Course Outcomes:

B.A.-I Subject: Political Science

Paper-I: Political Theories

On studying this paper, the student will be able to:

1. Know about state, its essential elements and different theories of the origin of state and basic knowledge about political science.
2. Know about citizenship equality liberty and many other important things.

Paper-II: State Government and Politics

On studying this paper, the student will be able to:

1. Know about constitution its main characteristics and fundamental rights and duties.
2. Know about state government, Election Commission and electoral reform.

B.A.-II Subject:

Political Science Paper-I: Western Political Thought

On studying this paper, the student will be able to:

1. Know about main western political thinker just like Plato, Aristotle, Hobbes, Locke, Rousseau and their thoughts about political institutions.
2. Know the different principles given by various thinkers.

Paper-II: Comparative Government and Politics

On studying this paper, the student will be able to:

1. Know the main political system which is adopted by different countries.

2. Know about the main characteristics of political system of different countries like Britain, China, America and Switzerland.

B.A.-III Subject: Political Science

Paper-I: International Politics

On studying this paper, the student will be able to:

1. Know about the significance of international politics and its impact on different countries.
2. Know about the Disarmament, Globalization and Diplomacy etc.

Paper-II: Public Administration

On studying this paper, the student will be able to get:

1. Knowledge of Public Administration its importance and scope.
2. Knowledge about government's part like legislature, executive and judiciary and its control on administration.

Course Outcome

Major areas that will be covered under UG (Sociology) Program Semester wise:-

Sociology: An Introduction, Indian Society, Foundations of Sociological Thoughts, Crime and Society, Sociology of Tribal Society, Methods of Social Research.

B.A. I Sociology: An Introduction

Outcome - Students will gain insight into the emergence of Sociology as an independent subject of enquiry as well as the basic concepts of sociology, social institutions and social

processes. They also get to know the utility of sociology and about Applied Sociology and Social Ecology.

Indian Society

Outcome - In this paper students will dive deep into the core of Indian society. They will understand about the Ancient concepts like Varna, Ashram system, Theory of Karma etc. They will also learn about the cultural diversity prevalent in India, social institutions related with different religions and tribes, changes occurring in the Indian society through the process of Globalization, Liberalization etc. and some social issues and problems of the state of Chhattisgarh.

B.A. ll - Foundations of Sociological Thoughts

Outcome - Students would be able to gain knowledge about the emergence and development of Sociology and the pioneers of the subject like Auguste Compte, Karl Marx, Emile Durkheim, Max Weber, Vilfredo Pareto etc. and some of their important classical theories along with the development of sociological thoughts in India.

Crime and Society

Outcome - This paper will develop an understanding of the concepts of crime, law and criminal justice system. Students will be able to understand crime rates, patterns and types of crime and punishment. They will know about social disorganization and the correctional process too.

B.A. III - Sociology of Tribal Society

Outcome - One of the important components of Indian society is the Tribal Society. Students get to know about the concept,

classification, culture, beliefs, religion, customs, institutions as well as social problems, changes and mobility prevalent among the aboriginals and the schemes of tribal development. They would also learn about some important tribal communities of Chhattisgarh.

Methods of Social Research

Outcome - Students will understand the meaning, scope and importance of social research, scientific method and its logic. They will gain knowledge about the types of research, techniques of data collection, meaning and significance of statistics and measures of central tendency.

Course Outcomes:

B.A.- I

Subject: Geography

Paper – I : Physical Geography

Understand the structure of different part of earth and applied oceanography & climatology.

Paper –II : Human Geography

Understand different region of human geographical knowledge and human and environment relationship.

Paper – III: Practical Geography

Map making and scale of the maps and diagram and statistical technique knowledge about chains tap survey.

B.A. – II

Subject : Geography

Paper- I : Economic & Resources Geography

To understand the use and conservation of economic & resource geography and also to learn about agriculture region , industrial region, trade and transport of the world.

Paper- II : Regional Geography with Special Reference to India

Understand regional Geography of India their physical and culture features.

Paper- III : Practical Geography

To learn statistical methods and making projections and know about weather map & prismatic compass survey.

B.A.- III

Subject : Geography

Paper- I : Remote sensing & G.I.S.

To understand the importance of Remote Sensing & G.I.S.

Paper- II : Geography Chhattisgarh

Knowledge of physical and cultural characteristics of Chhattisgarh state.

Paper- III : Practical Geography

Understand Topographical Sheets and socio-economic survey of village.

Course Outcomes:

B.A. - I Subject: Economics

Paper-I: Micro Economics

Upon successful completion of this Paper the student will be able to:

1. Factors affecting consumer demand.
2. Production and cost matrix in output determination.
3. Various market forms and determination of prices in these markets.
4. How factor prices are determined
5. Factors of welfare as conceptualized by economist.

Paper-II: Indian Economy

Upon successful completion of this Paper the student will be able to:

1. How Indian economy is changing toward a market based economy.
2. What are basic features of Indian Economy?
3. Planning in India and economic reform introduced and rationale behind reform.
4. Role of Industry and various policy decisions to induce industrial revolution in India.
5. Importance of foreign sector and rationale behind export promotion schemes.

B.A. - II Subject: Economics

Paper-I: Micro Economics

Upon successful completion of this Paper the student will be able to:

1. National income and understand how it is calculated.
2. Factors responsible for employment determination.

3. Consumption and investment and their importance in N.I. determination.
4. Trade cycles and various factors responsible for trade cycle.
5. Export- Import and its related concepts.
6. International institutions for trade and Economics.

Paper-II: Money Banking and Public Finance

Upon successful completion of this Paper the student will be able to:

1. How value of money changes.
2. Inflation and measures to control inflation.
3. Banks, their role in economy and Central Banking System.
4. State and effect of its intervention in the economy.
5. Sources of various revenues to state.
6. Public debt and economics effects.

B.A. - III Subject: Economics

Paper-I: Development and Environmental Economics

Upon successful completion of this Paper the student will be able to understand:

1. Economic well being of various nations; Poverty and emerging trends to measure poverty and deprivation.
2. Population and Economy linkage, various perspective developments.
3. Environment, Growing importance of study of Environment Economy inter play.
4. Various socio- economic issues affecting mankind.

Paper-II: Statistical Methods

Upon successful completion of this Paper the student will be able to:

1. Statistics, data collection
2. Measurement of representative values.
3. Easement of various representative values.
4. Inter-relationship between social and economic variables.
5. Construction of Index numbers and Measurement of trend.

Course Outcomes:

BA. / B.Sc. /B.Com. - Part-I

Subject: English Language:

On studying this paper, the student will be able to:

1. Development of comprehensive ability.
2. Improvement of vocabulary.
3. Effective communication skills.
4. Inculcation of moral and human values.
5. Acquire knowledge of Indian culture and tradition.
6. Write effectively and coherently.

BA. / B.Sc. /B.Com. - Part-II

Subject: English Language:

On studying this paper, the student will be able to:

1. Ability to discuss and respond to the content of the passage.
2. Knowledge of development of science and information technology.
3. Develop the writing skills through exercises in grammar and composition.

BA. / B.Sc. /B.Com. - Part III

Subject: English Language:

On studying this paper, the student will be able to:

1. Familiarity with values of Indian life and social system.
2. Development of India in the Modern context.
3. Development of linguistic competence and communication skills.
4. Writing skills through essay writing and comprehension.

Course Outcomes:

B.Sc.-Part- I

Subject: Chemistry

Paper-I: Inorganic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe atomic structure on the basis idea of de-Broglie matter-waves, Heisenberg uncertainty principle Schrodinger wave equation and atomic orbital.
2. Describe the shapes of S, p, d orbital's auf-bare and Pauli excessive principle hunt's rule 3. Write down the electronic configuration of elements and calculate EAN.
4. Describe the periodic (IE, EA, EN) trends in periodic table and their application.
5. Describe covalent bond on the basis of valence bond theory, directional characteristics of covalent bond hybridization with example of simple inorganic molecule.

6. Define bond parameters such as bond strength and bond energy and explain percentage ionic character. Ionic solids with reference to ionic structure, radius ratio, lattice defect, and semiconductor.
7. Describe lattice energy, salvation energy, polar sing power, Fagan's rule and metallic bonds.
8. Comparative study of s-block elements and salient feature of hydrides, salvation & compellation tendencies, function in bio systems and alkyl & aryls, chemistry of noble gases.
9. Comparative study of p-block elements, halides, hydrides, oxides and oxy acids of B, AI, N & P and their compounds.
10. Describe the principle involved in the detection of acids and basic radicals including interfering radicals.

Paper-II: Organic Chemistry

Upon successful completion of this subject the student will be able to:
1. Describe resonance, hyper conjugation, inductive effects, and H- bonding.
2. Describe mechanism of organic reaction including clearage of bond types of reagent and reaction intermediates.
3. Describe optical and geometrical isomerism including resolution, inversion, retention, recriminations, relative & absolute configuration and nomenclature.
4. Describe the cycloalkanes, Bayer's strain theory, and theory of stainless ring and banana bonds and reaction mechanism benzene & naphthalene their structure.

5. Study of chemical reactions of Alcohols, Alkanes, dienes and alkynes including elucidation, Diels-alder reaction.
6. Study of alkyls halides and aryl halides, mechanism and stereochemistry of nuclei Phillies substitution and elimination reaction.

Paper-III: Physical Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe the mathematical chemists including logarithmic relation, cure sketching, linear graph, straight line with slope and intercept.
2. Determine and workout integration and differentiation, permutation combination and probability.
3. Know about the computers, hardware and software computer language, programming and operation systems.
4. Describe molecular velocities - RMS, average and most probable velocities, Maxwell's law and other relevant details including J-T effect and lignifications of gases.
5. Describe ideal, real gases and derivation including Vander - Waal's equation.
6. Describe the liquid state, viscosity and surface tension, ideal and no ideal solutions.
7. Describe the colloid properties relate to vapor pressure osmosis, boiling and freezing points, molar masses and vent Hoff factor, Liquid crystals, emulsion, micelle, gel.
8. Describe the solid state - classification, symmetry, X-ray diffraction, miller indices and identification of unit cell.

9. Describe the chemical kinetics- rate of reaction, order of reaction and their determination.

10. Describe the catalysis - homogeneous and heterogeneous, industrial applications of catalysis.

Lab Course:

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

1. Analyze inorganic mixture containing four radicals (two acid and two basic) including interfering and combination of acid radicals.

2. Detect the functional group in the given organic compound and determine its melting & boiling prints.

3. Crystallize the given organic compound and determine its melting print.

4. Decolorize the given brown colored sugar.

5. Determine the percentage composition of binary mixture of liquids by viscometer and stalagmometer.

B.Sc.-Part- II

Subject: Chemistry

Paper-I: Inorganic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe the characteristic properties of d-block elements and elements of first transition series, their binary compounds and complexes.

2. Describe the chemistry of elements of second and third transition series.

3. Describe oxidation and reduction, use of red-ox potential data and red-ox diagrams.
4. Describe coordination chemistry, Werner theory, EAN, chalets, nomenclature, isomerism, VBT.
5. Describe the chemistry of lanthanides and actinides.
6. Describe acids and bases by Arrhenius, bronzed- lowery, Lax-flood, solvent system and Lewis concepts.
7. Describe the properties and reactions of non- aqueous solvents w.r.t liquid ammonia and liquid Sulpher dioxide.

