understand CSR & global trends, areas, policy and future of CSR.

## Course outcomes

CO1: Explain concepts and relevance of Business Ethics and Corporate Governance in the modern era. (Level: Understand)

CO2: Apply corporate social responsibility in the Indian context. (Level: Apply)

CO3: Analyze the ethical and social responsibilities of the business towards various stakeholders (Level: Analyze)

CO4: Analyze the issues involved in Corporate Governance Norms for the corporate sector while listing the companies on the stock exchanges. (Level: Analyze)

CO5: Create the business set-up, meeting ethical, social and governance norms that would ensure ecological and global sustainability.

## **4. Cost & Management Accounting**

### **Course Objectives**

1.To study the concept of marginal costing and its application in managerial decision making under appropriate situation

2.To understand variance analysis through the technique of standard costing.

3.To realise the importance of budgets, controlling costs , co- ordination among different departments, comparing actual outcomes with budgeted and working on variances to achieve maximum profits

4.To understand operating costing of service industry

5.To distinguish between fixed and variable cost to ascertain the cost of the service rendered to customers

### **Course outcomes**

CO1 - Apply the techniques of marginal costing as a decision making tool.

CO2- Solve practical sums on the managerial decisions like make or buy, design of Product mix, and applying the Key –Factor in any manufacturing environment.

CO3- Compare the actual costs and revenue with standards to compute variances whether favourable or adverse

CO4- Solve practical sums on flexible budgets, production budgets, cost budgets and cash budgets

CO5- Solve practical problems based on application of Operating costing in the organizations such as goods and passenger Transport service, hotels and hospitals.

## **Semester II**

### **1. Research Methodology for Business**

#### **Course Objectives**

1. To enhance the abilities of learners to undertake research in business & social sciences
2. To enable the learners to understand, develop and apply the fundamental skills in formulating research problems
3. To enable the learners in understanding and developing the most appropriate methodology for their research
4. To make the learners familiar with the basic statistical tools and techniques applicable for research

#### **Course outcome**

- CO1: Describe the research concepts.
- CO2: Apply the research skills in formulating the research problem.
- CO3: Design a research proposal.
- CO4: Evaluate data and analyze it.
- CO5: Develop a research report

### **2. Macro Economics concepts and Applications**

#### **Course Objectives**

1. To provide a clear understanding and firm foundation of basic macroeconomic Concepts  
The course aims at introducing the learner to advanced macroeconomic concepts like Ricardian Equivalence and Theories of Development.
2. To train the learner in application of tools of business decision making like DSGE modelling.
3. To analyze the impact of macroeconomic policies on business decision making.

#### **Course outcome**

- CO1: Describe the macroeconomic concepts.
- CO2: Apply the theory of income and employment to business decisions.
- CO3: Explain concepts like the Ricardian Equivalence and Theory of Development.
- CO4: Explain the concepts of inflation and types of inflation.
- CO5: Analyze the monetary and fiscal policy and its impact on business decisions.



(Level: Analyze)

CO6: Evaluate the balance of payments and foreign exchange market in the context of national and global markets. (Level: Evaluate)

### **3. E-Commerce**

#### **Course Objectives**

- 1.To make students learn new concepts of trade and business with respect to e-commerce.
- 2.To provide learners an in-depth insight of e-business.
- 3.To sensitize and create awareness about online safety, security, and payment methods.
- 4.To acquaint the learners with legal and regulatory framework for e-commerce activities.

#### **Course outcome**

CO1: Describe the concepts of trade and business with respect to e-commerce.

CO2: Analyze the various types of e-business and its e-applications.

CO3: Evaluate the electronic payment methods for e-business

CO4: Explain the legal and regulatory framework for e-commerce

### **4. Corporate Finance**

#### **Course Objectives**

- 1.To understand the fundamental concepts of time value of money and calculate future and present value of cash flows.
- 2.To analyse financial statements with the help of advanced non- conventional ratios
- 3.To introduce the learners to the concept of business risk and financial risk
- 4.To train the students for using the 'Capitaline Database Software' for fundamental analysis of a company.
- 5.To facilitate learners for pursuing a career in Portfolio Management or Research and Analysis in a corporate house
- 6.To assign individual/group projects based on Capitaline Database as a part of internal evaluation.

