Government Naveen College Bhairamgarh
District-Bijapur (C.G.)

Program Outcome (PO) & Course Outcome (CO)

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Government Naveen College Bhairamgarh

District Bijapur, C.G.

Program Outcomes: Science

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 skill 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.

Government Naveen College Bhairamgarh

District Bijapur, C.G.

Program Outcomes: Commerce

AFTER COMPLETING BACHELOR PROGRAM IN COMMERCE, A STUDENT WILL BE ABLE TO DEVELOP:

1. Critical Thinking: Develop the ability to evaluate new ideas, research findings in relation to business and commerce related issues.

2. Communication Skills: Ability to communicate ideas effectively in both written and oral formats to develop effective communication of business analysis to the stake holders.

3. Team Spirit: Work collaboratively and productively in group.

4. Social Responsibility: Recognize and understand the ethical and moral responsibility of the individuals and organizations in society.

6. Managerial Skills: Ability to convert knowledge into performance, making business decision through capability to interact and motivate, develop ideas and implement strategies.

7. Employability: Prepare students for employment in various fields like chartered accountancy, company secretary, banking sector, business management etc.

Government Naveen College Bhairamgarh
District Bijapur, C.G.
Program Outcomes: Arts

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 engaged in civic responsibility and participates in civic life through volunteering.

5. Ethical Value: Inculcate ethical, moral and human values.

6. Environmental Awareness: Broad understanding of the local, national and global environment issues.

7. Employability: Preparing students for job perspective.

Program Specific Outcomes : (B.A . Economics)

- B.A. Economics objective to develop in depth knowledge of students in societies governments business out households and individual allocate their scares resource.
- The program has developed conceptual models of behavior to predict responses to changes in policy and market conditions
- Students are using satirical analysis to investigate policy changes and economic data.
- Apply economic theory to issues in various fields of economics and estimate.
- The course will enable the learner to understand the basic concepts the economics and its application.
- The subject will enhance knowledge pertain to different economic policies, economic variables, statistical and mathematical models for their practical applications.

Course Outcomes B.A Economics

B.A part 1

Micro Economics (I)

- CO1: Understand the fundamental of microeconomics.
- CO2: Get an introduction supply and the basic forces that determined equilibrium in a market economy.
- CO3: Get introduce to the framework for learning about consumer behavior and analyzing consumer decisions.
- CO4: Use the fundamental techniques to think about the number of policy questions related to the operation of the real economic.

Indian Economy –(II)

This course introduces to the students understand the various key issues related to the Indian economy. The course also will be knowledge gain various sectors like as agriculture industry and external student will have capability to government policies and economic decision making

- CO1: Equips the students to analyze the basic features of Indian economy .

- CO2 : To understand the problems related to the Agriculture ,industry and other sectors of Indian Economy.

B.A. Part 2
Macro Economics

This course will be helped of the students are broad conceptual frame works which is National income Consumption function, Nature and characteristics of trade cycle.
The course international trade introduces to the students main theoretical concepts in international trade.
Comparative advanced theory, opportunity cost theory Huckster Ohlin theory understand concept the Tariff, Blanca of trade and balance of Payment. At the end of course the students should be able to understanding of economic concepts of the trade theory

- CO1: To develop the scientific temper.
- CO2: To explain the concepts of microeconomics and its interrelations with Microeconomics.
- CO3: To associate the current economic phenomenon with existing theory and put their views on contemporary economic issue
- CO4: To apply the principal of Microeconomic in explaining the behavior of microeconomic variables at national as well as global label
- CO5: To extend the concepts of macroeconomics in unfolding the dynamic of energy

Money Banking And Public Finance

This course introduce to the students Basic concept of the money, value of money of inflation, deflation
The aims to introduce student to the main concepts in Banking, like as commercial banks and reserve Bank of India. Introduces to Functions of both Banks.
The Basic concepts to introduce to public finance empirical of Government and expenditure.
Analysis to the public budget.

- CO1: To inculcate the understanding of working of real economy in terms of money. banking and budgets and their implications.
- CO2: To enable students to develop analytical framework that facilitates the evaluation of public policy and subsequently inform the public debate.
- CO3: To understand the policy design on economy and their efficiency.
- CO4: To develop administrative skill with the knowledge government taxation and expenditure mechanisms.

B. A. Part 3

Development And Environmental Economics

This course aims to develop to students' Basic concept of development economics discussions of the concept of development, growth, poverty, and various growth models.
This course the aches various expects of environmental issues like as environmental disruption as an allocation, problem of environmental damages land, water forest, air .

Introduce to untenable development and environmental accounting.

- CO1: To have a detailed understanding of the discipline of environmental economics including its key principals and methods.
- CO2: To be able to use economic techniques to analyze environmental problems and to assess environmental policies.

Statistical Method

This course will have help of basic concepts, definition, importance and limitation of statistics. Introduce to measuring of central tendency mean, medium and mode analysis to standard deviation, mean, deviation, range, quartile deviation. Introduce to analysis of correlation, index number and time series.

- CO1: To organize, manage and present data.

- CO2: To analyze statistical data graphically using frequency distributions and cumulative frequency distributions.

- CO3: To analyze statistical data using measures of central tendency, dispersion and location.

DEPARTMENT OF SOCIOLOGY

Programme specific outcomes

BA Sociology seeks to understand all aspects of human social behavior, including

- The behavior of individuals as well as the social dynamics of small groups, large organizations, communities, institutions, and entire societies.
- Sociologists are typically motivated both by the desire to better understand the principles of social life and by the conviction that understanding these principles may aid in the formulation of enlightened and effective social policy.
- Sociology provides an intellectual background for students considering careers in the professions or business. An Honors Graduate student of Sociology should able to develop.
- Students will have the opportunity to join professional careers in Sociology and allied fields.