Paper-II: Organic Chemistry:

Upon successful completion of this subject the student will be able to:

1. Describe the nomenclature, formation & chemical reactions of dihydric and trihydric alcohols and phenols.
2. Describe mechanism of rearrangements reactions, nudeophilic additions to carbonyl group.
3. Describe oxidation and reduction of aldehydes and ketoses.
4. Describe methods of formation & chemical reactions of carboxylic acid and substituted carboxylic acids.
5. Describe reactivity, structure and nomenclature, basicity, structure of amines.
6. Describe Gabriel phthalamide, Hofmann bromamide azo coupling reactions.
7. Describe orbital picture and aromatic character of pgrrole, furan, thiophene and pyridine.

8. Describe preparation and reaction of in dole, quinoline and iso quinoline and reaction of in dole, quinoline and iso quinoline and electro phallic substitution reactions.

Paper-III: Physical Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe fundamentals of thermodynamics system, internal energy, enthalpy, heat capacity of gases at constant volume and constant pressure.
2. Calculate w, q, du & dh for the liquefaction of expansion of ideal gases under isothermal and adiabatic conditions, entropy and entropy change.
3. Apply phase rule to one, two and three component systems.
4. Describe Nerst distribution law, Henry's law and their application.
5. Describe specific and equivalent conductance & effect of dilution on conductance.
6. Describe applications of Kohlnausch's law and theories of strong electrolytes, transport no. and its determination by different methods.
7. Describe electrochemical cell and its conventional representation pH and pKa.
8. Describe corrosion, types, theories and its prevention.

Paper: Lab Course

Upon successful completion of this subject the student will be able to:

1. Prepare standard solutions of oxalic acid.
2. Determine % of acetic acid in commercial vinegar using NaOH solutions.
3. Sprats different pigments of spinach using paper chromatography.
4. Determine RF value of organic compound using paper chromatography.
5. Understand effect of temperature on solubility of benzoic acids.
6. Calculate AH of salvation of benzoic acid in water.
7. Perform a laboratory experiment using conventional equipment, instrumentation and techniques and understand the principle well enough to interpret the data collected.

B.Sc.-Part- III

Subject: Chemistry

Paper-I: Inorganic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe metal- lagans bounding in transition metal complexes crystal field theory.
2. Describe the thermodynamics and kinetic aspect of metal complexes, factor affecting the stability of complexes, substitution reaction in square planer complexes.

3. Describe the magnetic properties of the complexes, determination of magnetic susceptibility, L-S coupling, magnetic moments and application of magnetic moment data.
4. Describe the electronic spectra of transitional metal complexes including types of electronic transition, spectroscopic ground state, orgel diagrams, spectra of hexa qua titanium complexion.
5. Describe organo metallic chemistry including definition, nomenclature and classification. Alkyls and aryls of Li, Al, Hg, Sn and Ti.
6. A brief account of metal- ethylene complexes, homogenous hydrogenation and mononuclear carbonyl and their nature of bonding.
7. Describe the bio-inorganic chemistry including essential and trace elements in biological system, the hemoglobin and myogblin, biological role of alkali and alkaline earth metals with special reference to Ca2+ and the nitrogen fixation.
8. Classification of acids and bases as hard and soft.
9. Describe HSAB concept, symbiosis and theoretical basis.
10. Describe inorganic polymers - silicon phosphous.

Paper-II: Organic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe the formation, structure and chemical reactions of Grignard reagent, organ zinc and organ lithium.

2. Describe the nomenclature, structure formation and reactions of trios, trio ether, euphonic acids, sylph on amides and sylph on guanidine.
3. Describe the organic synthesis via insolates including acidity of alpha hydrogen's, diethyl Malone's and ethyl ace to ace tale and their synthesis.
4. Describe the chaise condensation, Kato - Enola, taut amorism, alkylation of 1, 3-dithianes and a Kyla ion - acryl ion of enemies.
5. Classification, nomenclature of carbohydrates, mechanism of ova zone formation.
6. Describe the inter conversion of glucose & fracture, glucose to mannose, formation of gluers ides.
7. Describe mechanism of mote rotation, structure of ribose & doxy RI base disaccharides and poly saccharine.
8. Describe the chemistry of fats, oils and detergents including sanctification value, iodine value, acid value, soap and detergents.
9. Describe synthetic polymers polymerization such as free radical vinyl, ionic vinyl, Z-N, vinyl polymerization condensation or step polymerization.
10. Describe the polyester, polyamides, phenol formaldehyde resin urea formaldehyde resin, epoxy resin and rubbers.
11. Describe synthetic dyes, their classification and chemistry.
12. chemistry and synthesis of methyl orange , Congo red, malachite green , crystal violet , phenolphthalein , fluoresce in, alizarins and indigo.

13. Describe the absorption spectra including UV absorption spectroscopy, beer's lamberts law and type of electronic transition, concept of chromospheres and Auto chrome, different shift.
14. Describe infra-red spectroscopy including type of vibration, hook's law, selection rule, intensity of IR bands, finger print region and characteristic absorption of functional gap.
15. Describe the NMR spectroscopy including all parameters such as nuclear shielding, de-shielding, chemical shift, spin-spin splitting coupling.
16. Interpret the PMR spectra of simple organic molecule.

Paper-III: Physical Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe elementary quantum mechanism through black-body radiation, plank's law, photoelectric effect and heat capacity and Bohr model of H-Atom.
2. Describe de-Broglie, hypothesis, uncertainty principle, ware function, Schrodinger wave equation complete.
3. Describe elementary quantum mechanism with reference to molecular orbital theory.
4. Describe the spectroscopy and define its basic and spectrophotometer.
5. Describe the rotational spectrum and Vibration spectrum.
6. Describe the electronic spectrum along with concept of PE curves, frank-Condon principle.

7. Describe the photochemistry, law of photochemistry, Je Bloke diagram.
8. Describe the fluorescence, phosphorescence and quantum yield.
9. Describe the physical properties and molecular structure including optical activity, polarization, dipole moment and magnetic properties.
10. Describe the solutions; dilute solution and Collegative properties in details.

Paper- Lab Course

Upon successful completion of this subject the student will be able to:

1. Separate components of binary mixture of organic compounds.
2. Synthesize aspirin and sod. Trioxalato ferrate.
3. Estimate Ba as BaSO4 gravimetrically.
4. To verify Beer's law and determine the conc. of unknown solution of K2Cr2O7 by using digital photo elect uric colorimeter.
5. Students will be able to design and carry out scientific experiments as well as accurately record and analyze the results of such experiments.
6. Follow safety procedures and demonstrate proper use of personal protective equipment.

Course Outcomes:

Name of Program: B.Sc. in Zoology

B.Sc. – II

Paper-I: Anatomy and Physiology

1. Knowledge of the anatomical and physiological similarities and dissimilarities of vertebrate's animals by comparative study.

Paper-II Vertebrate Endocrinology, Reproductive Biology, Behavior, Evolution and Applied Zoology

1. Know about the endocrine glands, hormones and mechanism of their action.
2. Different evidences and theories of organic evolution.
3. The behavioral patterns in animals.
4. Economically important animal culture practices.

Practical Work:

1. Anatomical study of different Invertebrates and Vertebrates animals by Museum Specimens and Slides.
2. Experience the Skeletal system by viewing the bones of vertebrates.
3. Life Cycle of Honey Bee and Silkworm.

B.Sc. – III

Paper -I: Ecology, Environmental Biology, Toxicology, Microbiology and Medical Zoology

1. Know about the major ecosystems of world, characteristics of population, type of pollution and their regulation, conservation of natural resources.
2. Different type of chemical and biological toxicants, their effects and prevention.
3. Importance of Microorganism.

4. Study of Pathogenic animals, diseases and their symptoms and preventions.

Paper-II: Genetics, Cell Physiology, Biochemistry, Biotechnology and Bio-techniques

1. Know about the Human Genetics
2. Physiological functions of cells.
3. Different Bio-molecules and their metabolism.
4. Different Genetical Engineering Techniques.
5. Different Bio-Instrumental techniques.

Practical Work:

1. Blood group detection and RBC counting methods.
2. Estimation of Population Density.

Course Outcomes:

B.Sc.-I

Subject: Botany

Paper-I General Diversity of Microbes and Cryptogames

1. The student will acquire the knowledge of general diversity of microbes, algae, fungi, Bryophyte and Pteridophyta.

Paper-II Cell Biology and Genetres.

1. Knowledge of cell, cell organelle, genitive material, gene expression and genitive variation.

B.Sc.-II

Subject: Botany

Paper-I Diversity of seed plants and their systematics.

1. Diversity of gymnosperms and angiosperms.
2. Knowledge of Geological time scale and Fossils.

Paper-II Structure, development and reproduction in flowering plants.

1. The vegetative and reproductive structure and development of angiosperms.

B.Sc.-III

Paper-I Plant Physiology, Biochemistry and Biotechnology.

1. To know the importance of plant water relation, nutrients, Photosynthesis, Respiration and other life supportive processes in plants.

Paper-II Ecology and utilization of plants.

1. Knowledge about plants and environment and how plants are important and influence of our life.

Course Outcomes:

B.Com-I

Subject: Commerce

(Accounting group)

Paper – I Financial accounting

Upon successful completion of this subject the student will be able to:

1. State the uses and users of accounting information.

2. Explain and apply accounting concepts and principles and conventions.

3. Record basic accounting transactions and prepare annual financial statements.

4. Analyses interpret and communicate.

5. The information contained in basic financial statement and explains the limitations of such statements.

Paper - II Business communication

Upon successful completion of this subject the student will be able to develop effective business communication skills among the students.

Student Learning Outcomes -

1. Apply business communication strategies and principles to prepare effective communication for business situations.

2. Utilize analytical and problem solving skills appropriate to business communication.

3. Communicate via electronic mail, internet and other technologies.

4. Deliver an effective oral business presentation.

Management group

Paper - I Business mathematics

 1. Analyze real world scenario to recognize when simple and compound interest annuities, pay roll preparation, pricing, invoice preparation, trade discount, takes and depreciation are appropriate.

2. Formulate problems about the scenario creatively models.

3. Appreciate business mathematics concepts understand and be able to communicate the business concept and mathematics.

4. Work out simple and compound interest annuities.

5. Preparation of pay roll pricing, invoice trade discount taxes and depreciation problem in various situations.

Paper – II Business regulatory framework

This course is to provide a brief idea about the frame work of Indian business laws.

Student Learning Outcomes -

1. Basic legal knowledge to commerce students.

2. Knowledge of special contracts.

3. Knowledge of Negotiable Instrument Act.

4. Knowledge of Consumer Protection Act.

Economics group

Paper – I Business environment

 Upon successful completion of this subject the student will be able to:

1. Define the term ethics.

2. Understand the concept of business ethics.

3. Identity the types of ethical issue.

4. Understand the problems in business ethics.

5. Appreciate the concept of work ethics

6. Apply the knowledge of ethics in real life situations.

Paper – II Business economics

1. Upon successful completion of this subject the student will be able to:

2. **1.** Analyze the demand and supply condition and access the position of a firm.

3. **2.** Analyze operations of market under varying competitive conditions.

4. **3**. Analyze the local and global business environment.

5. **4**. Apply effective written and oral communication skills to business situation.

B.Com-IInd Year

Subject: Commerce

Group-I

Paper-I: Corporate accounting

Upon successful completion of this course the student will be able to define basic term-

1. A comprehensive understanding of the advanced issue in accounting for assets liabilities and owners equity.

2. The ability to account for a range of advanced financial accounting issues.

3. The ability to prepare consolidated account for corporate group.

4. An understanding of the principles of accounting for investments in associate.

5. Strong verbal and written communication skills.

Paper-II: Company law

Upon successful completion of this course the student will be able to define basic term-

1. Demonstrate comprehensive knowledge and understanding of social and economic policyconsiderations arising in this area.