#### **Course outcome**

CO1- Analyse the impact of time value of money on financial decisions with respect to techniques of discounting, compounding, Bond valuation and YTM

CO2- Recall the knowledge of financial ratios

CO3 – Evaluate financial statements by applying various conventional as well as non - conventional ratios along with the concept of CAGR

CO4 – Evaluate the risk factor involved in capital structuring decisions

CO5 – Solve practical problems on operating and financial leverages

CO6- Develop a skillset to prepare and present research projects/papers by extracting authentic data from Capitaline software as a part of internal evaluation

### **Semester III**

#### **Course Objectives**

##### **1.Advanced Financial Accounting**

- 1.To understand the procedure of liquidation of companies
- 2.To study financial statements of banking companies, prepared as per rules prescribed by RBI.
- 3.To study financial statements of insurance companies prepared as per rules prescribed by IRDA.
- 4.To understand various components of annual reports.

Course outcome

After completing this Course, the students should be able to:

CO1: Calculate the Preferential payment to different parties at the time of dissolution ( level-Analyze)

CO2: Solve practical problems on statement of affairs and Liquidators Final statement at the time of winding up of the company ( level-Apply)

CO3: Solve practical problems on preparing the final accounts of Banking companies (level-Apply)

CO4: Apply the provisions of IRDAI Act to prepare the financial statement of Insurance companies (level-Apply)

CO5: Analyze the annual report ( level-Analyze)

CO6: Develop presentation skills (level-Create)

##### **2.Direct Tax**

#### **Course Objectives**

- 1.To understand the provisions of clubbing of income and set off & carry forward of losses.
- 2.To learn the provisions of Income tax for computation of income and tax of individual

3.To study the returns of income and the procedure for filing of income tax returns, including belated returns

4.To study the provisions of Income tax Act with regards to TDS and advance tax

5.To have a practical exposure to the process of e-filing of PAN application and income tax returns

6.To develop skills to compute taxable Income of an Individual

Course outcome

CO1: Apply clubbing provisions in computing total income of an assessee

CO2: Apply the set off and carry forward provisions of Income tax Act to arrive at total income of an assessee

CO3: Compute the tax deductible at source, advance tax liability and interest for non-payment or short payment of advance tax

CO4: Determine the taxable income and the tax liability of an individual assessee

CO5: Show practically the process of e-filing of PAN application and returns of income for an individual assessee.

### **3.Project Work I**

#### **Course Objectives**

1.To apply proper research methodology to conduct the research

2.To evaluate the research findings and conclusions.

3.To able to analyse the conclusions from research

#### **Course outcome**

CO1: Evaluate the business environment while working during internship (Level: Evaluate)

CO2: Recognise the interpersonal communication skills required in a business set-up (Level: Remember)

CO3: Construct a report based on the experience gained during internship (Level: Create)

CO4: Analyze the experience gained during internship to make a presentation (Level: Analysis)

## **4.Financial Services**

### **Course Objective**

- 1.Understand the role and function of the financial system in reference to the macro economy.
2. Demonstrate an awareness of the current structure and regulation of the Indian financial services sector.

### **Course Outcomes**

CO1.To assess and create strategies to promote financial products and services

## **Semester IV**

### **Corporate Financial Accounting**

#### **Course Objectives**

- 1.To explain the conceptual framework of financial reporting and to acquaint the learners with the tools, techniques and process of financial management in the realm of financial decision making.
- 2.To explain the emerging concepts of corporate reporting like accounting for Human resources and use of Value Added Statements (VAS) as additional tools for management reporting and analysis
- 3.To provide understanding of nature, importance, structure of corporate finance- related areas and to impart knowledge regarding valuation of Goodwill and Shares, thereby enabling fair calculation of value of business
- 4.To make students familiar with the concept of consolidation of accounts, methods and provisions of relevant accounting standards.

#### **Course outcome**

After completing this Course, the students will be able to:

CO1- Evaluate case studies based on AS 26- Intangible asset and AS 29- Provisions, Contingent Asset and Contingent liabilities

CO2 –Apply the concept of Value Added Statement (VAS) and Human resource accounting for management analysis and decision making

CO3 –Apply the various techniques of valuation of goodwill and shares enabling fair valuation of company's assets and business

CO4- Solve practical problems on consolidated financial statements as per AS 21 and AS 23

## **2.Indirect Tax Introduction of Goods and Service Tax**

### **Course Objectives**

- 1.To give the learners an overview of the Goods and Service Tax Act
- 2.To understand the procedure for registration under GST Act
- 3.To study the collection of tax as well as place of supply concept under IGST Act
- 4.To enable the learners to understand the procedure for payment of GST
- 5.To give a practical exposure to students about the process of online registration for GST
- 6.To prepare students for employment in taxation firm

### **Course outcome**

CO1: Describe the framework of GST introduced in India and the constitutional provisions pertaining to levy of GST.