Course Outcomes: B.A. SOCIOLOGY

B.A. Part I

PAPER 1: Introduction to Soicology

The course is intended to introduce the students to sociological way of thinking. It provides an understanding of the discipline of Sociology and sociological perspective. It also provides foundation for other more detailed and specialized courses in sociology. Students will be able to:

- C.O.1 Define Sociology and demonstrate nature, scope and subject-matter of Sociology.
- C.O.2 Demonstrate how Sociology differ from and similar to other social sciences and their areas of interdependence.
- C.O.3 Acquaint themselves with the basic concepts of Sociology like society, community, association, culture, social change, social stratification etc.
- C.O.4 Know the basic social institutions like family, marriage, kinship in a scientific way.
- C.O.5 Understand and demonstrate how self develops through various process of interaction.
- C.O.6. Realize the importance of cultural lag to understand social change

B.A. Part II

PAPER 1: Sociology of Tribal Society

- C.O.1. Students would be able to understand the issues and problems of tribal communities in India.
- C.O.2. Students will be also benefited to get job opportunities in the field of tribal development and NGO sectors those are working in the areas of tribal societies for the cause of tribal development.
- C.O.3. this course provides knowledge about the socio-economical status of the tribal societies in India.
- C.O.4. this course also provides information about the contemporary issues of the tribal societies.

PAPER 2: Crime and Society

- C.O.1. The second volume of the book 'Crime Aur Samaj' is a simple attempt to explain the evolving perspectives about crime from time to time.

- C.O.2. In this section, along with clarifying the initial explanations of crime up to the present point of view, various forms of crime have been clarified in such a way that the new patterns of crime in India can be easily understood.

- C.O.3. Apart from this, some social problems were also highlighted which encourage delinquent behavior in one way or the other.

- C.O.4. Discussion of modern corrective systems related to crime and the role of police and court in the field of crime has also been clarified in the context of present facts.

B.A. Part III

PAPER 1: Foundations of Sociological Thought

- C.O.1. the subject material etc. has been presented unit time according to the syllabus.

- C.O.2. In the second part of the book, the sociological concepts and theories propounded by the pioneers of sociology and great sociological thinkers August Comte, Emile Durkheim, Herbert Spencer, Karl Marx, Max Weber, Wilfred Pareto and Indian social thinkers like Mahatma Gandhi.

- C.O.3. the unit is clearly explained by presenting the bar.

- C.O.4. According to the new syllabus, complete study material has been included in the book.

PAPER 2: Methods of Social Research

- C.O.1. the course is an introductory course on how research is actually done.

- C.O.2. With emphasis on formulating research design, methods of data collection, and data analysis, it will provide students with some elementary knowledge on how to conduct both, quantitative and qualitative research.

- C.O.3. Field work is an applied part of social research methods.

- C.O.4. this paper aims to acquaint students with empirical field data collection, analysis and writing analytical and standard dissertation or research report in sociology.

- C.O.5 From the course students will able to learn about-
  - Meaning, scope, types and significance of Social Research.

- Importance of research design in Social Research.

B.A.History
Programme specific outcomes

A student, who has taken admission in program of B.A. with History as an Elective subject of study is expected to achieve following outcomes:

1. Understand the basic themes, concepts and the Scope of Indian History.
2. Understand the history of countries other than India with comparative approach.
3. Think and argue historically and critically in writing and discussion.
4. To develop a liking and intention of pursuing the subject for the higher studies.
5. Prepare for various types of Competitive Examinations.
6. Critically recognize the Social, Political, Economic and Cultural aspects of History.

Course Outcome

B.A. Ist Year

History of India (Beginning to 1206 A.D.)

Students understand about beginning to till 1206 A.D. in India.

History of World (1453-1890 A.D.)
Students know about Aadhunik yug of Europe, Revaluation of America and French, Industrial Revaluation, Integration of Germany and Italy.

B.A. IInd Year

History of India (1206-1761 A.D.)

Students know about Sultanate and Mughal period in India.

History of World (1890-1964 A.D.)

Students know about foreign policy of Germany; Balkans countries; cause, event and result ofFirst & Second World War.

B.A. IIIrd Year

History of India (1761-1947 A.D.)

Students understand to British rule in India and their Administration, Indian renaissance,British Rule in Chhattisgarh and Social Reform.

History of Indian National Movement (1857-1947 A.D.)

Students know about Revolt of 1857, Nationalism and Indian National Movement, Establishment of Indian National Congress and Revolution in India.

B.A. GEOGHRAPHY

Programme specific outcomes

Geography mainly concerns changes in spatial attributes in the temporal perspective. The annual program focuses on spatial studies, qualitative as well as quantitative, and emphasis on human - environment relationship. During the first and second year of program, the students are trained on advanced concepts of physical, human geography, climatology and economic and environment geography. During the third year of programme, the students are trained on economic and resources geography and geography of India as well as Chhattisgarh.

COURSE OUTCOMES

B.A.- I GEOGRAPHY

UPON COMPLETION OF THE COURSE STUDENTS WILL BE ABLE TO ACCOMPLISH AND LEARN FOLLOWING THINGS: -

- CO.1 The study material of physical geography seeks to understand origin and development of various land form son earth surfaces helping to imaginatively analyze the process of rock, mountain and other visible structure son earth, thereby conceiving the idea of past helping future process structure.
- CO.2 In Human Geography, not only the geographical facts are observed which make it clear the different physical forms for the students, there will be better understanding of its cities, settlement and habitat. There will also be understanding on the effect of means of transport and economic activities.

B.A.- II GEOGRAPHY

- CO.1 Economic geography is related to ways of earning a living in which relationship between basic resources of surface and human activities are studies. Students can realize, demonstrate and contribute to their distribution and consumption in today's world as per the need arise.
- CO.2 Under geography of India, physical features such as physical appearance, soil in natural resources, water resources, forests, minerals, population and power resources can be studies accordingly.

