Program Outcome

Bachelor of Arts

➢ Students have option to choose combination of three subjects and so develop social, politic, historic and literary consciousness. They will be able to cultivate the sensibility to critically understand the social phenomenon that affects their lives. They also learn at least two different languages so at the end of program they will have advanced writing, speaking, interpretive, and composition skills in both languages

➢ Students can go for career options in various fields after their B.A. degree including economist, historian, political scientist, social activist and so on. This course offers opportunities in banking sector, SSC, railway, civil services.

➢ After completion of course students can go for higher education and choose teaching as career in schools or universities.

➢ They are sensitive enough to think critically and act over for the solutions of various issues prevailed in human life. Students become socially aware and can identify the societal problems. Thus can choose to work in NGO and some may open their own.

Bachelors of Science

➢ Students will have an understanding of basic concepts, theoretical principles and theories related various core subjects and their relevance in day-to-day life.

➢ Students will develop their laboratory skills which is useful for joining in industries. They are aware of importance of working with safety in laboratories and have information about the protocols while dealing with chemicals and equipment.

➢ Expertise in basic sciences promotes an in-depth exploration in specific fields, knowledge about new discoveries, innovations of technologies and methodologies in areas of biological research, health, business, education etc.

➢ Students will be able to investigate and apply mathematical problems in a variety of context related to science and technology.

➢ Students will develop a scientific aptitude and sense of reasoning. Students can use scientific techniques to solve societal problems

➢ The program will help students to develop critical thinking to analyze a problem, assess it and solve it

➢ Students can serve in Indian Army, Indian Navy, and Indian Air Force as officers. Students have option to join Indian Civil services, IAS, IFS, etc

➢ The students can find opportunities in various organizations and institutes like DRDO, BARC, and CSIR etc. Students can find employment in government sectors, bank sector, in MNCs after completion of course. They can opt for higher studies and then do some research to join as scientist, can also serve in industries.

Bachelors of Commerce

➢ The students can get the knowledge, skills and attitudes during the end of the B.com degree course. They can turn into a Manager, Accountant, Management Accountant, Cost Accountant, Bank Manager, Auditor, Company Secretary, Teacher, Professor, Stock Agents, and Government employments etc. Students will prove themselves in different professional exams like C.A., C S., HPPSC, HPSSB, UPSC, as well as other courses.

➢ This program could provide Industries, Banking Sectors, Insurance Companies, Financing companies, Transport Agencies, Warehousing etc., well trained professionals to meet the requirements. Students can also get the practical skills to work as accountant, audit assistant, tax consultant, and computer operator, as well as other financial supporting services.

➢ Students can get thorough knowledge of finance and commerce. The knowledge of different specializations in accounting, costing, banking and finance with the practical exposure by accounting packages like tally will help the students to stand in competitive environment.

➢ Students will gain thorough systematic and subject skills within various disciplines of finance, auditing and taxation, accounting, management, communication, and computer application.

➢ The students will acquire the knowledge, skill in different areas of communication, decision making, innovations and problem solving in day to day business activities. Students will learn relevant advanced accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.

- Capability of the students to make decisions at personal and professional level will increase after completion of this course. Students can independently start up their own business.
- Students will be able to do their higher education and can make research in the field of finance and commerce.

Course Outcome

Chemistry

In three year course program for B. Sc. in chemistry student will gain an understanding of

- Atomic structure, chemical bonding in ionic and covalent compounds
- Fundamentals of organic chemistry, structure, reactivity and stability of various class of organic compounds
- Concept of thermodynamics, chemical equilibrium and its relation with thermodynamics quantities
- The basics of electrochemistry and their relation with thermodynamic properties
- Thermodynamics of solution, phase equilibrium
- Basics of different biomolecules
- Various method involved in qualitative and quantitative analysis
- Principle, working of instruments for chemical analysis
- Fundamentals of transition and inner transition elements
- Bonding, structure and application of co-ordination complexes
- Concept of reaction rate and states of matter
- The theory involved in fuel chemistry and chemistry of cosmetics
- Structure and preparation of polymers and their application in daily life
- Quantum mechanics, interaction of electromagnetic reaction with molecule and spectra
- The fundamental of main group elements , acid and bases
- Key concept of organometallic compounds, polynuclear and heteroaromatic compounds
- The role of chemistry in society with understanding the business skills for chemistry with the involvement of student in various practical. They will get expertise in handing various chemicals and instruments follow the proper procedure.