CO2: Explain when a person becomes liable to get registered under GST and the procedure for GST registration

CO3: Discuss the steps involved in the process of payment of GST

CO4: Show practically the process of registration under GST and filing of GST returns

## **3.Research Based Project Work – II**

### **Course Objectives**

- 1.To apply proper research methodology to conduct the research
- 2.To evaluate the research findings and conclusions.
- 3.To able to analyse the conclusions from research

### **Course outcome**

CO1: Identify topic for research

CO2: Apply proper research methodology to conduct the research

CO3: Analyze the data collected

CO4: Evaluate the research findings and conclusions

CO5: Construct a research report

## **4.Financial Management**

### **Course Objective**

- 1.An understanding of the role of financial management in business firms and the essentials of corporate finance.
2. Understand and apply capital budgeting techniques, and apply the theory of capital structure to assess a firm's leverage and the cost of capital.
- 3.Analytical Problem-Solving Skill: The analytical ability to develop and utilize accounting data, financial data, and other information to solve complex and unstructured business problem

### **Course Outcome**

CO1 To understand financial leverage and shareholders risk in reality.

CO2 To comprehend issues in dividend decisions that affects share price

CO3 To make students understand financing of working capital and norms of bank finance to get jobs in various industries.

# DEPARTMENT OF CHEMISTRY

## MISSION

We aim to provide the students with sound preparation for requirement of modern Industry and provide competency in basic academic research as well as a cohesive, clearly structured overview of Chemistry

## VISION

The development of fundamental understanding, with the emphasis on new structural, synthetic and theoretical techniques applicable in both academic and industrial contest.

## M.Sc. I

### PROGRAMME OUTCOME

PSO1 Knowledge: develop knowledge, understanding and expertise in their chosen field of chemical science.

PO2 Green Approach: awareness about usage of environmental methodologies

PO3 Analytical Approach: develop critical thinking and problem solving ability with accuracy and valid reasoning

PO4 Effective communication: develop ability to analyse, interpret and communicate effectively the ideas, knowledge and information orally, written, electronically and through media

PO5 Social responsibility: understanding of socially relevant aspects of the subjects, application of knowledge for sustainable development, awareness about environmental and health safety

PO6 Ethics: understand the different values and moral dimensions associated with knowledge, decisions and related responsibility

PO7 Personality development: build the personality of an individual as a responsible citizen, scientist, academician, industrialist, team leader, team member, social personality

## COURSE OUTCOMES

### SEMESTER I

- **Course (Paper) Name and No.: Physical Chemistry**

CO1 Memorize concept Maxwell equations, Maxwell thermodynamic Relations; it's significance

CO2 Understand Joule Thomson coefficient in terms of van der Waals constants.

CO3 Apply Third law of Thermodynamics to find out absolute entropy

CO4 Know Classical Mechanics, failure of classical mechanics: Need for Quantum Mechanics

CO5 Understand Schrödinger wave equation as the eigen value equation of the Hamiltonian operator

CO6 Apply of quantum mechanics for Particle in a one, two- and three-dimensional box

CO7 Explain the Validity of this equation for aqueous and non- aqueous solution

CO8 Know the working of Batteries: Alkaline fuel cells, Phosphoric acid fuel cells, High temperature fuel cells [Solid – Oxide Fuel Cells (SOFC) and Molten Carbonate Fuel Cells]

- **Practical's**

CO1 Handle and Understand principles of different instruments like Potentiometry, Conductometry, pH Metry.

CO2 Determine the heat of solution of sparingly soluble acid.

CO3 Determine thermodynamic solubility product and solubility product of Calcium Sulphate and calcium Hydroxide respectively

CO4 From graphical representation identify functions are acceptable or non- acceptable

- **Course (Paper) Name and No.: inorganic Chemistry**

CO1. explain recapitulation of hybridization, Molecular Orbital Theory

CO2. Understand Concept of resonance, Representation of Groups

CO3. Applications of Group Theory, Structures of Compounds

CO4. Preparative methods, Applications in the field of semiconductors, solar cells

- **Practical's**

CO1. Inorganic Preparations Bis-(tetraethylammonium) tetrachloro Nickelate, Tetrammine monocarbonato Cobalt (III) Nitrate

CO2. Determination of equilibrium constant by Slope intercept method for Fe<sup>3+</sup>/ SCN<sup>-</sup> system

CO3. Determination of Electrolytic nature of inorganic compounds by Conductance measurement.