B.A. – III GEOGRAPHY

- CO.1These techniques are used as a means in solving any problem under Geographic Information System. Due to the quick solutions, the interest of common man and students towards them has increased tremendously & continuously. This is the reason why there is an urgent need for their

dissemination through mapping, integration; pictorial description of events, presentation of important ideas, and solution of new problems can be done.

- CO.2 Under the regional study in Geography of Chhattisgarh, there will be an understanding of geological structure, geomorphic region, drainage system, and agriculture, availability of mineral resources, population, trade, transport and economic development of Chhattisgarh.

Department of Commerce

PROGRAME: B.Com
B.Com – 3 years Undergraduate program

Course 1: Financial Accounting

- CO1.The students after the completion of this course will be able to impart the knowledge of various accounting concepts.
- CO2.The students after the completion of this course will be able to instill the knowledge about accounting procedures, methods and techniques.

Course 2: Business Communication

- CO1.The students after the completion of this course will be able to understand the concept, process and importance of communication.
- CO2. The students after the completion of this course will be able to develop awareness regarding new trends in business communication.
- CO3. The students after the completion of this course will be able to recognize various media of communication.

Course 3: Business Mathematics

- CO1. The students after the completion of this course will be able to prepare for competitive exams. CO2. The students after the completion of this course will be able to improve their calculating power & skills.
- CO3. The students after the completion of this course will be able to understand the concept of simple interest, compound interest, ratio, proportion, average and percentage etc.

Course 4: Business Regulatory Framework

- CO1. The students after the completion of this course will be acquainted with the basic concepts, terms & Provisions of mercantile & Business Laws.
- CO2.The students after the completion of this course will be able to develop the awareness regarding laws affecting business, trade & commerce and consumer awareness.

Course 5: Business Environment

- CO1. The students after the completion of this course will become aware about the Business Environment.
- CO2. The students after the completion of this course will be able to know the issues in the business at national and international level in the light of the LPG.
- CO3. The students after the completion of this course will be able to motivate themselves for taking up entrepreneurship as career.

Course 6: Business Economics

- CO1. The students after the completion of this course will be able to use various economic theories. CO2. The students after the completion of this course will be able to apply economic reasoning to problems of business.
- CO3. The students after the completion of this course will be able to understand the basic micro economic concepts.

Course 7: Corporate Accounting

- CO1.The students after the completion of this course will be enabled to develop awareness about corporate accounting with the provisions of companies Act & Accounting as per Indian Accounting standards.
- CO2. The students after the completion of this course will be enabled to develop conceptual aspect of corporate accounting & develop skills about accounting standards.

Course 8: Company Law

- CO1. The students after the completion of this course will be able to impart the knowledge of fundamental law of company Act 2013.
- CO2. The students after the completion of this course will be able to update the knowledge of provisions of the companies Act of 2013.

Course 9: Cost Accounting

- CO1. The students after the completion of this course will be enabled with the knowledge of Basic cost concepts, Elements of cost, Ascertainment of materials & costing.
- CO2. The students after the completion of this course will be able to understand various methods of costing & their applications in different sectors engaged in production and service.

Course 10: Principles of Business Management

- CO1. The students after the completion of this course will be able to understand about business management concept.
- CO2. The students after the completion of this course will be able to understand about various functions of business management.

Course 11: Business Statistics

- CO1. The students after the completion of this course will be able to understand & apply the concepts of mean, mode & median.
- CO2. The students after the completion of this course will be able to apply various methods of sampling& probability measurement.

Course 12: Fundamentals of Entrepreneurship

- CO1. The students after the completion of this course will be able to create entrepreneurial temper.
- CO2. The students after the completion of this course will be able to take up the cause of entrepreneurship.

Course 13: Income Tax

- CO1. The students after the completion of this course will be able to understand the basic concept & acquire knowledge about computation of Income.
- CO2. The students after the completion of this course will be enabled to submit Income Tax Returns, Advance Tax & Tax deducted at source
- CO3. The students after the completion of this course will be able to identify the procedures of Tax collection authorities under Income Tax Act.

Course 14: Auditing

- CO1. The students after the completion of this course will be able to acquaint themselves about concept & principles of Auditing, Audit process, Assurance standards & Tax Audit and Audit of computerized system.
- CO2.The students after the completion of this course will be able to prepare Audit Reports.

Course 15: Indirect Taxes with GST

- CO1.The students after the completion of this course will be able to understand and apply the concept of GST.
- CO2. The students after the completion of this course will be able to understand and apply the concept of Excise duty, CENVAT.
- CO3. The students after the completion of this course will be able to understand and apply the knowledge of Registration under GST including its procedures & the liable person for GST registration.

Course 16: Management Accounting

- CO1. The students after the completion of this course will be able to understand and apply the basic knowledge of accounting & techniques for management.
- CO2. The students after the completion of this course will be able to understand and apply managerial behavior & control structures prevalent under varied business environment.

Course 17: Principles of Marketing

- CO1. The students after the completion of this course will be able to ascertain the applicability of certain principle techniques and fundamentals of marketing.
- CO2. The students after the completion of this course will be able to analyze product life-aide.
- CO3. The students after the completion of this course will be able to familiarize with the significance & contribution of marketing to the business enterprise.

Course 18: International Marketing

- CO1. The students after the completion of this course will be able to ascertain the applicability of concepts of EXIM policy, International transport system & International product life cycle.
- CO2. The students after the completion of this course will be able to apply & promote themselves for employment as well as self employment in international businesses dealing with variety of innovative products & services.

Course 19: Financial Management

- CO1. The students after the completion of this course will be able to understand and apply the conceptual framework of financial management.
- CO2. The students after the completion of this course will be able to understand and apply the theories, methods which increase the wealth of the investors and the business concern.

Course 20: Financial Market Operations

- CO1. The students after the completion of this course will be able to understand the working culture of the financial markets in India.
- CO2. The students after the completion of this course will be able to understand the SEBI rules and regulations for both investors and company.
- CO3. The students after the completion of this course will be able to understand role of brokers, jobbers and merchant banking in Indian Financial Market.