2. Critically analyze complex problems in relation to the regulation of companies, apply the legal principles studies to these problems, evaluate competing arguments or solutions and present well supported conclusions both orally and in writing.

3. Read and study primary and secondary sources of company law with minimal staff guidance critically analyze, interpret, evaluate and synthesise information.

Group-II

Paper-I: Cost Accounting

Upon successful completion of this course the student will be able to define basic term-

1. Explain the terminology, basic concepts and principles of Cost Accounting

2. Prepare cost of goods manufactured statement

3. Analyze transactions and prepare accounting entries for job Costing and Process costing.

4. Analyzing data & prepare cost of production reports for process costing.

Paper-II : Principles of Business management

Upon successful completion of this course the student will be able to define basic term-

1. To facilitate students understanding of their own managerial skills.

2. Use effective communication skill to promote respect, trust and relationships.

3. Practice critical and creative thinking to emplane the decision making process.

4. Conduct research to identify new business trends and customer needs.

Group-III : Applied Economics

Paper-I: Business Statistics

Upon successful completion of this course the student will be able to define basic term-

It enables the students to gain understanding of statistical techniques as are applicable to business

Student Learning Outcomes -

1. Studying statistics learn a general system of concepts for Statistical Analysis.

2. Demonstrate the ability to apply fundamental concepts in exploratory data analysis.

3. Apply and interpret basic summary and modeling techniques for deviate data define the concept of least squares estimation in liner regression.

4. Prepare index number.

5. Knowledge of Forecasting Method industry vs. Company Sales.

Paper-II: Fundamentals of Entrepreneurship

Upon successful completion of this course the student will be able to define basic term-

1. Define basic term.

2. Identify the elements of success of entrepreneurial ventures.

3. Explain entrepreneurial project and its essential elements.

4. Consider the legal and financial conditions as well as the importance of the entrepreneurial infrastructure for starting a business venture.

5. Evaluate the effectiveness of different entrepreneurial strategies

6. Interpret their own business plan.

B.Com-IIIrd Year

Subject: Commerce

Paper-I: Income Tax

Objective:

It enables the students to know the basics of income tax and its implications.

Outcome:

Students can get the good basic practical knowledge of Income tax to develop the skill and techniques use in business and accounting.

Paper-II: Indirect Taxes

Upon successful completion of their course a student will be able to-

1. Analyze indirect taxes such as central excise duty, customs duty, state excise duty etc.

2. Learning the procedure of filing returns.

3. Learning the computation of various indirect taxes.

Paper-III: Management Accounting

Objective:

The course provides the students an understanding of the application of accounting techniques for management.

Outcomes:

Students can get good basic knowledge with skill concept of accounting and managerial decision about entrepreneurship.

Paper-IV: Auditing

Upon successful completion of the requirements for this course student will be able to:

1. Discuss the need for an independent or external audit and describe briefly the development of the role of the assurance provider in modern business society.

2. Explain the regulatory environment in which the external auditor operator and apply rules standards and pronouncement to the conduct of a financial report audit and assurance engagements.

3. Perform and apply professional ethics including code of conduct to specific scenario.

4. Describe the various level of persuasiveness of different types of audit evidence.

5. Understand auditor's legal liabilities and to be able to apply case law is making a judgment whether auditors might be liable to certain parties.

6. The course aims to develop student cognitive skills, especially, analytical, appreciative and communication skill.

Marketing Area

Paper-I: Principles of Marketing

Upon successful completion of this course a student will be able to:

1. Use an understanding of marketing and the market driven enterprise to differentiate market, enterprise.

2. Market economy as a foundation for future course work and employer selection.

3. Identify some of the basic approaches to formulating a market strategy in order to participate effectively when working with marketing policy coordinators.

4. Identify key stages of the market planning process in order to create marketing plan through development of key sections common to most plan.

5. Use knowledge of element of the marketing mix and the functional disciplines of marketing such as research and marketing communication in order to guide future course selections.

6. Use understanding of both the product marketing life cycle including professional role and responsibilities within the life cycle to guide marketing career and identify key stake holders in the business work place.

Group-II

International Marketing

Upon successful completion of this course a student will be able to:

1. Beware of the differences between domestic marketing and international marketing.

2. Understand how culture affects marketing abroad.

3. Understand the concept of global market.

4. Understand how business customs and motivations may very from country to country.

5. Develop presentation and writing skills.

6. Work as a team.

Objectives:

This course is meant to acquaint the students with the basics of central excise duty.

Outcomes:

Upon successful completion of this course a student will be able to:

1. Learning the computation of central excise duty.

2. Learning the procedure of filing return.

Program Outcomes (POs)

Name of Program: P.G.D.C.A.

After completing Post graduate diploma in computer application, a student will be able to develop:

1. Students are able to use their knowledge to develop different web and windows based applications.

2. They can start their own business in web development and software development.

3. Students can create database, websites and applications for their clients.

4. Students can also pursue the career of computer operators.

5. Students will able to learn the latest trends in various subjects of computers & information technology.

6. Design and develop applications to analyze and solve all computer science related problems.

7. Understanding application of Different software needed for rural areas development.

8. Effective Computer Skills and development personality.

9. An ability to analyze the local and global impact of business solutions on individuals, organizations, and society.

Continue…

Program Specific Outcomes(PSOs)

Name of Program: **P.G.D.C.A.**

1. Understand Basic concept, and Programming language like procedure oriented language, Object oriented programming, event driven programming.

2. Design applications for any desired needs with appropriate considerations for any specific need on societal and industrial aspects.

3. Different Hardware and software specification.

4. Understanding application of different software. Needed for area development like Govt. sector, online treading, and institute.

5. It will equip the students with skills required for designing, developing applications in Information Technology.

Continue…

Course Outcomes (COs)

Name of Program: **PGDCA -I Semester**

Name of Subject: **Paper-I Fundamentals of computers**

After studying this paper, students should be able to:

1. Understand the basic terminology of computers and definition of computer system.
2. Making the students understand and learn the basics of computer how to operate it.
3. Learn about working of various input and output devices.
4. To introduce students with basic concepts of Operating System, its functions and services.
5. Understand various features and application of windows operating system.
6. Acquire knowledge about various Linux commands.

Name of Subject: **Paper-II Office Automation and Tally**

After studying this paper, students should be able to:

1. Understand the practical concepts of MS Word, MS Excel, MS PowerPoint, and MS Access.
2. Use systems development, word-processing, spreadsheet, and presentation software to solve basic information systems problems.
3. Knowledge & Understanding about Databases and their design & development
4. Acquire knowledge about formatting documents and arranging documents.
5. Learn about charts, excel formulas, tables as well as use of it.
6. Prepare presentation and perform computation on excel sheet.
7. Learning Tally help you maintain inventory online. This also helps to bring down loss and wastage and also helps in maintaining accounts and inventory.

Name of Subject: **Paper-III Programming in C**

After studying this paper, students should be able to:

1. Learn how to practically design programs.
2. Understand the fundamentals of C programming.
3. Acquire knowledge and skills of programming.
4. Able to develop logics which will help them to create programs, applications in C.
5. Also by learning the basic programming constructs they can easily switch over to any other language in future.
6. Understand the concept of control structure and loops.

7. Also understand the concept of array, structure, pointer and file handling.

Continue…

Name of Subject: **Paper-IV Practical based on PGDCA-102**

After studying this paper, students should be able to:

1. Create “Table of content” in the top of document with page numbering in roman in footer.
2. Paragraph with Normal styles having “Arial Font”, 11 size and 1.15 line spacing with 0.6cm left indent.
3. Create Business Cards using Shapes, text, and colors.
4. Use smart art and create organization charts.
5. Enter the formula to find TOTAL SALARY for the first employee where: TOTAL SALARY = SALARY + COMMISSION Copy the formula to the remaining employees.
6. Working with Sum IF and Count IF statements.
7. Change the layout of the third slide, the slide that does not have the SmartArt, to Comparison.
8. In Tally you can activate / deactivate voucher types as per your business need from voucher type creation / alteration screen.

Name of Subject: **Paper-V Practical based on PGDCA-103**

After studying this paper, students should be able to:

1. C program, we will take an input from the user and check whether the number is prime or not.
2. Write the sum of digits program in c language by the help of loop and mathematical operation only.
3. C program to check whether the given number is positive or negative.
4. Reverse an input number using recursion.
5. C Program to find factorial of a given number.
6. C Program to check if given number is palindrome or not
7. C Program to find factorial of a given number

Name of Program: **PGDCA -II Semester**

Name of Subject: **Paper-I Programming in VB.Net**

After studying this paper, students should be able to:

1. Understanding the programming language features and architectures
2. Acquire knowledge about .Net frameworks.
3. Understanding the GUI programming with the help of various controls and objects.
4. Learn about exceptions handling, programming errors and debugging.
5. Understanding the database connectivity with ADO.Net.
6. With the help of this programming language we learn UI design or window based applications.

Name of Subject: **Paper-II Database Management Systems**

After studying this paper, students should be able to:

1. Acquire knowledge about database languages (DDL, DML, DCL).
2. Learn how to design a database by using different data models.
3. Able to design a good database using normalization, decomposition and functional dependency.
4. Ability to perform various types of SQL queries.
5. Usage of DBMS design and administration.
6. Familiarization with various features and applications of Database Management system.

Name of Subject: **Paper-III Internet and web technology**

After studying this paper, students should be able to:

1. Understand the functions of different layers of TCP/IP and OSI reference models.
2. Understand the principles of creating an effective web page.
3. Classify of networks-LAN, MAN and WAN.
4. Identify and understand various techniques and modes of transmission media with real time applications.
5. Understand the fundamentals of Internet security.
6. Knowledge and Use of web publishing and phases related with the website development.
7. Make use of knowledge related to links, addresses, images, and tables.
8. Knowledge of various formatting options on HTML page and web site.
9. Knowledge of Server Side programming.
10. Various classes of IP Addressing.

11. Develop skills in analyzing the Social sites.

12. Demonstrate an understanding of the foundations and importance of E-commerce.

Continue …

Name of Subject: **Paper-IV Practical based on PGDCA-106**

After studying this paper, students should be able to:

1. Design the form to Input radius of a circle and find its circumference and area.
2. Design simple calculator.
3. Design the form that calculates Sum, Multiplication, Division and Subtraction of two numbers.
4. Sort array elements in ascending or descending order.
5. Print all unique numbers in the array.
6. Program such that the throw a user define exception when temperature is zero.
7. Design vb.net application that perform insert, delete and update operations on employee table.
8. Program to show data in data grid view.

Name of Subject: **Paper-IV Practical based on PGDCA-107 and PGDCA-108**

After studying this paper, students should be able to:

1. Html program to demonstrate hyperlinking between two web pages.
2. Html program to create a web page with a blue background.
3. Html program to create a form.
4. Find all staff that does not work in same cities as the colleges they work.
5. List name of employees in ascending order who are working in your college or all colleges.
6. List the students who have not paid full fee in your college or all colleges.
7. Delete all the records of student who live in city Raipur.
8. List all roll numbers who have passed in first division.

……End of Page……

Department of Physics
SANT GURUGHASIDAS, Govt. P G College, Kurud
District-Dhamtari (Chhattisgarh)-493663
COURSE OUTCOMES
BSC-I
OBJECTIVES OF THE COURSE

The undergraduate training in Physics is aimed at providing the necessary inputs so as to set forth the task of bringing about new and innovative ideas/concepts so that the formulated model curricula in physics becomes in tune with the changing scenario and incorporate new and rapid advancements and multi-disciplinary skills, societal relevance, global interface, self-sustaining and supportive learning. It is desired that under graduate i.e. B.Sc. level besides grasping the basic concepts of physics should in addition have broader vision. Therefore, they should be exposed to societal interface of physics and role of physics in the development of technologies.