Physics

Upon competition of B. Sc. physics course students will become familiar with

➢ Mathematical tools required to analyze physical problem like vectors, differential equations etc.

➢ Concept of laws of gravitation, motion, relativity theory, and their application

➢ Different oscillation motion and associated energy.

➢ The elastic properties of matter

➢ The basic concept of current and current density vector

➢ Relationship between electrical charge, electric field, electrical potential and magnetism

➢ Magnetism and magnetic properties of material

➢ Electromagnetic radiation, electromagnetic field and its properties

➢ The basic concept of thermodynamic laws, concept of entropy, internal energy

➢ Concept of energy functions

➢ Statistical calculations of thermodynamics quantities

➢ Kinetics theory of gases

➢ Concept of properties of fluids such as, surface tension, viscosity, fluid pressure

➢ Principles of harmonic oscillation, concept of sound and its frequencies

➢ Basics of optics, nature and interactions of light with matter, concept of interferences, diffraction

➢ Concept of dual nature of light and matter

➢ Proposed models of atom and atomic spectra

➢ Concept of uncertainty principle, Schrodinger equation and application

➢ The elementary particles, law of radioactivity, nuclear reactions

➢ Different mathematical methods and their application in various mathematical physical problems

➢ The crystal structure and properties of solid, concept of Superconductivity

➢ Theories of quantum mechanics, operators, Schrodinger equation and calculation of its solutions

➢ Effect of electric/magnetic field on atom

➢ Various mechanical and electrical tools

➢ Use of tools of computer programing and numerical analysis in solving problem in physics
➢ Design electrical circuits and appliances
➢ Various instrument, underlying principle and working

Botany

In the three year course work of B. Sc. Botany, students will

➢ Understanding of morphological diversity among different microbes, algae, bryophytes, pteridophytes, gymnosperms
➢ Economic importance of various species of plants in different phylum of above mentioned divisions
➢ Gain insight of the productive characteristics and life cycle pattern of plants
➢ Able to distinguish between gymnosperm and angiosperms
➢ Understanding of plant communities, ecological factors that affect the plants
➢ Learn about food chain, energy flow and cycle of C, N, P
➢ Able to identify, classify and characterize the plants
➢ Gain insight of the classification of angiosperm, rules for nomenclature
➢ Understand the evolutionary development and the physiology of angiosperms
➢ Learn about structure of various tissues of system
➢ Know the concept of adaptation in plant and secondary growth in plants
➢ Understand the male and female structure of plants, fertilization in plants, embryo and endosperm types
➢ Understand the application of plant physiology in agriculture and horticulture
➢ Learn about plant cells and water relation
➢ Known about the mineral nutrition requirement in plants
➢ Study the processes during respiration, photosynthesis and metabolism in plant,
➢ Know about structure, properties and role of enzyme& hormones in plants
➢ Learn the response of plants to light and temperature
➢ Know about the brief account of origin, morphology and uses of plants of economic importance
➢ Know the scope of biotechnology and its basic tool

- Application and importance of plant tissue culture in agriculture, horticulture and forestry
- Gain knowledge regarding various techniques and their application in industry cell science
- Learn about cell structure i.e. cell wall, membrane, DNA and RNA etc
- Understand the synthesis of protein and regulation of gene expression
- Gain knowledge about genes concept, heredity, relative theories, linkage, cross over, mutation
- Gain knowledge about modes of breeding in plants and their application for crop improvement
- Understand the general account of microbes used as bio fertilizer, organic farming methods and its application in fields.
- Learn about the importance, scope and methods of floriculture and gardening
- Study the economic importance of various ornamental plants
- Gain skill in production, packaging of commercial flowers
- Understand the concept and objectives of ethno botany, methodology involved and its role in medicines
- Gain skill in mushroom cultivation by learning the cultivation practice and technology involved
- Know about the analytical techniques in plants sciences-principles and applications