Department of Mathematics

Programme specific outcomes

- Enabling students to develop a positive attitude towards mathematics as an interesting and valuable subject of study.
- A student should get a relational understanding of mathematical concepts and concerned structures and should be able to follow the patterns involved, mathematical reasoning.
- Introduction to various coerces like group theory, ring theory, field theory, matrix spaces, number.
- Ability to pursue advanced studies and research in pure and applied mathematical science.
- Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.

COURSE OUTCOME:

B.Sc. I year

Paper 1: Algebra and trigonometry

- CO 1: Matrices are used in solving linear equations.
- CO2: Understanding De-Moivere's theorem and its applications.
- CO3: Learn to find roots of polynomial.
- CO4: Introduction to complex analysis.

Paper 2: Calculus

- CO1: Introduction to sequence and series.
- CO2: To learn Leibnitz theorem and Maclaurin and Taylor series expansions.
- CO3: To apply higher order derivation in order to get expans.
- CO4: To learn about meaning of differential equations.

Paper 3: Vector analysis and geometry

- CO1: Understanding vector differentiation.
- CO2: To learn application of Gauss Theorem, Stocks Theorem is setting of the differential form.
- CO3: To learn geometric meaning of differential equation.

B.Sc. II year

Paper 1: Advanced Calculus

- CO1: To understanding concepts of the convergence of series and sequence.
- CO2: To learn about application of partial diffentiation on obtaining envelops and evaluates of given family of curves.
- CO3: Understanding Beta , Gamme function and their application

Paper 2: Differentian Equation

- CO1: To solve Lapace transformation of the function
- CO2: To learn Charpits Methods & Menge's Method
- CO3: To learn series Method, Bessed's & Legendes function.

Paper 3: Mechanics

- CO1: To understand various analytic condition of equilibrium principle of virtual work, catenary.
- CO2: To learn about central axis, simple Harmonic Motion, Velocity & acculation, central orbits.
- CO3: To understand Kepler's law. Motion on smoothn and rough plane curves, resisting medium.

B.Sc. II year

Paper 1: Analysis

- CO1: To learn series Convergence, divergence and oscillation.
- CO2: To learn Riemann integral, Conformal mapping, Cauchy sequences.
- CO3: To understand, compactness, connectedness, etc.

Paper 2: Abstract Algebra.

- CO1: To understand group Automorphism sylow's theorem.
- CO2: To understand Homomorphism , Isomorphism, Quotient ,of ring ,
- CO3: To understand Inner product specs, linear transformation, vector space, Ideals

Paper 3: Discrete Mathematics

- CO1:To understand the concept of directed graphs, connected and strongly connected graph etc.
- CO2: To understand and applications of Boolean algebra in switching circuits.
- CO3: To understand Numeric function, Use in recurrence relations, generating function.

DEPARTMENT OF PHYSICS

B.SC. (Bachelor of Science)
Year first, second,third

Programme specific outcomes:

- After successful completion of three year degree program in physics a student should be able to;

  - PO-1.Demonstrate, solve and an understanding of major concepts in all disciplines of physics.
  - PO-2. Solve the problem and also think methodically, independently and draw a logical conclusion.
  - PO-3.Employ critical thinking and the scientific knowledge to design, carry out, record and analyze the result of physic experiment.
  - PO-4. Create an awareness of the impact of physics on the society, and development outside the scientific community.
  - PO-5.To inculcate the scientific temperament in the student and outside the scientific community.
  - PO-6. Use modern techniques, decent equipments and phonics software's.

B.sc. first year

COURSE TITLE :(Paper I-paper code0793) Mechanics, oscillations and properties of matter.

COURSE OUTCOMES :-

- Understand lows of motion, reference frames, and its applications i.e. projectile motion, simple harmonic oscillator, rocket motion, elastic and collision.
- Understand the idea of conservation of angular momentum, central forces and the effective potential.
- Understand the application of central force to the stability of circular orbits, Kepler's lows of planetary motion, orbital precession and Rutherford scattering
- Understand the dynamic of rotating, object 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, example involving the centrifugal force and coriolis force.
- Understand the basics of material properties like, elasticity, elastic constants and their relation, torsion of a cylinder, bending of a beam, cantilever, and beam supported at its end and loaded in the middle.
- 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, stoke's formula.

COURSE TITLE:-(Paper II paper code 0794) ELECTRICITY,MAGNETISM AND ELECTROMAGNETIC THEORY

➢ COURSE OUTCOMES:

- Know the vocabulary and concepts of physic as it applies to : principles of Electric Field, Gauss's law, Electric Potential, Capacitance and Dielectrics, Current and Resistance, Direct Current Circuits, Magnetic Fields, Sources of
  Magnetic Fields, Faraday's law, Inductance, Alternating Current Circuits, and Electromagnetic Waves.
- Understand the relationship between electrical charge, electrical field, electrical potential and magnetism.
- Be able to use electromagnetic theory and principles in a wide range of applications.
- Learn a variety of advanced mathematical methods and computer techniques.
- Develop skill to solve numerical problems on it.
- Solve mathematical problems involving electric and magnetic forces, fields, and various electro-magnetic devices and electric circuits.
- Develop explicit problem- solving strategies that emphasize qualitative analysis steps to describe and clarify the problem.
- Gain confidence in their ability to apply mathematical methods to understand electro-magnetic problems to real- life situations.
- Ability to define and derive expression for the energy both for the electrostatic and magnetostatic fields, and derive poyntings theorem from Maxwell's equation and physical interpret.
- Ability to describe and make calculation of plane electromagnetic waves in homogeneous media, including reflexion of such waves in plane boundaries between homogeneous media.
- Understanding of electrodynamics and relativity.