- **Course (Paper) Name and No.: Organic Chemistry**

CO1 Students will able to learn Thermodynamic and kinetic requirements of a reaction rate and equilibrium constants, reaction coordinate diagram, transition state (activated complex), nature of activated complex,

CO2 Student can able to learn Factors affecting acidity and basicity: Electronegativity and inductive effect, resonance, bond strength, electrostatic effects, hybridization, aromaticity and solvation.

CO3 Understand benzyne mechanism

CO4 Understand S<sub>N</sub>Ar and S<sub>N</sub>Ar1

CO5 Discuss Molecules with two or more chiral centers

CO6 Understand oxidation of alcohol to aldehyde and ketones

CO7 Understand reduction by using metals.

CO8 Explain mechanism of wolf kishner reduction and Clemensens Reduction.



- **Practical's**

CO1 Understand practical aspect of preparation of organic compounds.

CO2 Able to do planning of organic synthesis.

CO3 Can write down reactions.

CO4 Understand purification of organic compound by recrystallization, sublimation etc.

CO5 Perform thin layer chromatography for checking Purity of product.

CO6 Able to take melting point of the product.

- **Course (Paper) Name and No.: Analytical Chemistry**

CO1 Student will get an idea about basics of Analytical chemistry, quality management system, safety in laboratories, accreditation processes and GLP

CO2 Student will understand the concept of chemical calculations, which used in estimation concentration, pH, solubility constant of various solution

CO3 Student will understand the principle, instrumentation and applications of various types of spectroscopic techniques

CO4 Student will learn the principle of different thermal analytical method (i.e. TGA, DTA and DSC).

- **Practical's**

CO1 Student will learn non-instrumental methods of quantitative estimation

CO2 Students will get practical knowledge for determination of various parameters related to ion exchange chromatography

CO3 Students will learn treatment and interpretation of analytical data

## **SEMESTER II**

- **Course (Paper) Name and No.: Physical Chemistry**

CO1 Understand Fugacity of real gases, Determination of fugacity of real gases

CO2 Explain Real solutions: Chemical potential in non-ideal solutions excess functions of non-ideal solutions

CO3 Derive expressions for the total wave function for 1s, 2s, 2p and 3d orbitals of hydrogen.

CO4 Write Hückel Molecular Orbitals theory for ethylene, 1,3-butadiene and benzene.

CO5 Know enzyme action on rate of reaction.

CO6 Explain Inhibition of Enzyme action: Competitive, Non-competitive and Uncompetitive Inhibition. Effect of pH, Enzyme activation by metal ions, Regulatory enzymes

CO7 Explain Reaction in Gas Phase i.e. Unimolecular Reactions: Lindeman-Hinshelwood theory, Rice-Ramsperger-Kassel (RRK) theory.

CO8 Explain Gibbs Phase rule, Two component system, Three component system

- **Practical's**

CO1 Handle and Understand principles of different instruments like Potentiometry, Conductometry, pH Metry and colorimeter CO2 Study Phase diagram of three component system.

CO3 With the help of Dilatometer determine rate constant of decomposition reaction of diacetone alcohol.

CO4 From graphical representation identify Shape of Orbitals.

- **Course (Paper) Name and No.: Organic Chemistry**

CO1. Rate of reactions, factors affecting the rate of reactions, techniques for determination of rate of reaction

CO2. Explain Redox reactions: inner and outer sphere mechanisms,

CO3. Explain Structure and bonding on the basis of VBT and MOT in the following organometallic compounds

- **Practical's**

CO1. Prepare Analysis of Devarda's alloy ,Analysis of Cu – Ni alloy

CO2. Estimation of Copper using Iodometric method Potentiometrically.

CO3. Estimation of Fe<sup>+3</sup> solution using Ce(IV) ions Potentiometrically

- **Course (Paper) Name and No.: Organic Chemistry**

CO1 Understands regioselectivity in enolate formation

CO2 Gain knowledge of alkylation of enolates

CO3 Students can able to understands Applications of FMO concepts in (a) SN<sub>2</sub> reaction, (b) Lewis acid base adducts (BF<sub>3</sub>-NH<sub>3</sub> complex), (c) ethylene dimerization to butadiene, (d) Diels-Alder cycloaddition, (e) regioselective reaction of allyl cation with allyl anion (f) addition of hydride to formaldehyde.