BSC-I
PAPER - I
MECHANICS, OSCILLATIONS AND PROPERTIES OF MATTER
(paper code - 3563)
Course learning outcome:

After successful completion of the course, the student is expected to

CO1: Understand the motion of objects in different frame of references.

CO2. Learned conservation laws of energy and linear and angular momentum and apply them to solve problems.

CO3: Understand laws of motion, reference frames, and its applications i.e. projectile motion, simple harmonic oscillator, Rocket motion, elastic and inelastic collisions.

CO4: Learn basics of the kinematics and dynamics linear and rotational motion..

C05: Understand the phenomena of collisions and idea about center of mass and laboratory frames and their correlation.

CO6: Understand the application of central force to the stability of circular orbits, Kepler's laws of planetary motion.

CO7: Understand the dynamics of rotating objects i.e. rigid bodies, angular velocity, the moment of inertia, parallel axis theorem, the inertia tensor, the motion of rigid bodies. Non-inertial frames: pseudo forces, examples involving the centrifugal force and coriolis force.

CO8: Learn the fundamentals of harmonic oscillator model, including damped and forced oscillators and grasp the significance of terms like quality factor and damping coefficient.

CO9: Learn the basics of properties of matter, how Young's modulus and rigidity modulus are defines and how they are evaluated for different shapes of practical relevance.

CO10: Understand the basics of motion of fluid which includes streamlined and turbulent flows, equation of continuity, critical velocity, flow of a liquid through a capillary tube, capillaries in series and parallel, Stokes' formula.

CO11: Learn the concepts of elastic in constant of solids and viscosity of fluids.

PAPER - II
ELECTRICITY, MAGNETISM AND ELECTROMAGNETIC THEORY
(paper code -3564)
Course learning outcome:

After successful completion of the course, the student is expected to:

CO1: Understand basics of vector calculus and Introduction to mathematical methods physicists often use, including operator ∇, divergence, gradient, curl and their physical interpretation, Green's theorem, Stokes' theorem and appreciate its applications.

CO2: Acquire knowledge of methods to solve partial differential equations with the examples of important partial differential equations in Physics.

C01: This course will help in understanding basic concepts of electricity and magnetism and their applications.

C03: Demonstrate Gauss law, Coulomb's law for the electric field, and apply it to systems of point charges as well as line, surface, and volume distributions of charges.

C04: To realize the importance of application of Biot Savarts Law and Amperes law.

C05: Understand the dielectric properties, magnetic properties of materials and the phenomena of electromagnetic induction.

C06: Understand the Kirchhoff's rules to analyze AC circuits consisting of parallel and/or series combinations of voltage sources and resistors and to describe the graphical relationship of resistance, capacitor and inductor.

C07: Apply various network theorems such as Superposition, Thevenin, Norton, Reciprocity, Maximum Power Transfer, etc. and their applications in electronics, electrical circuit analysis, and electrical machines.

C08: study in depth the transient current response of CR, LC, CR and LCR circuits, which is essential in designing as well as understanding the working of electronic circuits.

C09: student Should be able to solve a variety of problems related to Faraday's law of induction and Maxwell's equations.

C010: student Should be able to verify of various circuit laws, network theorems elaborated above, using simple electric circuits.

LAB Course Outcomes

PHYSICS LAB

LAB COURSE Physics

In the laboratory course, the student shall perform experiments related to mechanics (compound pendulum), rotational dynamics (Flywheel), elastic properties (Young Modulus and Modulus of Rigidity) and fluid dynamics (verification of Stokes law, Searle method) etc.

LAB COURSE Physics

In the laboratory course the student will get an opportunity to verify various laws in Electricity and magnetism such as Lenz's law, Faraday's law and learn about the construction, working of various measuring instruments.

SEMINAR & GROUP DISCUSSION

CO1: Understands advance problem based on topics related to paper-I and paper-II

CO2: The ability to communicate their ideas effectively, both orally and in writing.

CO3: Understands function effectively in multidisciplinary teams and topics.

Programme Specific Outcomes
BSc –Part-II (Physics)
Objectives:

Present course is aimed to provide ample knowledge of basics of physics which are relevant to the understanding of modern trends in higher physics. The first paper is aimed at preparing the background of thermodynamics and statistical physics essential for any advanced study of physics of condensed matter and radiations. The second paper is mainly concerned with a course on geometrical and Physical optics and the laser Physics. It deals with important phenomenon like interference, diffraction and polarisation with stress on the basic nature of light. It also introduces the basics of laser physics with some of its important applications. The experiments are based mostly on the contents of the theory papers so as to provide Comprehensive insight of the subject.

PAPER - I
THERMODYNAMICS, KINETIC THEORY AND STATISTICAL PHYSICS
(Paper Code -3663)
Course learning outcome:

After successful completion of the course, the student is expected to

C01: In this course the students should skilled in doing calculations in thermodynamics, to understand various thermo dynamical concepts, principles and same as in statistical mechanics.

C02: Become familiar with various thermodynamic process and work done in each of this process. Students have a clear understanding about Reversible and irreversible process and also working of a Carnot engine, and knowledge of calculating change in entropy for various process.

C03: Learn the basic concepts of thermodynamics, the first and the second law of thermodynamics, the concept of entropy and the associated theorems, the thermodynamic potentials and their physical interpretations. They are also to learn Maxwell’s thermodynamic relations.

C04: student Realize the importance of Thermo dynamical functions and applications of Maxwell’s relations.

C05: student Learn about the real gas equations, Van der Waal equation of state, the Joule-Thompson effect.
C06: Learn to derive classical radiation laws of black body radiation. Wiens law, Rayleigh Jeans law, ultraviolet catastrophe. Saha Ionization formula.
C07: Learn the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equitation of energies, and mean free path of molecular collisions, viscosity, thermal conductivity, diffusion and Brownian motion.
C08: Understand the concepts of microstate, macrostate, ensemble, phase space, thermodynamic probability and partition function.
C09: Familiarize in depth about statistical distribution and have basic Ideas about Maxwell Boltzmann, Bose-Einstein and Fermi Dirac Statistics and their applications
C09: Understand the combinatoric studies of particles with their distinguishably or indistinguishably nature and conditions which lead to the three different distribution laws e.g. Maxwell-Boltzmann distribution, Bose-Einstein distribution and Fermi-Dirac distribution laws of particles and their derivation.
C010: Learn to calculate the macroscopic properties of degenerate photon gas using BE distribution law, understand Bose-Einstein condensation law and liquid Helium. Bose derivation of Plank's law
C011: Understand the concept of Fermi energy and Fermi level, calculate the macroscopic properties of completely and strongly degenerate Fermi gas, electronic contribution to specific heat of metals.
C012: Understand the application of F-D statistical distribution law to derive thermodynamic functions of a degenerate Fermi gas, electron gas in metals and their properties.

PAPER - II
WAVES, ACOUSTICS AND OPTICS
(Paper Code -3664)
Course learning outcome:

This course will enable the student to

C01: This course in basics of optics will enable the student to understand various optical phenomena, principles, workings and applications optical instruments.

C02: Study the general equation of wave motion in general and TM waves in stretched strings and longitudinal waves in gases25

C03: Apply basic knowledge of principles and theories about the behaviour of light and the physical environment to conduct experiments.

C04: Understand the principle of superposition of waves, so thus describe the formation of standing waves.

C05: Explain several phenomena we can observe in everyday life that can be explained as wave phenomena.

CO6: Able to calculate what happens when waves move from one medium to another, and be able to explain dispersion and group and phase velocity. Use Lissajous figures to understand simple harmonic vibrations of same frequency and different frequencies.

CO7: Understand application of acoustics in noise and music, musical scale, sonar and ultrasonic.

CO8: Use the principles of wave motion and superposition to explain the Physics of polarisation, interference and diffraction.

CO9: Understand the working of selected optical instruments like biprism, interferometer, diffraction grating, and holograms.

CO10: Understand the resolving power of different optical instruments.

CO11: Understand working of optical fiber and their applications in communication

CO12: Qualitative understanding of basic lasing mechanism, types of Lasers, characteristics of Laser Light, types of Lasers, and its applications in developing LED, Holography.

CO13: The idea of propagation of electromagnetic wave in a nonlinear media – Fibre optics as an example will enable the

student to practice thinking in a logical process, which is essential in science.

LAB COURSE Physics

In the laboratory course, student will gain hands-on experience of using various optical instruments and making finer measurements of wavelength of light using Newton Rings experiment, Fresnel Biprism etc. Resolving power of optical equipment can be learnt firsthand. The motion of coupled oscillators, study of Lissajous figures and behaviour of

transverse, longitudinal waves can be learnt in this laboratory course.

LAB COURSE Physics

In the laboratory course, the students are expected to do some basic experiments in thermal Physics, viz., determinations of Stefan's constant, coefficient of thermal conductivity, temperature coefficient of resistant, variation of thermo-emf of a thermocouple with temperature difference at its two junctions and calibration of a thermocouple.

SEMINAR & GROUP DISCUSSION

CO1: Understands advance problem based on topics related to paper-I and paper-II

CO2: The ability to communicate their ideas effectively, both orally and in writing.

CO3: Understands function effectively in multidisciplinary teams and topics.

Programme Specific Outcomes
BSc –Part-III (Physics)
Objectives:

Present course is aimed to provide ample knowledge of basics of Physics which are relevant to the understanding of modern trends in higher physics.

The first paper is aimed at preparing the back ground of modern physics which includes the relativistic and quantum ideas mainly concerned with atomic, molecular and nuclear physics. It constitutes an essential pre-requisite for better understanding of any branch of physics.

The second paper is mainly concerned with Solid State Physics, Solid State Devices and Electronics. This course is quite important from the application aspects of modern electronic devices. It also forms the basis of advance electronics including communication technology to be covered at higher level.

The experiments are based mostly on the contents of the theory papers so as to provide comprehensive insight of the subject.