➢ Lab Outcomes :

- Understand physical characteristics of SHM and obtaining solution of the oscillator using experiment.
- Use both analytical mathematics and numerical method to explore the subjects mentioned above. In particular you should be able to analyse experiment oscillator or wave phenomena, such as sound,using suitable methods.

- Use lissajous figures to understand simple harmonic vibration of same frequency and different frequency.
- Solve wave equation and understand significance of transverse waves.
- Solve wave equation of a longitudinal vibration in bars free at one end and also fixed at both the ends.
- Obtain boundary conditions of a longitudinal vibration in bars free at one end and also fixed at both the ends.
- Gain knowledge applications of transverse and longitudinal waves.

B.sc second year

COURSE TITLE:-(PAPER-I)THERMODYNAMICS, KINETIC THEORY AND STATISTICAL PHYSICS

➢ COURSE OUTCOMES:

After studying the chapter, the student will be able to understand.

- Laws of Thermodynamics, transport phenomena and maxwell's expression of velocity.
- Carnot's theorem and reversible and irreversible process.
- Entropy- reversible and irreversible process, temp-entropy diagram.
- Joule –Thomson Effect porous plug experiment.
- Basic lows – Stefan's fourth power low, Rayleigh jeans low, plank's low, black body radiation, specific heat of gases- variation of specific heat of diatomic gases.
- Familiarize in depth about statistical distribution and have basic ideas about Maxwell's Boltzman, Bose – Einstein and Fermi Dirac statistical and their applications.

COURSE TITLE-: (paper II) WAVES, ACOUSTICS AND OPTICS

➢ COURSE OUTCOMES:

After studying the chapter, the student will be able to understand

- Solve wave equation and understand significance of transverse waves.
- Solve wave equation of a longitudinal vibration in bars free at one end and also fixed at both the ends.
- Use Lissajous figures to understand simple harmonic vibration of same frequency and different frequencies.
- Understand the concept of mechanics, acoustics and the properties of
- To have developed the idea of interference, diffraction and polarization and to solve problems related to the phenomena.
- Understand about different laser systems and its application.

➢ LAB OUTCOMES:

- Student would gain practical knowledge about heat and radiation, Thermodynamics, thermo emf, RTD etc. and perform various experiments.
- The practical knowledge of wave motion doing experiments: tuning fork, electric vibration. they would also learn optical phenomena such as interference, diffraction and dispersion and do experiments related to optical devices: prism, grating, spectrometers.

B.sc third year

COURSE TITLE: (Paper I-paper code 0893) Relativity, Quantum mechanics, Atomic molecular and nuclear physics.

➢ Course Outcomes:

- Know the Cartesian, Spherical polar and cylindrical co-ordinate systems.
- To understand the Special theory of Relativity.
- Discuss the Michelson – Morley Experiment.
- To obtain the series Solution by Frobenius method.
- Study the generating function for Legendre, Hermite Polynomials.
- Understand De – Broglie hypothesis and uncertainty principle.
- Derive Schrodinger's time dependent and independent equation.
- Solve the problems using Schrodinger's steady state equation.
- Get knowledge of rigid rotator.
- Understand different operator in Quantum Mechanics.
- To know the Rutherford experiment of atom, to understand molecular spectra of atom, to study the Raman Spectra. To study the Zeeman Effect, to understand the quantum numbers.
- Know the properties of nuclear like's binding energy, magnetic dipole moment and electric quadruple moment.
- To understand the concept of radioactivity and decays law.
- To study achievement of Nuclear Model of physics and its limitations.
- To give an extended knowledge about nuclear reactions such as nuclear fission and fusion
- To understand the basic concept of particle physics.

COURSE TITLE :-(Paper II- paper code -0894) Solid State Physics, Solid State Devices and Electronics.

➢ Course Outcomes:

- Know the principle of structures determination by diffraction.
- To understand the principles and techniques of x- rays diffraction.
- Know the fundamental principles of semiconductors and be able to estimate the charge carrier mobility and density.
- To give an extended knowledge about magnetic properties like diamagnetic, paramagnetic, ferromagnetic, ferrites and superconductors.
- Understand the basic concept of force between atoms and bonding between molecules.
- Understand of diffraction experiment and reciprocal lattice.
- Understand crystal vibrations: phonon heat capacity and thermal conductivity.
- Understand free electron Fermi gas: density of states, Fermi level and electrical conductivity.
- Understand electronic in periodic potential: energy bands theory classification of metals, semiconductors and insulators.

- Understand semiconductors: band gap, effective masses, charge carrier distributions, doping, and PN junction.
- Understand metals: Fermi surface, temperature dependence of electrical conductivity.
- Understand the relationship between conductor and insulators and super conductivity.
- Understand the properties of matter and classification polarization.
- Understand the properties of semiconductors.
- Understand the relationship between semiconductor devices and understand the application of semiconductor device.
- Know the special purpose diode.
- To study the transistor amplifier.
- To understand the FET, JFET, MOSFET.
- To study the operational amplifier and their types.
- To know the timer IC-555 and its classification.
- To study the regulated power supply.
- To understand the sequential logic circuits.

➢ Lab outcomes:

- Understand the application of diode, npn transistor, OP-AMPand logica gates.
- Understand half adder and full adder
- Understand tunnel diode characteristics. (V-I)
- Understand optical components and systems.
- Understand and choose, different models for light.
- Ability to calculate light level and ray paths in optical systems.
- Understand the operating principle of some important types of optical instruments.