CO4 Students will learn about the Principle and applications of ultraviolet spectroscopy.

CO5 To understand the infra-red spectroscopy in organic structure determination

CO6 Students can able to learn Factors affecting the position and intensity of UV bands – effect of conjugation, steric factor, pH, and solvent polarity.

CO7 Calculation of absorption maxima for above classes of compounds by WoodwardFieser rules (using Woodward-Fieser tables for values for substituents).

CO8 To learn about the Principle and applications of Infrared spectroscopy.

- **Practical's**

CO1 Able to identify chemical type of component present in binary mixture.

CO2 Able to separate components from binary mixture.

CO3 Can perform fractional distillation.

CO4 Can purify organic compounds by recrystallization method.

CO5 Can identify the functional group of organic compound.

CO6 Able to take melting point of separated components.

- **Course (Paper) Name and No.: Analytical Chemistry**

CO1 Student will get conversant with advanced separation techniques and theoretical aspects involved

CO2 Student will learn advanced spectroscopic techniques (i.e. X-ray spectroscopy, mass spectrometry etc.)

CO3 Student will study of detail principle, instrumentation and applications of surface techniques of analysis

CO4 Student will understand the concept of various types of electro-analytical techniques

- **Practical's**

CO1 Students will perform various instrument based analysis

CO2 Students will learn different methods of spectrophotometric determination

CO3 Students will learn graphical interpretation of data

Course Outcomes Class: M.Sc. II Organic Chemistry S

## **M.SC. II CHEMISTRY**

- **PROGRAMME SPECIFIC OUTCOME**

PSO1 PSO1: Develop analytical thinking and apply the same for understanding principles, proposing mechanism and logical conclusions.

PSO2 PSO2: Comprehensive understanding of the interdisciplinary nature of Chemistry and emerging trends in Chemistry.

PSO3 PSO3: Enormous employment opportunities at Research and Development as well as synthetic division of chemical, pharmaceutical, dyestuff and food industries.

PSO4 PSO4: Competency in design and planning of synthesis and carry out with Good Laboratory Practices.

PSO5 PSO5: Access, search and use of chemical literature and acquiring necessary skills to succeed in research and advance studies.

PSO6 PSO6: Research opportunities to pursue Ph.D. programme.

PSO7 PSO7: Competency in handling instruments and interpretation of spectral data for structure determination of organic compounds

### **SEMESTER III**

- **Course (Paper) Name and No.: Organic Chemistry I**

CO1 Describe organic reactive intermediates.

CO2 Explain neighbouring group participation.

CO3 Understand Woodward- Hoffmann rules.

CO4 Understand Huckel and Mobius Method. CO5 Can draw molecular orbital diagram for ethylene, 1, 3- butadiene etc.

CO6 Understand the Classification of point groups based on symmetry elements with eg.

CO7 Appreciate important of: reduction of cyclohexanones (with LiAlH<sub>4</sub>, selectride and MPV reduction) and oxidation of cyclohexanols.

CO8 Write mechanism of Norrish-I, Norrish-II, Paterno -Buchi reaction, Barton reaction.

- **Practical's**

CO1 Will able to identify chemical type of component present in ternary mixture.

CO2 Will able to separate components from ternary mixture.

CO3 Can perform fractional distillation.

CO4 Can purify organic compounds by recrystallization method.

CO5 Can identify the functional group of organic compound.

CO6 Will able to take melting point of separated components.

- **Course (Paper) Name and No.: Organic Chemistry II**

CO1 Identify the name of reaction.

CO2 Predict the mechanism of given reaction.

CO3 Define radicals and radical reactions.

CO4 Define hyper conjugation and recognize its influence on radical stabilities and the relative ease of radical formation

CO5 Write mechanism of Wittig reaction, Horner-Wadsworth-Emmons reaction, Barton-Kellogg olefination.

CO6 Describe  $\alpha$ -CH functionalization by nitro, Sulfoxide, sulfone and phosphonate group.

CO7 Explain Bamford-Stevens reaction, Julia olefination and its modification

CO8 Explain regiochemistry of oxymercuration and demercuration of alkene.

- **Practical's**

CO1 Will understand practical aspect of preparation of organic compounds.

CO2 Will able to do planning of organic synthesis.

CO3 Can write down reactions.

CO4 Will understand principle of steam distillation.

CO5 Can perform steam distillation

CO6 Will understand principle of vacuum distillation.