PAPER - I
(Paper Code-3763)
RELATIVITY, QUANTUM MECHANICS, ATOMIC MOLECULAR AND NUCLEAR PHYSICS

Course learning outcome

This course will enable the student to get familiar with quantum mechanics formulation.
C01: Recapitulate and learn the special theory of relativity-postulates of the special theory of relativity, Lorentz transformations on space-time, space-time invariant length, length contraction, time dilation, mass-energy relation, Doppler effect, problems involving energy momentum conservations.
C02: know main aspects of the inadequacies of classical mechanics and understand historical development of quantum mechanics and ability to discuss and interpret experiments that reveal the dual nature of matter.
C03: Understand the theory of quantum measurements, wave packets, wave properties of particles, De Broglie waves and uncertainty principle. Students also understand the idea of Wave Mechanics and gain the concept of eigen values, eigen functions and learn the basic postulates of quantum mechanics
C04: Understand the central concepts of quantum mechanics: wave functions, momentum and energy operator, the Schrodinger equation, time dependent and time independent cases, probability density and the normalization techniques, skill development on problem solving e.g. one dimensional rigid box, tunneling through potential barrier, step potential, rectangular barrier. This course shall develop an understanding of how to model a given problem such as hydrogen, particle in a box etc. atom etc using wave function, operators and solve them.
C05: Learn the ground state properties of a nucleus – the constituents and their properties, mass number and atomic number, relation between the mass number and the radius and the mass number, average density, range of force, saturation property, stability curve, the concepts of packing fraction and binding energy, binding energy per nucleon vs. mass number graph, explanation of fusion and fission from the nature of the binding energy graph.
C06: Know about the nuclear models and their roles in explaining the ground state properties of the nucleus –(i) the liquid drop model, its justification so far as the nuclear properties are concerned, the semi-empirical mass formula,

(ii) the shell model, evidence of shell structure, magic numbers, predictions of ground state spin and parity, theoretical deduction of the shell structure, consistency of the shell structure with the Pauli exclusion principles.
C07: Learn about the process of radioactivity, the radioactive decay law, the emission of alpha, beta and gamma rays, the properties of the constituents of these rays and the mechanisms of the emissions of these rays, outlines of Gamow's theory of alpha decay and Pauli's theory of beta decay with the neutrino hypothesis, the electron capture, the fine structure of alpha particle spectrum, the Geiger-Nuttall law, the radioactive series.
C08: Learn the basic aspects of nuclear reactions, the Q-value of such reaction and its derivation from conservation laws, The reaction cross-sections, the types of nuclear reactions, direct and compound nuclear reactions, Rutherford scattering by Coulomb potential.
C09: Understand fission and fusion well as nuclear processes to produce nuclear energy in nuclear reactor and stellar energy in stars, and also learn about the detectors of nuclear radiations- the Geiger-Mueller counter, the scintillation counter, the photo-multiplier tube, the solid state and semiconductor detectors.
C010: Study the Bohr Atom model in detail and understand about atomic excitations

PAPER-II
(Paper Code-3764)
SOLID STATE PHYSICS, SOLID STATE DEVICES AND ELECTRONICS

Course learning outcome:

At the end of the course the student is expected to assimilate the following and possesses basic knowledge of the following.

C01: Have a clear picture of crystal structures and a brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, and concept of Brillouin zones and diffraction of X-rays by crystalline materials.

C02: Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.

C03: At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss. Secured an understanding about the dielectric and ferroelectric properties of materials. Learn to carry out experiments based on the theory that they have learned to measure the magnetic susceptibility, dielectric constant, trace hysteresis loop. They will also employ to four probe methods to measure electrical conductivity and the hall set up to determine the hall coefficient of a semiconductor.

C04: Understanding the band theory of solids and must be able to differentiate insulators, conductors and semiconductors.

C05: To characterize various devices namely PN junction diodes, LEDs, Zener diode, solar cells, PNP and NPN transistors. Also construct amplifiers and oscillators using discrete components. Demonstrate inverting and non-inverting amplifiers using op-amps. N- and P- type semiconductors, mobility, drift velocity, fabrication of P-N junctions; forward and reverse biased junctions.

C06: Biasing and equivalent circuits, coupled amplifiers and feedback in amplifiers and oscillators.

C07: About analog systems and digital systems and their differences, fundamental logic gates, combinational as well as sequential and number systems.

C08: Synthesis of Boolean functions, simplification and construction of digital circuits by employing Boolean algebra.

LAB COURSE Physics

At the successful completion of the laboratory course the student is expected to acquire hands on skills/ knowledge on the following:-

i. Measurement of voltage and frequency of a periodic waveform using CRO, construct all logic gates using NAND as a building block, synthesize digital circuits and simplify them using Boolean algebra, construct adders/subtractors and binary adders and Adder-Subtractors, necessary skills/ hands on experience /working knowledge on multimeters, voltmeters,ammeters, electric circuit elements, dc power sources, ac/dc generators, inductors, capacitors, transformers, single phase and three phase motors, interfacing dc/ac motors to control and measure, relays and basics of electrical wiring.

LAB COURSE Physics

In the laboratory course, the students will get opportunity to perform the following experiments

1. Measurement of Planck's constant by more than one method.
2. Verification of the photoelectric effect and determination of the work Function of a metal.
3. Determination of the charge of electron and e/m of electron.
4. Determination of the ionization potential of atoms.
5. Determine the wavelength of the emission lines in the spectrum of Hydrogen atom.

PROGRAM OUTCOME

DEPARTMENT OF ARTS

PROGRAM SPECIFIC OUTCOME: B.A.

After completing bachelor program in Arts, a student will be able to develop:

1. Critical Thinking: Ability to identify, construct and evaluate arguments, ability to engage in reflective and independent thinking, integrates diverse sources of knowledge in solving problems.
2. Communication Skills: Develop oral and written skill for effective Communication, active participation in group activities will improve active learning skills and expressive skills and self confidence.
3. Social Adoptability Skills: Ability to communicate and share our thoughts & feeling with others, develop social interactions and become socially responsible individual (human being).
4. Ideal Citizen: Respect the value, principle ethics and contribute to society and community engage in civic responsibility and participate in civic life through volunteering.
5. Ethical Value: Inculcate ethical, moral and human values.
6. Environmental Awareness: Border understands of the local, national and global environment issues.
7. Employability: Preparing students for job prospect in organized sector.

PROGRAM OUTCOME

DEPARTMENT OF COMMERCE

PROGRAM SPECIFIC OUTCOME: B.Com.

After completing bachelor program in Commerce, a student will be able to develop:

1. Critical Thinking: Develop the ability to completely evaluate new ideas, research findings in evaluation to business and commerce related issues.
2. Communication Skills: Ability to communicate ideas effectively in both written and oral formats develops communicate business analysis to the static holder and clean effective and appreciate manner.
3. Team Spirit: Work collaboratively and productively in group.
4. Social Responsibility: Recognize and understand the ethical and moral responsibility of the individuals and organization in society.
5. Global Citizen: Evolve into a global citizen who understands the duties for the welfare of our society and country.
6. Managerial Skills: Ability to complete knowledge into performance makes business decision through capability to interact and motivate and understand concept, develop ideas and implement strategies.
7. Employability: Prepare students for employment in various fields like charted accountancy, company secretary, banking sector, business management etc.

PROGRAM OUTCOME

DEPARTMENT OF SCIENCE

PROGRAM SPECIFIC OUTCOME: B.Sc.

After completing bachelor program in Science, a student will be able to develop:

1. Critical Thinking: The ability to gather and assess relevant information using abstract ideas to interpret it effectively.
2. Scientific Skills: Ability to understand scientific principles or concept and demonstrate scientific knowledge and skills in scientific reasoning.
3. Communication Skills: Develop oral and written skills to develop the communication, Ability to work productively on team projects with team spirit.

4. Social Adoptability: Inculcate values which provide guidelines for social conduct and social interaction, communication skills are the key to build a strong social support network.
5. Effective Citizenship: Develop into an ideal citizen who performs the duties towards himself, family, society, community and towards the country.
6. Environmental Awareness: Borders understanding of current national and global environmental problem.
7. Ethics: Moral and ethical value are at the development of scientific temper of mind, capacity to think and judge about oneself.

PROGRAM SPECIFIC OUTCOME OF GEOGRAPHY

- To learn the location of places and the physical and cultural characteristics of those places in order to function more effectively in our increasingly interdependent world.
- To understand the geography of past times and how geography has played important roles in the evolution of people, their ideas, places and environments.
- To develop map of territory, country and the world to understand the —where of places and events.
- To recognize spatial distributions at all scales — local and worldwide — in order to understand the complex connectivity of people and places.
- To appreciate Earth as the homeland of humankind and provide insight for wise management decisions about how the planet’s resources should be used.
- To understand global interdependence and to become a better global citizen.

COURSE OUTCOMES:

B.A. - I Subject: Geography

Paper - I: Elements of Geomorphology understand the structure of different part of earth and applied Geomorphology.

Paper -II: Introduction to Geography and Human Geography Understand different part of geographical knowledge and evolution of Geographical thoughts.

Paper -III: Practical Geography Map making and scale of the maps and diagrams.

B.A. - II Subject: Geography

Paper -I: Physical Geography -II (Climatology and Oceanography) Demonstrate knowledge of physical condition of atmosphere and oceans and general problems of climatic conditions.

Paper -II: Regional Geography with Special Reference to North America Understand regional Geography of North America their physical and culture condition.

Paper -III: Practical Geography Making projections and statistical methods.

B.A. - III Subject: Geography

Paper -I: Resources and Environment Understand importance of resources and environment and related problems.

Paper -II: Geography of India (with Special Reference to Chhattisgarh) Knowledge of physical and cultural characteristics of India and Chhattisgarh state.

Paper -III: Practical Geography Understand Topographical Sheets and socio-economic survey of village.

PROGRAM SPECIFIC OUTCOME OF POLITICAL SCIENCE

1. Understand the basic concept of politics.
2. Inculcate the basic principles of Indian constitution.
3. Understand the application of human rights in practice.
4. Primary knowledge of public administration.
5. Analyze the political behavior of voters.

Course Outcomes:

B.A.-I Subject: Political Science

Paper-I:

1. Know about state, its essential elements and different theories of the origin of state and basic knowledge about political science.

2. Know about citizenship equality liberty and many other important things.

Paper-II:

1. Know about constitution its main characteristics and fundamental rights and duties.

2. Know about state government, Election Commission and electoral reform.

B.A.-II Subject: Political Science

Paper-I:

1. Know about main western political thinker just like Plato, Aristotle, Hobbes, Locke, Rousseau and their thoughts about political institutions.

2. Know the different principles given by various thinkers.

Paper-II:

1. Know the main political system which is adopted by different countries.

2. Know about the main characteristics of political system of different countries like Britain, China, America and Switzerland.

B.A.-III Subject: Political Science

Paper-I:

1. Know about the significance of international politics and its impact on different countries.

2. Know about the Disarmament, Globalization and Diplomacy etc.

Paper-II:

1. Knowledge of Public Administration its importance and scope.

2. Knowledge about government's part like legislature, executive and judiciary and its control on administration.

PROGRAM SPECIFIC OUTCOME OF SOCIOLOGY

Understand the nature and structure of human society

To Analysis human Society and its likeness and difference

Determine Social variables like status, Role & Cast Difference.

Understand the Structural and Functional changes of India.

Course Outcomes:

B.A. I Subject Sociology

Paper I: To gain general knowledge of sociology, Family and kinship, Social mobility and stratification. Concept of development, progress and social change.

Paper II: To gain knowledge emergence of sociology, know about main Indian and western social thinker's concept

B.A. II Subject Sociology

Paper I: To understand Indian society, Family and social problems.

Paper II: To understand various concept of crime, Indian social problems like drug, beggary, alcoholism etc.

B.A. III Subject Sociology

Paper I: Concept of tribe, problem of tribes, social change and mobility in tribe.

Paper II: To gain knowledge of research methodologies in sociology, techniques of data collection, social statistics.

DEPARTMENT OF COMMERCE

PROGRAM OUTCOME:

After completing bachelor program in Commerce, a student will be able to develop:

1. Critical Thinking: Develop the ability to completely evaluate new ideas, research findings in evaluation to business and commerce related issues.
2. Communication Skills: Ability to communicate ideas effectively in both written and oral formats develops communicate business analysis to the static holder and clean effective and appreciate manner.
3. Team Spirit: Work collaboratively and productively in group.
4. Social Responsibility: Recognize and understand the ethical and moral responsibility of the individuals and organization in society.
5. Global Citizen: Evolve into a global citizen who understands the duties for the welfare of our society and country.
6. Managerial Skills: Ability to complete knowledge into performance makes business decision through capability to interact and motivate and understand concept, develop ideas and implement strategies.
7. Employability: Prepare students for employment in various fields like charted accountancy, company secretary, banking sector, business management etc.