DEPARTMENT OF ZOOLOGY

Programme specific outcomes

- PSO1. Develop insight and improve their analytical communication and professional skills
- PSO2. Understanding the morphology and functional characteristics at cellular and sub-cellular (molecular) level
- PSO3. Enhancing the technical skills for experimental purposes

COURSE OUTCOMES

Course Title: ZOOLOGY THEORY

- **CO1** Understanding of relationships between organisms through Systematics and cell biology
- **CO2** Describe type study
- **CO3** Describe mammalian physiology
- **CO4** Describe eugenics and evolution
- **CO5** Elaborate ecology

Course Title: LOWER INVERTEBRATES

Lower invertebrates, introduction, symmetry, coelom, acoelom and parasitism,

- **CO1** Classify and characterize Phylum-Protozoa
- **CO2** Classify and characterize Phylum-Porifera
- **CO3** Classify and characterize Phylum-Coelenterata
- **CO4** Classify and characterize Phylum-Platyhelminthes
- **CO5** Classify and characterize Phylum-Neo-platyhelminthes

Course Title: HIGHER INVERTEBRATES

General characteristics and Classification up to classes of each phylum:

- **CO1** Introduction to Coelomates
- **CO2** Introduction to Annelida
- **CO3** Introduction to Arthropoda
- **CO4** Introduction to Mollusca
- **CO5** Introduction to Echinodermata

Course Title: BASICS OF NEUROSCIENCE

- **CO1** Introduction to Neuroscience
- **CO2** Introduction to Nervous system
- **CO3** Significance of Ion channels and neurotransmitters
- **CO4** Understanding of cellular and Molecular neurophysiology
- **CO5** Describe techniques to study brain

Course Title: CHORDATA I

- **CO1** Characteristics and Outline Classification of Protochordata
- **CO2** Characteristics and Outline of Classification of Origin of Chordata
- **CO3** Characteristics and Outline Classification of Pisces and Amphibia
- **CO4** Characteristics and Outline Classification Reptiles and Aves
- **CO5** Characteristics and Outline Classification of Mammalia

Course Title: CHORDATA II

Comparative vertebrate anatomy of the systems with respect to piscean, amphibian, reptilian, avian and mammalian

- **CO1** Describe the anatomy of Integumentary System
- **CO2** Describe the anatomy of Digestive System
- **CO3** Describe the anatomy of Circulatory and Respiratory Systems
- **CO4** Describe the anatomy of Urogenital System
- **CO5** Describe the anatomy of Neuro-endocrine System

Course Title: ANIMAL ECOLOGY

- **CO1** Describe the history, introduction and nature of ecosystem
- **CO2** Explain the biogeocycles and laws
- **CO3** Describe population & community ecology
- **CO4** Describe wild life conservation and management
- **CO5** Develop understanding of aquatic ecology

Course Title: CELL BIOLOGY

- **CO1** Give the overview of cell
- **CO2** Describe the structure and function of plasma membrane
- **CO3** Structure, functions and interactions of cell organelles and inclusions
- **CO4** Detail description of cell division
- **CO5** Describe structure and function of chromosomes

Course Title: GENETICS

- **CO1** Explain Mendalism expanding Mendel's Laws
- **CO2** Describe gene action
- **CO3** Describe mutation, mutagenesis and repair
- **CO4** Explain sex determining systems and dosage compensation
- **CO5** Explain the process of gene expression and applications

Course Title: ANIMAL PHYSIOLOGY

- **CO1** Develop understanding for the fundamental concepts of physiology of digestion
- **CO2** Develop understanding of blood vascular system
- **CO3** Develop the fundamental concepts of physiology of respiration
- **CO4** Familiarize students with renal physiology and muscle
- **CO5** Develop basic understanding of endocrine system and its interactions with other systems

Course Title: EVOLUTION & ZOOGEOGRAPHY

- **CO1** Trace the Origin of life
- **CO2** Established theories of evolution
- **CO3** Correlate the theories with the evidences
- **CO4** Explain the genetic basis of evolution
- **CO5** Describe zoogeography

Course Title: MICROBIOLOGY

- **CO1** Introduction to Microbiology
- **CO2** Describe the types and molecular structure of viruses
- **CO3** Describe the types and structure of bacteria
- **CO4** Most prevalent microbial diseases
- **CO5** Understanding of applied Microbiology

Course Title: BIOLOGICAL CHEMISTRY

- **CO1** Fundamental concept of bioenergetics in cellular processes
- **CO2** Describe the structure of amino acids and proteins
- **CO3** Describe the structure and function of enzymes
- **CO4** Describe the structure of carbohydrates
- **CO5** Describe the structure of lipids and nucleic acids

Course Title: PARASITOLOGY

- **CO1** Explain the phenomenon of living together and symbiosis
- **CO2** Describe parasitism
- **CO3** Describe the life histories of some protozoan and helminth
- **CO4** Describe the life histories of arthropods
- **CO5** Understanding of applied parasitology

Course Title: DEVELOPMENTAL BIOLOGY

- **CO1** Develop the basic concepts of development
- **CO2** Explain the fundamental concept of embryogenesis
- **CO3** Explain the fundamental concept of Organogenesis
- **CO4** Describe the developmental model systems- invertebrates
- **CO5** Describe the developmental model systems- vertebrates

Course Title: ENTOMOLOGY

- **CO1** Insect taxonomy to introduce students to fascinating world of insects
- **CO2** Describe the general insect morphology
- **CO3** Describe the insect physiology
- **CO4** Fundamental understanding of insect pathology
- **CO5** Insect's role as a source for commercial products (honey, wax, silk, lac and medicines), in forensic science; as vectors; in pest control

Course Title: WILDLIFE CONSERVATION & MANAGEMENT

- **CO1** Wildlife habitat studies will enable students to solve problems of
- conservation
- **CO2** Describe habitat management
- **CO3** Understanding of Conservation will help protection of wildlife
- **CO4** Explain wildlife trade that may enhance the economy
- **CO5** Wildlife legislation will systematically organize the understanding of wildlife conservation, trade and management

Course Title: IMMUNOLOGY

- **CO1** Descrive the evolution of immunology, historical perspective
- **CO2** Describe the fundamental concept of Innate and adaptive immunity
- **CO3** Develop the basic concepts of Antigenicity and immunogenicity
- **CO4** Describe the molecular structure and function of major histocompatibility complex
- **CO5** Describe the types of hypersensitivity and mechanism of tolerance