CO7 Can perform vacuum distillation.

CO8 Can perform column chromatography and thin layer chromatography

- **Course (Paper) Name and No.: Organic Chemistry III**

CO1 Classification of carbohydrates and types of naturally occurring sugars.

CO2 Classify the insect pheromones. CO3 Understand structure elucidation of prostaglandins.

CO4 Write down the synthesis of triacontanol.

CO5 Understand proton NMR spectroscopy.

CO6 Understand <sup>13</sup>C-NMR spectroscopy.

CO7 Can solve problems based on UV, IR, <sup>1</sup>H-NMR and <sup>13</sup>C-NMR.

CO8 Understand two dimensional spectroscopic techniques

- **Course (Paper) Name and No.: Organic Chemistry IV**

CO1 Understand the basic terms used in medicinal chemistry.

CO2 Describe pharmacokinetics.

CO3 Explain computer added molecular graphics based drug design.

CO4 Understands the general pathway of amino acids biosynthesis.

CO5 Synthesize the malonyl CoA, saturated fatty acids, prostaglandins and aromatic polyketides by acetate pathway.

CO6 Explain preparation of organic compounds by use of green reagents, green catalyst and green solvent.

CO7 Understand solid state reactions.

CO8 Describe the use of nanocatalyst in green synthesis.

## **SEMESTER IV**

- **Course (Paper) Name and No.: Organic Chemistry I**

CO1 Explain linear free energy relationship for determination of organic reaction mechanism.

CO2 Write Hammett equation and Yukawa-Tsuno equation.

CO3 Explain methods for determination of enantiomer and diastereomer composition.

CO4 Explain synthesis of L-DOPA. CO5 Give Cram's rule. CO6 Explain Felkin-Anh model.

CO7 Explain reduction of prochiral carbonyl compounds and olefins.

CO8 Give use of chiral BINOLs, BINAPs.

- **Practical's**

CO1 Will understand practical aspect of preparation of organic compounds by two steps.

CO2 Will able to do planning of organic synthesis.

CO3 Can write down reactions.

CO4 Will understand purification of organic compound by recrystallization, sublimation etc.

CO5 Can perform thin layer chromatography for checking Purity of product.

CO6 Will able to take melting point of the product.

- **Course (Paper) Name and No.: Organic Chemistry II**

CO1 Understand the concept of protection and deprotection in organic synthesis.

CO2 Able to do planning of synthesis.

CO3 Understand the term of retrosynthesis.

CO4 Explain role of Palladium in organic synthesis.

CO5 Write mechanism of olefin metathesis using Grabb's catalyst.

CO6 Explain application of Ni, Co, Fe, Rh and Cr carbonyls in organic synthesis.

CO7 Describe application of samarium iodide in reduction of organic halide, aldehyde and ketones,  $\alpha$ -functionalized carbonyl and nitro compounds.

CO8 Understand the application/role of Ce (IV) in synthesis of heterocyclic quinoxaline derivatives

- **Practical's**

CO1 Student will able to interpret spectral data for organic compounds.

CO2 Student will able to determine the molecular formula of organic compound from 13- rule or by percentage of elements present.

CO3 Student will able to predict the functional group peaks from IR spectrum.

CO4 Student can calculate molar absorptivity of compound from U.V spectrum.

CO5 Student can interpret CMR , PMR and Mass spectrum

- **Course (Paper) Name and No.: Organic Chemistry III**

CO1 Discuss Structural and stereochemical features of different kinds of steroids.

CO2 Explain Biological role of steroids.

CO3 Write synthesis 16-DPA from cholesterol and plant sapogenin.

CO4 Understand biological importance of vitamins.

CO5 Write down synthesis of vitamins.

CO6 Write down structural elucidation of penicillin-G

CO7 Student will able to do nomenclature of heterocyclic compounds.

CO8 Student will understand structure, reactivity and synthesis of important heterocyclic compounds.

- **Course (Paper) Name and No.: Organic Chemistry**

CO1 Student will learn every aspect of publication of research paper such as terms associated with journal, referencing and library resources.

CO2 Student will get conversant with the methods of data analysis and various software's employed for it.

CO3 Students will get knowledge of actual writing scientific papers.

CO4 Students will get information of the safety and ethical handling of chemicals

#### **PROJECT EVALUATION**

CO1 Student will actually get involved in research work.

CO2 Student will understand the analysis of data generated by their research work.

CO3 Student will learn how to present research work