PROGRAM SPECIFIC OUTCOME: COMMERCE

1. Knowledge of taxation and interest system.

2. Management and leadership quality.
3. Beneficial for employment such as banking, insurance, marketing, tax consultation, CA, CS, ICWA etc.
4. Beneficial for opting different choices of business and trads.
5. Knowledge of marketing such share, bonds, mutual funds, international marketing etc.
6. Determine cost price and selling price.
7. Helpful in statistical analysis such as data collection, investigation, tabulation, sampling and classification.

COURSE OUTCOMES:

B.Com. Group I

PaperI: Financial accounting: to impart basic accounting knowledge as applicable to business.

Paper II: Business mathematics: To enable students to have minimum knowledge of mathematics as is applicable to business and economic situations.

Group II

Paper I: business communication: to develop effective business communication skills.

Paper II: business regulatory frame work: to provide a brief idea about the framework of indian business laws.

Group III

Paper I: Business environment: To acquaint the student with the emerging issues in business at the national and

international level in the light of the policies of liberalization and globalisation

PaperII: Business economics: To acquaint the students with the principles of business economics as are applicable in business.

B.Com. II

Group I

Paper I: Corporate accounting: This course enables the students to develop awareness about corporate accounting in conformity with the provision of companies act.

Paper II: Cost accounting: this course exposes the student to the basic concept and the tools used in cost accounting.

Group II:

Paper I: Principles of business management: this course familiarises the students with the basic of principles of management.

Paper II: Company law this objectives of ths course is to provide a basic knowledge of the provisions companies act 1956, along with relevant case law.

Group III

Paper I: business statistics: it enable the students to gain understanding of statistical techniques as are applicable to business.

Paper II: Fundamental of enterpreunship: It provides exposure to the students to the enterpreurial culture

and industrial growth so as to preparing them to set up and manage their own small units.

B.ComIII :

Group I:

Paper I: Income tax: To enable the student to now the basic of income tax act and its implications.

Paper II: Indirect Taxes: This course aims at imparting basic knowledge about major indirect taxes.

Group II

Paper I: Management accounting: This course will provide the students an understanding of the application of accounting techniques for management.

Paper II: Auditing: This course aims at imparting knowledge about the principles and methods of auditing and therir application.

Optional Group D: Money Banking and Insurance Area

Paper I: Fundamental of Insurance: this course enables the students to know the fundamentals of insurance.

Paper II: Money and Banking System: this course enables the students to know the working of the Indian money and banking system.

DEPARTMENT OF SCIENCE

PROGRAM SPECIFIC OUTCOME: B.Sc.

After completing bachelor program in Science, a student will be able to develop:

1. Critical Thinking: The ability to gather and assess relevant information using abstract ideas to interpret it effectively.
2. Scientific Skills: Ability to understand scientific principles or concept and demonstrate scientific knowledge and skills in scientific reasoning.
3. Communication Skills: Develop oral and written skills to develop the communication, Ability to work productively on team projects with team spirit.
4. Social Adoptability: Inculcate values which provide guidelines for social conduct and social interaction, communication skills are the key to build a strong social support network.
5. Effective Citizenship: Develop into an ideal citizen who performs the duties towards himself, family, society, community and towards the country.
6. Environmental Awareness: Borders understanding of current national and global environmental problem.
7. Ethics: Moral and ethical value are at the development of scientific temper of mind, capacity to think and judge about oneself.

PROGRAM SPECFIC OUTCOME OF BOTANY

- Through seminar presentation students are made stage fear free and they become well worse in the topics assigned to them.
- Through phyto adoption program students are made aware of nurturing the plants.
- Through phyto art exhibition students improved their skill with respect to preparation of articles from plants and know about sustainable use of plants
- The medicinal plantation developed by Botany Department has imparted knowledge regarding traditional and medicinal use of plants.
- Through field visits students are made aware of local flora.
- The students are made aware about the nature and learn vegetations and flora of different area

COURSE OUTCOMES:

B.Sc.-I Subject: Botany

Paper-I General Diversity of Microbes and Cryptogames

1. The student will acquire the knowledge of general diversity of microbes, algae, fungi, Bryophyte and Pteridophyta.

Paper-II Cell Biology and Genetres.

1. Knowledge of cell, cell organelle, genitive material, gene expression and genitive variation.

B.Sc.-II Subject: Botany

Paper-I Diversity of seed plants and their systematics.

1. Diversity of gymnosperms and angiosperms.

2. Knowledge of Geological time scale and Fossils.

Paper-II Structure, development and reproduction in flowering plants.

1. The vegetative and reproductive structure and development of angiosperms.

B.Sc.-III

Paper-I Plant Physiology, Biochemistry and Biotechnology.

1. To know the importance of plant water relation, nutrients, Photosynthesis, Respiration and other life supportive processes in plants.

Paper-II Ecology and utilization of plants.

1. Knowledge about plants and environment and how plants are important and influence of our life.

PROGRAM SPECIFIC OUTCOMES OF B. Sc. MICROBIOLOGY

- On successful completion of this subject the students will gain basic knowledge about Microbiology starting from history, Basic laboratory techniques and basic knowledge about the micro organisms.
- Students will be able to acquire, articulate, retain and apply specialized language and knowledge relevant to microbiology
- Students will acquire and demonstrate competency in laboratory safety and in routine and specialized microbiological laboratory skills

- applicable to microbiological research or clinical methods, including accurately reporting observations and analysis
- Students will communicate scientific concepts, experimental results and analytical arguments clearly and concisely, both verbally and in writing.

COURSE OUTCOME

B.SC. I

SUBJECT: MICROBIOLOGY

Paper I: On successful completion of this subject the students will gain basic knowledge about Microbiology starting from history, Basic laboratory techniques and basic knowledge about the micro organisms.

Paper II: The student will gain knowledge of various bio molecules and their functions.

Paper III: Practical training of basic laboratory techniques knowledge about the micro organisms.

SUBJECT: MICROBIOLOGY

B.SC. II

Paper I : To understand microbial physiology and metabolism and genetic recombination in prokaryotes**.**

Paper II: To understand biochemical techniques and instruments involved in advance research for betterment of society.

Paper III: Practical training to enable the student to get sufficient knowledge in principles and applications of bio instruments and microbial physiology experiment.

SUBJECT: MICROBIOLOGY

B.SC. III

Paper I: To get a brief understanding of molecular biology and recombinant DNA technques.

Paper II: To understand the role of microbes in environment for sustainable development.

Paper III: Practical training to enable student to get sufficent knowledge of recombinant DNA Techniques, and microbial quality control of various environment.

PROGRAM SPECIFIC OUTCOME OF B.Sc. CHEMISTRY :

- Understand the basic principles and concepts underlying the inorganic, organic and physical chemistry and Spectroscopy and Chromatography.
- Comprehend the application of chemistry in various walks of life.
- Perform procedures as per laboratory standards in the areas of analytical chemistry, coordination chemistry, inorganic chemistry, organic chemistry and physical chemistry.
- Able to use instrumental methods of chemical analyses.

COURSE OUTCOMES

B.Sc.-Part- I Subject: Chemistry

Paper-I: Inorganic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe atomic structure on the basis idea of de-Broglie matter-waves, Heisenberg uncertainty principle Schrodinger wave equation and atomic orbital.

2. Describe the shapes of S, p, d orbital's auf-bare and Pauli excessive principle hunt's rule **3.** Write down the electronic configuration of elements and calculate EAN.

4. Describe the periodic (IE, EA, EN) trends in periodic table and their application.

5. Describe covalent bond on the basis of valence bond theory, directional characteristics of covalent bond hybridization with example of simple inorganic molecule.

6. Define bond parameters such as bond strength and bond energy and explain percentage ionic character. Ionic solids with reference to ionic structure, radius ratio, lattice defect, and semiconductor.

7. Describe lattice energy, salvation energy, polar sing power, Fagan's rule and metallic bonds.

8. Comparative study of s-block elements and salient feature of hydrides, salvation & compellation tendencies, function in bio systems and alkyl & aryls, chemistry of noble gases.

9. Comparative study of p-block elements, halides, hydrides, oxides and oxy acids of B, AI, N & P and their compounds.

10. Describe the principle involved in the detection of acids and basic radicals including interfering radicals.

Paper-II: Organic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe resonance, hyper conjugation, inductive effects, and H- bonding.

2. Describe mechanism of organic reaction including clearage of bond types of reagent and reaction intermediates.

3. Describe optical and geometrical isomerism including resolution, inversion, retention, recriminations, relative & absolute configuration and nomenclature.

4. Describe the cycloalkanes, Bayer's strain theory, and theory of stainless ring and banana bonds and reaction mechanism benzene & naphthalene their structure.

5. Study of chemical reactions of Alcohols, Alkanes, dienes and alkynes including elucidation, Diels-alder reaction.

6. Study of alkyls halides and aryl halides, mechanism and stereochemistry of nuclei Phillies substitution and elimination reaction.

Paper-III: Physical Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe the mathematical chemists including logarithmic relation, cure sketching, linear graph, straight line with slope and intercept.

2. Determine and workout integration and differentiation, permutation combination and probability.

4. Describe molecular velocities - RMS, average and most probable velocities, Maxwell's law and other relevant details including J-T effect and lignifications of gases.

5. Describe ideal, real gases and derivation including Vander - Waal's equation.

6. Describe the liquid state, viscosity and surface tension, ideal and no ideal solutions.

7. Describe the colloid properties relate to vapor pressure osmosis, boiling and freezing points, molar masses and vent Hoff factor, Liquid crystals, emulsion, micelle, gel.

8. Describe the solid state - classification, symmetry, X-ray diffraction, miller indices and identification of unit cell.

9. Describe the chemical kinetics- rate of reaction, order of reaction and their determination.

10. Describe the catalysis - homogeneous and heterogeneous, industrial applications of catalysis.

Lab Course:

The aim of the this is to deliver practical knowledge and the implementation of the concepts studied.

B.Sc.-Part- II Subject: Chemistry
Paper-I: Inorganic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe the characteristic properties of d-block elements and elements of first transition series, their binary compounds and complexes.

2. Describe the chemistry of elements of second and third transition series.

3. Describe oxidation and reduction, use of red-ox potential data and red-ox diagrams.

4. Describe coordination chemistry, Werner theory, EAN, chalets, nomenclature, isomerism, VBT.

5. Describe the chemistry of lanthanides and actinides.

6. Describe acids and bases by Arrhenius, bronzed- lowery, Lax-flood, solvent system and Lewis concepts.

7. Describe the properties and reactions of non- aqueous solvents w.r.t liquid ammonia and liquid Sulpher dioxide.

Paper-II: Organic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe the nomenclature, formation & chemical reactions of dihydric and trihydric alcohols and phenols.

2. Describe mechanism of rearrangements reactions, nudeophilic additions to carbonyl group.

3. Describe oxidation and reduction of aldehydes and ketoses.

4. Describe methods of formation & chemical reactions of carboxylic acid and substituted carboxylic acids.

5. Describe reactivity, structure and nomenclature, basicity, structure of amines.

6. Describe Gabriel phthalamide, Hofmann bromamide azo coupling reactions.

7. Describe orbital picture and aromatic character of pgrrole, furan, thiophene and pyridine.

8. Describe preparation and reaction of in dole, quinoline and iso quinoline and reaction of in dole, quinoline and iso quinoline and electro phallic substitution reactions.

Paper-III: Physical Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe fundamentals of thermodynamics system, internal energy, enthalpy, heat capacity of gases at constant volume and constant pressure.