Course Title: QUANTITATIVE BIOLOGY

- **CO1** Introduction to biostatistics
- **CO2** Explain descriptive statistics
- **CO3** Explain correlation and regression
- **CO4** Explain graphical representation of data
- **CO5** Fundamental concept of Hypothesis testing

Course Title: MOLECULAR GENETICS

- **CO1** Describe the fundamental concept of DNA Replication
- **CO2** Describe the fundamental concept of Transcription
- **CO3** Explain the molecular events in Translation
- **CO4** Describe the types of Posttranslational modifications (PTM)
- **CO5** Describe Gene Regulation and structure and function of Transposons

Course Title: Neurobiology

- **CO1** Understanding of Brain Architecture
- **CO2** Fundamental concept of how brain develops-Developmental Neuroanatomy
- **CO3** Fundamental concepts of Neurophysiology
- **CO4** Fundamental concepts of Neuro-endocrinology
- **CO5** Describe the Neurobiology of aging and sleep

COURSE OUTCOME (CO)

FIRST YEAR

English Language

ENGLISH LANGUAGE AND INDIAN CULTURE

- The students will learn about the cultural diversities of India.
- They will get information about the freedom struggle of India and its partition
- They will be aware of our Constitution.
- They will come learn how to write formal and informal letters in English.

SECOND YEAR

English Language

- To development the Scientific temper.
- To make the students aware of Indian's ancient history of Medical Science.
- The students will be able to learn how to write a report of an incident.

THIRD YEAR

English Language

ENGLISH LANGUAGE AND ASPECTS OF DEVELOPMENT

- Students will have the pleasure of reading and understanding of literary pieces of some great literary writers.
- It will enhance the writing skill of students.
- Students will have the knowledge of Swami Vivekanand's concept of Universality of Religion. IT Technology, Women and Development, Basic Quality of Life and Gram Panchayat System.

DEPARTMENT OF BOTANY

CORE COURSE I (1271)–PLANT DIVERSITY –I

TITLE : BACTERIA,VIRUSES, FUNGI, LICHENS AND ALGAE

On completion of this Course students will be able

- To gain knowledge about microbial diversity.
- To gain Knowledge about Bacteria and viruses disease.
- To have the ability to utilize the concept of mushroom cultivation.
  To know about various plant diseases and their control measures.
- To understand the phylogeny of plants.
- To explore Economic Importance of Algae, fungi and lichens.
- Learn about the structure, pigmentation, Food reserves and methods of reproduction of Algae.

CORE COURSE II (1272) –PLANT DIVERSITY –II

TITLE –BRYOPHYTES , PTERIDOPHYTES ,GYMNOSPERMS AND PALEOBOTANY

On completion of this Course students will be able.

- To understand the phylogeny from Bryophytes and Pteridophytes .
- To know the evolution of Sporophytes in Bryophytes.
- Understand the stellar evolution seed formation habit in pteridophytes.
- To gain knowledge about life cycle of Gymnosperm plants.
- To explain about fossils and fossilization.
- To understand about Geological time scale.
- To know about Heterospory and origin of seed habit.
- To know about the structure life history and economic importance of gymnosperm.

CORE COURSE- III (1317)

TITLE –PLANT TAXONOMY , ECONOMIC BOTANY , PLANT ANATOMY AND EMBRYOLOGY OF ANGIOSPERM

On completion of this Course students will be able

- To recognized the major group of vascular plants and their phylogenetic relationships.

- 2. To gain proficiency in the use of keys and identification manuals for identifying any unknown plant to species level.
- Gain knowledge about botanical survey of India.
- Briefly studied on herbarium techniques.
- Learn the type of classification- Artificial, Natural and phylogenetic.
- To explore the use of plats as Medicine by traditional approaches.
- To understand different system of Medicine their uses.

CORE COURSE- IV (1318)

TITLE- ECOLOGY AND PLANT PHYSIOLOGY

- To understand Ecological relationship between organisms and their environment.
- To identify diversity of life form in an ecosystem.
- To understand the role that biodiversity plays in conservation science.
- Understand the population and community Ecology.
- Studied various statistical method of analysis.
- Learn the approaches to the study of Ecology (Autecology , Synecology , Genecology)
- To understand plant physiological process and metabolism.

CORE COURSE- V (1366)

TITLE – PLANT PHYSIOLOGY , BIOCHEMISTRY AND BIOCHETNOLOGY

- To understand Ecological relationship between organisms and their environment.
- To identify diversity of life form in an ecosystem.
- To understand the role that biodiversity plays in conservation science.
- Recombinant DNA technology.
- To understand plant physiological process and metabolism.
- To explain the role of micro nutrient in plant growth and development.
- To relate photosynthesis with the formation of primary and secondary metabolite.
- To clarify the mechanism and breaking of dormancy.
- know about the plants growth hormones (Auxins , Gibberellians , Cytokinins , Ethylenes)

CORE COURSE- VI (1367)

TITLE- ECOLOGY AND UTILIZATION OF PLANT

- To understand Ecological relationship between organisms and their environment.
- To identify diversity of life form in an ecosystem.
- To understand the role that biodiversity plays in conservation science.
- Understand the population and community Ecology.

- Studied various statistical method of analysis.
- Learn the approaches to the study of Ecology (Autecology , Synecology , Genecology)
- To explore the use of plats as Medicine by traditional approaches.
- To understand different system of Medicine their uses.
- Morphological , Anatomical and physiological responses of plant to water
- Xerosere and hydrosere
- Biogeographical regions of India.

DEPARTMENT OF CHEMISTRY

Course Outcome in Chemistry – B.Sc. Part - I

PAPER I: INORGANIC CHEMISTRY

- Students will learn atomic structure through basic concepts of QuantumMechanics
- Students will understand periodic variations in properties of elements
- Students will acquire knowledge about various bondings and theories of bonding's
- Students will be able to analyse qualitatively cations & anions applyingprinciple of common ion and solubility product.