2. Calculate w, q, du & dh for the liquefaction of expansion of ideal gases under isothermal and adiabatic conditions, entropy and entropy change.

3. Apply phase rule to one, two and three component systems.

4. Describe Nerst distribution law, Henry's law and their application.

5. Describe specific and equivalent conductance & effect of dilution on conductance.

6. Describe applications of Kohlnausch's law and theories of strong electrolytes, transport no. and its determination by different methods.

7. Describe electrochemical cell and its conventional representation pH and pKa.

8. Describe corrosion, types, theories and its prevention. 66

Paper: Lab Course The aim of the this is to deliver practical knowledge and the implementation of the concepts studied.

Subject: Chemistry

B.Sc.-Part- III

Paper-I: Inorganic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe metal- lagans bounding in transition metal complexes crystal field theory.

2. Describe the thermodynamics and kinetic aspect of metal complexes, factor affecting the stability of complexes, substitution reaction in square planer complexes.

3. Describe the magnetic properties of the complexes, determination of magnetic susceptibility, L-S coupling, magnetic moments and application of magnetic moment data.

4. Describe the electronic spectra of transitional metal complexes including types of electronic transition, spectroscopic ground state, orgel diagrams, spectra of hexa qua titanium complexion.

5. Describe organo metallic chemistry including definition, nomenclature and classification. Alkyls and aryls of Li, Al, Hg, Sn and Ti.

6. A brief account of metal- ethylene complexes, homogenous hydrogenation and mononuclear carbonyl and their nature of bonding.

7. Describe the bio-inorganic chemistry including essential and trace elements in biological system, the hemoglobin and myogblin, biological role of alkali and alkaline earth metals with special reference to Ca2+ and the nitrogen fixation.

8. Classification of acids and bases as hard and soft.

9. Describe HSAB concept, symbiosis and theoretical basis.

10. Describe inorganic polymers - silicon phosphorus.

Paper-II: Organic Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe the formation, structure and chemical reactions of Grignard reagent, organ zinc and organ lithium.

2. Describe the nomenclature, structure formation and reactions of trios, trio ether, euphonic acids, sylph on amides and sylph on guanidine.

3. Describe the organic synthesis via insolates including acidity of alpha hydrogen's, diethyl Malone's and ethyl ace to ace tale and their synthesis.

4. Describe the chaise condensation, Kato - Enola, taut amorism, alkylation of 1, 3-dithianes and a Kyla ion - acryl ion of enemies.

5. Classification, nomenclature of carbohydrates, mechanism of ova zone formation.

6. Describe the inter conversion of glucose & fracture, glucose to mannose, formation of gluers ides.

7. Describe mechanism of mote rotation, structure of ribose & doxy RI base disaccharides and poly saccharine.

8. Describe the chemistry of fats, oils and detergents including sanctification value, iodine value, acid value, soap and detergents.

9. Describe synthetic polymers polymerization such as free radical vinyl, ionic vinyl, Z-N, vinyl polymerization condensation or step polymerization.

10. Describe the polyester, polyamides, phenol formaldehyde resin urea formaldehyde resin, epoxy resin and rubbers.

11. Describe synthetic dyes, their classification and chemistry.

12. chemistry and synthesis of methyl orange , Congo red, malachite green , crystal violet , phenolphthalein , fluoresce in, alizarins and indigo.

13. Describe the absorption spectra including UV absorption spectroscopy, beer's lamberts law and type of electronic transition, concept of chromospheres and Auto chrome, different shift.

14. Describe infra-red spectroscopy including type of vibration, hook's law, selection rule, intensity of IR bands, finger print region and characteristic absorption of functional gap.

15. Describe the NMR spectroscopy including all parameters such as nuclear shielding, de-shielding, chemical shift, spin-spin splitting coupling.

16. Interpret the PMR spectra of simple organic molecule.

Paper-III: Physical Chemistry

Upon successful completion of this subject the student will be able to:

1. Describe elementary quantum mechanism through black-body radiation, plank's law**,** photoelectric effect and heat capacity and Bohr model of H-Atom.

2. Describe de-Broglie, hypothesis, uncertainty principle, ware function, Schrodinger wave equation complete.

3. Describe elementary quantum mechanism with reference to molecular orbital theory.

4. Describe the spectroscopy and define its basic and spectrophotometer.

5. Describe the rotational spectrum and Vibration spectrum.

6. Describe the electronic spectrum along with concept of PE curves, frank-Condon principle.

7. Describe the photochemistry, law of photochemistry, Je Bloke diagram.

8. Describe the fluorescence, phosphorescence and quantum yield.

9. Describe the physical properties and molecular structure including optical activity, polarization, dipole moment and magnetic properties.

10. Describe the solutions; dilute solution and Collegative properties in details.

Paper- Lab Course The aim of the this is to deliver practical knowledge and the
implementation of the concepts studied.

Program Name: B.A./ B.Com. /B.Sc. (Foundation Course I)

DEPARTMENT OF HINDI

PROGRAM SPECIFIC OUTCOME OF HINDI

1. To be able to speak in Hindi and develop confidence in the Skills, Listening, Speaking readings writing Communicating.

2. Vocabulary Buildup and required to structure out their thoughts in hindi language.

3. Practically learn the Language Techniques.

4. to Identification of Problem Solving Self Expression, Presentation in hindi language.

5. Preparation for higher Education.

6. To encourage the students with T.V. Medias or Mass Medias.

COURSE OUTCOME

B.A./ B.Com. /B.Sc. part I: To impart knowledge of grammer and vocublary in hindi language.

B.A./ B.Com. /B.Sc. Part II: To be able to speak in Hindi and develop confidence in the Skills, like readings writing and correspondence

B.A. / B.Com. /B.Sc. Part III: To enhance writing skills like report for Media, Press

Program Name: B.A. / B.Com. /B.Sc. (Foundation Course II)

DEPARTMENT OF ENGLISH

PROGRAM SPECIFIC OUTCOME OF ENGLISH

1. Students will be acquainted with various literary forms is English.
2. Students will have understanding of various figures of speech.
3. Students will be acquainted with the history of English literature and English language.
4. Students will get an understanding of American English literature.
5. Students will have an understanding of linguistics, its aspects, levels and charteristics.

B.A. / B.Sc. /B.Com. - Part-I Subject: English Language:

On studying this paper, the student will be able to:

1. Development of comprehensive ability.

2. Improvement of vocabulary.

3. Effective communication skills.

4. Inculcation of moral and human values.

5. Acquire knowledge of Indian culture and tradition.

6. Write effectively and coherently.

B.A. / B.Sc. /B.Com. - Part-II Subject: English Language:

On studying this paper, the student will be able to:

1. Ability to discuss and respond to the content of the passage.

2. Knowledge of development of science and information technology.

3. Develop the writing skills through exercises in grammar and composition.

B.A. / B.Sc. /B.Com. - Part III Subject: English Language:

On studying this paper, the student will be able to:

1. Familiarity with values of Indian life and social system.

2. Development of India in the Modern context.

3. Development of linguistic competence and communication skills.

4. Writing skills through essay writing and comprehension

DEPARTMENT OF MATHEMATICS

Programme Outcome of B.Sc. /M.Sc. (Mathematics)

- Enabling students to develop a positive attitude towards mathematics as an interesting
  and valuable subject of study. Ability to analyze a problem, identify and define the computing requirements, which may.
- be appropriate to its solution. Understanding Concepts.
- Development of Writing, Listening and Teaching Skills.
- Group Discussion (Skill of Team work, interpersonal skills)
- Promotion of thinking.
- Introduction to various courses like group theory, ring theory, field theory, metric spaces.
- number theory, programming in C, Analysis etc. in UG level as well as the advanced area of mathematics like Operation research, Partial Differential Equations, Discrete Mathematics in PG level. Enhancing student's overall development and to equip them with mathematical modeling.
- abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment. Ability to pursue advanced studies and research in pure and applied mathematical science.

Programme Specific Outcome of B.Sc. / M.Sc. Mathematics

- To enable the students to cultivate a mathematical way of thinking i.e. making conjectures, verifying them with further observations, generalizing them, trying to find proofs and making observations.
- To enable the students to learn the basic structures of mathematics through unifying concepts and to motivate these structures through applications.
- To enable the students to study mathematics for themselves.
- Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- Formulate and develop mathematical arguments in a logical manner.
- Acquire good knowledge and understanding in advanced areas of mathematics chosen by the student from the given courses.
- Understand the importance of Mathematics and its techniques to solve real life problems.

COURSE OUTCOME

Algebra & Trigonometry

On completion of this course students will be expected to

- Evaluate Inverse of matrix using elementary operation and application of Matrices to solve systems of linear equations .
- Understand Theory of Equations.
- Prove results involving divisibility and greatest common divisors.
- Polynomial addition, subtraction, division, multiplication, roots of polynomials.
- Understand group theory, ring theory, field, Integral Domain.
- Evaluate trigonometric and inverse trigonometric functions
- Solve trigonometric equations and applications.
- Apply and prove trigonometric identities.

Calculus/Advanced Calculus

Upon successful completion of Calculus/Advanced Calculus the student will be able to

- Verify the value of the limit of a function at a point using the definition of the limit
- Introduction to sequence and series.
- Learn to check function is continuous understand the consequences of the intermediate value theorem for continuous functions
- Calculate the partial derivatives of functions of several variables
- Apply the chain rule for functions of several variables
- Solve problems involving tangent planes and normal lines
- Determine the extrema of functions of several variables

- Use the Lagrange multiplier method to find extrema of functions with constraints.
- Evaluation and Properties of Beta and Gamma Function as well as evaluation of double and triple integration.

Vector Analysis and Geometry

By the end of this course, students will be able to:

- Use Greens, divergence, and Stokes theorems by combining vector differential calculus and vector integral calculus.
- Calculate the gradients and directional derivatives of functions of several variables
- Used cut-out shapes as a means to develop the mental transformation of geometric shapes.
- Perform translations and rotations of the coordinate axes to eliminate certain terms from equations.
- To find nature of general conics.
- Find equation of spheres, cylinders and cones.

Numerical Analysis and programming in C

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

- To apply appropriate numerical methods to solve the problem with most accuracy.
- Using appropriate numerical methods determine approximate solution of ODE and system of linear equation.
- Compare different methods in numerical analysis w.r.t accuracy and efficiency of solution.
- Recollect various programming constructs and to develop C programs.
- Understand the fundamentals of C programming and basics of C Language as well as develop programming skills using them.
- Choose the right data representation formats based on the requirements of the problem.
- Implement different Operations on arrays, functions, pointers, structures, unions and files.
- Develop programs using the basic elements like control statements, Arrays and Strings .
- Implement files and command line arguments.

Analysis

On completion of this course students will be expected to

- Explain the completeness of a system of real numbers: a least upper bound, a greatest lower bound.
- Elaborate on the topological concepts of the real numbers: open sets, closed sets,accumulation points, closure, open covers, compact sets.
- Define and utilize the following concepts: sequence, subsequence, monotone sequence Cauchy sequence.
- Prove that a given function is continuous or discontinuous and classify its points of discontinuity.
- Justify the convergence/divergence of a given number series;
- Prove some of the classical theorems of real analysis.
- Deal with various examples of metric spaces;
- Have some familiarity with continuous maps;
- Work with compact sets in Euclidean space;
- Work with completeness;
- Apply the ideas of metric spaces to other areas of mathematics
- Understand the concept of Fourier series and Riemann Integrability.

Real Analysis

Upon successful completion of this course the student will be able to:

- Demonstrate an understanding of limits and how they are used in sequences, series, differentiation and integration.
- construct rigorous mathematical proofs of basic results in real analysis
- Appreciate how abstract ideas and rigorous methods in mathematical analysis can be applied to important practical problems.

Complex Analysis

Upon successful completion of this course the student will be able to:

- Represent complex numbers algebraically and geometrically,
- Define and analyze limits and continuity for complex functions as well as consequences of continuity,
- Apply the concept and consequences of analyticity and the Cauchy-Riemann equations and of results on harmonic and entire functions including the fundamental theorem of algebra,

Discrete Mathematics

On completion of this unit successful students will be able to:

- To understand logical concepts and to show logical equivalences by using truth tables and rules in logics.
- Learn concept related to counting.
- Introduction to advanced counting.
- Understand the basic concepts of graph theory, Trees, circuits, Computability theory and Formulation of Language and grammar.

Differential Equation

On completion of this course students will be expected to

- Explain the concepts of partial differential equations.
- Understand the difference between ordinary & partial differential equations.
- Classify the partial differential equations.
- Solve the partial differential equation using Charpit's method, Jacobi's method etc.
- Able to understand the Laplace transform of elementary functions.
- Able to use the rules of integration & definition of Laplace transform students to prove the properties of Laplace transform.
- Learns the topics inverse Laplace transform, application of Laplace transform helps to solve linear higher order differential equation, system of differential equations.

Program Outcome

fgUnh foHkkx

fgUnh Hkk"kk ,oa lkfgR; ds v/;;u ls Nk++= esa O;kdj.k ,oa lkfgR; dh le> fodflr gks ldsxhA Hkk"kk ij Nk=ksa dk vf/kdkj gksxk rFkk os lkfgR; ys[ku dh vksj izo`r gksxsA muesa ekuoh; laosnuk dk fodkl gks ldsxkA lkekftd leL;kvksa dh le> iSnk gksxh rFkk muds Hkhrj lkekftd leL;kvksa ls tw>us dh {kerk fodflr gksxhA ns'k ds lkfgR;dkjksa dks ikB~;dze ds ek/;e ls os tku ldsxs] mudh leh{kk dj ldsxsA fgUnh ds v?;;u ds QyLo:Ik os fofHkUu dk;kZy;ksa esa vuqoknd] fgUnh vf/kdkjh] Hkk"kk f'k{kd] izk/;kid fofHkUu ljdkjh ,oa v)Z ljdkjh dk;kZy;ksa esa jktHkk"kk vf/kdkjh cu ldsxs rFkk fgUnh dks okLrfod :Ik esa jktHkk"kk ds :Ik esa LFkkfir djus dk iz;kl djsxsA lkFk gh os lHkh ukSdfj;k¡ gkfly dj ldsaxs tks vU; fo"k; ds fo|kFkhZ gkfly djrs gSA blds lkFk& lkFk os vius ns'k dh laLd`fr ijaijk rFkk jhfr&fjoktks ls Hkh ifjfpr gksxsA ijiajk Kku gh ges vkxs dh vksj ys tkus dk ekxZ iz'kLr djrk gSA lkfgR; ds v/;;u ls Kku dk foLrkj gksxk ,oa yksd jatu rFkk yksdeaxy dh dkeuk fodflr gksxhA

Program Specific Outcome

fgUnh Hkk"kk ¼ch-,-] ch- dkWe] ch-,l-lh-½

¼1½ Hkk"kk dkS'ky ,oa Hkkf"kd lajpuk rS;kj djus dh n{krk feysxhA

¼2½ fgUnh ds fofo/k :iksa dk O;kogkfjd Kku izkIr gksaxkA

¼3½ fgUnh dh cksfy;ksa ,oa micksfy;ksa dh le> iSnk djsxhA

¼4½ fgUnh dk 'kCn HkaMkj fodflr gksxk rFkk fgUnh Hkk"kk dk foLrkj {ks= c<sxkA

¼5½ fgUnh Hkk"kk dk 'kq) mPpkj.k ,oa ys[ku gks ldsxkA

¼6½ Hkk"kk ,oa laLd`fr ls tqMko iSnk gksxkA
¼7½ lkekftd ljksdkj c<sxk rFkk yksx fgUnh dk vf/kdkf/kd iz;ksx djsxsA
¼8½ Hkk"kk ds ek/;e ls fofHkUu lkfgfR;d fo|kvksa ls ifjfpr gksxsA
¼9½ ljdkjh dk;kZy;ksa esa fgUnh ds iz;ksx dks c<kok feysxkA
¼10½ fgUnh Hkk"kk ds oSf'od foLrkj dks c<kok feysxkA
¼1½ fgUnh lkfgR; ds bfrgkl dh tkudkjh gksxhA
¼2½ fofo/k x| ,oa i| fo|kvksa ls ifjfpr gksxsA
¼3½ Hkk"kk ds bfrgkl ,oa O;kdj.k ls ifjfpr gks ldsxsA
¼4½ dkedkth fgUnh dh tkudkjh gksxhA
¼5½ lkfgR; dks le>us dh vkykspukRed {kerk fodflr gksxhA
¼6½ lkfgR; ys[ku dh fn'kk dh vksj Nk= vxzlj gksxsA
¼7½ lkfgR; ds ek/;e ls lekt dks le>us esa lgk;rk feysxsA
¼8½ Hkk"kk ds ek/;e ls fofHkUu lkfgfR;d fo|kvksa ls ifjfpr gksxsA
¼9½ ljdkjh dk;kZy;ksa esa fgUnh ds iz;ksx dks c<kok feysxkA
¼10½ fgUnh Hkk"kk ds oSf'od foLrkj dks c<kok feysxkA

fgUnh Hkk’kk

Course Outcome

ch-,-]ch-,l-lh] ch- dkWe izFke o’kZ & vk/kkj ikB~;Øe fgUnh Hkk’kk iz”u i= & **I**

mn~ns';%& ¼1½ Hkk"kk dkS'ky dk fodkl djukA
¼2½ Hkk"kk ,oa okD;ksa dks 'kq) djukA
¼3½ laizs"k.k dyk dk fodkl djukA
¼4½ vuqokn dyk dk egRo ,oa mldk iz;ksx djukA

ch-,-]ch-,l- lh] ch- dkWe f}rh; o’kZ & vk/kkj ikB~;Øe fgUnh Hkk’kk iz”u i= & **I**

mn~ns';%& ¼1½ fuca/k fo/kk ls voxr djkuk ,oa fuca/k dkS'ky fl[kukA

¼2½ dk;kZy;hu fgUnh dk Kku iznku djukA
¼3½ fgUnh O;kdj.k dk lEiw.kZ Kku djkukA
¼4½ fgUnh Hkk"kk ds fofHkUu :iks a ls voxr djkukA

ch-,-]ch-,l-lh] ch- dkWe r`rh; o'kZ & vk/kkj ikB~;Øe fgUnh Hkk'kk iz"u i= & I

mn~ns';%& ¼1½ fofHkUu izdkj ds dk;kZy;hu ,oa lkekftd i=pkjksa ls voxr djkukA
¼2½ fgUnh dh fofo/k lajpukvksa dh tkudkjh nsuk ,oa mldk iz;ksx crkukA
¼3½ ns'k dh Toyar leL;kvksa ls voxr djkukA
¼4½ dfork] fuca/k ,oa ,dkadh fo/kk ls ifjp; djuk rFkk bldk mn~ns'; le>kukA

ch-,- Hkkx & 1 fgUnh lkfgR;
izFke iz"u & i= ¼izkphu fgUnh dkO;½

mn~ns';%& ¼1½ izkphu Hkk"kk] laLd`fr fopkj] ekuork] dkO;RkRo ,oa dkO; :ikas ls ifjp; djkukA
¼2½ vkfn dky] HkfDr dky ,oa jhfr dky dh fo'ks"krkvksa dks Li"V djrs gq;s ml dky ds
dfo;kas dh dkO; dyk dk ifjp; djkukA
¼3½ dkO; & lkSUn;Z ds fodkl dks iznf'kZr djukA
¼4½ ikB~;srj dfo;ksa ls ifjp; djuk rFkk vkfn] HkfDr ,oa jhfr dky esa muds egRo dks izfrikfnr djukA

f}rh; iz"u i= ¼fgUnh dFkk lkfgR;½

mn~ns';%& ¼1½ fgUnh dgkuh ,oa miU;klksa ds mn~Hko ,oa fodkl ls ifjp; djkukA
¼2½ miU;kl & dgkuh fo|k ds ek/;e ls thou dh vuqHkwfr;ksa laosnukvksa
rFkk fofo/k ifjfLFkfr;ksa ls lk{kkRdkj djkukA
¼3½ vk/kqfud thou ds ;FkkFkZ ls ifjp; djkukA
¼4½ ikB~;ksRrj dgkuhdkjksa ,oa miU;kldkjksa dk ifjPk; ,oa mlds egRo dks crkukA

ch-,- Hkkx &2 fgUnh lkfgR;

izFke iz”u & i= ¼vokZphu fgUnh dkO; ½

mn~ns”;%&¼1½ Lokra=;ksRrj dkO; /kkjkvksa ls ifjp; djkukA
¼2½ vk/kqfud ,oa ubZ dfork ds Hkko&lkSnU;Z ds ek/;e ls ;qx&;FkkFkZ dks iznf'kZr djukA
¼3½ dkO; ds Hkko] Hkk"kk ,oa f'kYi dh vUrZoLrq dh le> iSnk djukA
¼4½ ikB~;srj dfo;kas dk dkO;&f'kYi Li"V djrs gq;s mlds egRo dks izfrikfnr djukA

f}rh; iz”u & i= ¼vokZphu fgUnh dkO; ½

mn~ns”; %& 1- ukVd ,oa ,dkadh ds fodkl dks le>kukA
2- izeq[k ukVddkj fuca/kdkj ,oa ,dkadh dkjksa dh izeq[k jpukvksa dk
v/;;u ,oa muds egRo dk izfriknu djukA
3- jaxeap dh le> ,oa vfHku; dkS”ky dk fodkl djukA
4- ikB~;ksRRkj ukVddkjksa]
fuca/kdkjksa ,oa ,dkadhdkjksa ds egRo dks crkrs gq;s lekt ij mlds izHkko dk js[kkadu djukA

ch-,- Hkkx &3 fgUnh lkfgR;

izFke iz”u & i= ¼ tuinh; Hkk’kk lkfgR; % NRrhlx<+h ½

mn~ns”; %& 1- NRrhlx<+h Hkk’kk lkfgR; ,oa bfrgkl dks le>kukA
2- LFkkuh; Hkk’kk ,oa mlds O;kdj.k ls ifjp; djkukA
3- NRrhlx<+ dh cksfy;ksa ij izdk”k MkyukA
4- NRrhlx<+h Hkk’kk ds dfo ,oa x|dkjksa dk ifjp; nsuk rFkk muds dkO; dk thou esa egRo izfriknu djukA

f}rh; iz”u i= ¼fgUnh Hkk’kk lkfgR; dk bfrgkl rFkk dkO;kax foospu ½

mn~ns”; %& 1- fgUnh Hkk’kk ds mnHko ,oa fodkl ls ifjp; djkukA
2- fgUnh Hkk’kk ds fofo/k :iksa ,oa “kCn HkaMkjksa ls ifjp; djkukA

3- fgUnh lkfgR; ds bfrgkl ls ifjp; djkukA
4- fofHkUu dkO;&vaxksa dks tkudkjh iznku djuk rFkk dkO; leh{kk esa muds egRo dks js[kkafdr djukA