PAPER II: ORGANIC CHEMISTRY

- Students will learn basic concepts of Organic Chemistry in reference to hybridization, bondings, stability
- They will acquire understanding in isomerism,stereochemistry, conformational analysis
- They will learn about aliphatic and aromatic hydrocarbons in details.

PAPER III: PHYSICAL CHEMISTRY

- Students are expected to learn the students are expected to learn theMathematical concepts
- They will be able to understand gaseous states, colloidal states, solid statechemistry
- They will understand principle of Chemical Kinetics and application of Catalysts in Industry.

PAPER IV: LABORATORY COURSE

- This laboratory course enables students to determine & analyse: Semi-microqualitative analysis, Volumetric analysis.
- This course also makes students to learn separation techniques andpurification of organic compounds.

Course Outcome in Chemistry – B.Sc. Part - II

PAPER I: INORGANIC CHEMISTRY

- Students will learn basic concepts of coordination chemistry
- Students will understand and will be able to interprete properties of complexformation.
- Students will acquire knowledge about various bondings and theories ofcomplex formation.
- Students will be able to understand about Lanthanides and Actinides, Acids & Bases, Non aqueous solvents.

PAPER II: ORGANIC CHEMISTRY

- Students will learn and understand about Organic halides, Alchohols,phenols.
- They will acquire knowledge of mechanism of chemical reactions and kinetics.
- They will learn about Aldehydes, ketones, carboxylic acids, nitrogencontaining organic compounds.

PAPER III: PHYSICAL CHEMISTRY

- Students are expected to learn fundamental concepts of Thermodynamics
- They will be able to understand laws of thermodynamics, thermo chemistry
- They will understand principle of Chemical dynamics, chemical equilibrium,phase
- Equilibrium
- Students will learn Laws of photochemistry, application in biochemicalprocess.

PAPER IV: LABORATORY COURSE

- Students will have expertise in determination of hardness of water
- Students will be able to describe and classify organic compounds in terms of their functional groups and reactivity.
- They will also learn the paper chromatographic separation of metal ions.
- After completion of this course students will be able to analyze the inorganicsample qualitatively.

Course Outcome in Chemistry – B.Sc. Part - III

PAPER I: INORGANIC CHEMISTRY

- Students will learn through advance concepts of coordination Chemistry
- Students will learn magnetic behavior of metal ligand complex, electronicspectra of TMC
- Students will acquire knowledge about various bondings in organometalliccompounds and Metal carbonyls
- Students will be able to acquire knowledge about biological process and roleof trace elements

PAPER II: ORGANIC CHEMISTRY

- Students will learn details of Heterocyclic organic compounds
- They will acquire understanding in organometallic reagents and itsapplications
- They will learn bioorganic molecules, will be able to apply knowledge aboutpolymers and dyes in industries.
- They will be able to understand concepts of spectroscopy

PAPER III: PHYSICAL CHEMISTRY

- Students are expected to learn the advance concepts of quantum Mechanics and their applications
- They will be able to understand application of molecular and nuclearChemistry
- Students will learn principle of electrochemistry and application in Industryand techniques of Corrosion prevention.

PAPER IV: LABORATORY COURSE

- After completion of this course students will be able to analyze the inorganic sample qualitatively.
- Students will be preparing some inorganic double salts and co-ordination complexes. With these experiments they will learn the synthetic methodsfor preparing inorganic compounds and characterize those compounds.

Department of Hindi

Couse Outcomes : Subject Hindi

Course -FC-Hindi Language B.A.IstYear /B.Sc 1st Year / B.Com 1st Year

- C.O.**1**. छात्रों को हिंदी भाषा के रचनात्मक पहलुओ का ज्ञान होगा **.**
- C.O.**2.** छात्रों को शुद्ध हिंदी वर्तनी एवं मानक हिंदी भाषा के प्रयोग का ज्ञान होगा .
- C.O.**3.** छात्रों को देवनागरी लिपि के विकास एवं मानकीकरण का ज्ञान होगा **.**
- C.O.**4.** छात्र कम्पुटर में हिंदी के अनुप्रयोग से परिचित होंगे.
- C.O.**5.** छात्रों को संशेपन,पल्लवन,पत्राचार ,अनुवाद एवं पारिभाषिक शव्दावली का ज्ञान होगा .

Course -FC-Hindi Language B.A.2ndYear /B.Sc 2nd Year / B.Com 2nd Year

- C.O. 1. छात्रों को हिन्दी के प्रतिनिधि निबंधकारों के निबंधों का परिचय प्राप्त होगा।
- C.O. 2. छात्र कार्यालयीन भाषा, मीडिया की भाषा, वित्त व वाणिज्य की भाषा, मशीनी भाषा से परिचित होंगे।
- C.O.3. छात्र हिन्दी भाषा और उसके विविध रूपों से परिचित होंगे।
- C.O.4. छात्र अनुवाद की प्रक्रिया के सैद्धांतिक एवं व्यावहारिक स्वरूपों से परिचित होंगे।
- C.O.5. छात्र हिंदी के व्याकरणिक कोटियों से परिचित होंगे|

Course FC-Hindi Language /B.A.3rdYear/ B.Sc 3rdYear/ B.Com 3rdYear

- C.O.1 – छात्रों में हिन्दी साहित्य एवं रचनाकारों के प्रतिरूचि का निर्माण होगा।
- C.O.2 – छात्र कथन की विभिन्न शैलियों से परिचित होंगे।
- C.O.3 – छात्र वाक्य की विभिन्न संरचनाओं से परिचित होंगे।
- C.O.4 – छात्रों को हिन्दी के कार्यालयीन एवं व्यावहारिक पत्रों के स्वरूप का ज्ञान प्राप्त होगा।
- C.O.5 – छात्रों को अनुवाद प्रक्रिया का ज्ञान प्राप्त होगा।