Zoology

On completion of three year course of B. Sc.in Zoology, students will gain understanding about
- The character of vertebrate and invertebrate animals
- The evaluation history of phylum
- Internal system of phylum with examples
- Life cycles of parasites
- Evolution , adaptation, morphology of different animals in chordates
- Identification of poisonous and non-poisonous snakes.
- The anatomy of vertebrates like brief account of digestive system, respiratory, circulatory, urinogenital, nervous system etc.
- Fertilization and various stages of embryonic development,

- Structure of nerves and nervous system, process of metabolism, digestion, excretion, respiration and structure of different organs
- Composition of blood, cardiac cycle, cardiac impulses
- Enzymes and its mechanism of action
- Reproductive system and endocrine glands and role of different hormones
- Concepts and laws in genetics, mutation
- Events in evolution of life and different theories of evolution
- Concept and scope of biotechnology
- Techniques in gene manipulation, concept and application of genetically modified organisms
- Cell culture techniques and application in diagnosis of genetic diseases, gene therapy
- Diseases, pathogens, pests, parasites affecting humans and animals, relationship between hosts and parasites
- Economic importance of animal husbandry, poultry, fish technology
- The general features, types of insects as vectors of various diseases
- Concept of immunology, components, principle and working of immune system
- Vaccination
- The components and methods in medical diagnostics and their importance
- Causes, types, symptoms, complication, diagnosis and prevention of infectious and non-infectious diseases
- Apiculture: types of bees, bee keeping equipment, management, economic importance.
- Sericulture: rearing of silkworms, their lifecycle, pests and diseases of silkworms, methods for its control and prevention, economic importance and prospects in sericulture
- Potential scope of aquarium fish industry, exotic species of aquarium fish
- Meaning, objectives of research methods. Concept of data collection, analysis techniques, ethics, IPR, plagiarism, citation and patents.

Mathematics

In three year course of graduation with mathematics, students will

- Learn about calculus of up to three variables which has application in various branches of engineering.
- Understand Taylor's theorem, mean value theorem, Rolle's theorem, Lagrange's theorem, Maclaurin series
- Understanding of partial differentiation, Euler's theorem
- Learn about basics of theories of linear differential equations and types of differential equations
- Learn about methods of solving high order differential equations
- Understand concept of linear and non-linear partial differential and non-partial differential equations
- Learn about total and simultaneous differential equation
- Gain understanding of concepts in real analysis which is useful in statistics, probability etc.
- Learn about sequence, infinite series
- Learn about topics with examples in algebra such as groups, sub groups, matrices, integral domains and fields
- Understand about types of propositions, logical operators, concept of equivalences, quantifiers negation
- Gain understanding of sets, subsets, laws of set theory, classes of sets, finite and infinite sets
- Learn about difference of sets, relations, partitions with examples
- Understanding the concept in analytical geometry such as quadratic equations, parabola, hyperbola, eclipse, cylindrical surfaces and sphere
- Will be familiar with integration of partial, rational, irrational fractions, reduction formulae, double and triple integrals
- To find area and lengths of curves using integral methods.
- Learn about various operation in vectors, vector integration, Gauss theorem
- Learn about concepts of gradient divergence, orthogonality, curls, coordinates.
- Learn about concept of polynomials, roots, symmetric functions
- Algebraic solutions of cubic and biquadratic

- Understanding concept in number theory such as Lame's theorem, theorem of arithmetic prime numbers
- Learn representation of integers, properties of Dirichlet products, Mobius inversion formulae
- Familiar with functions, variables used in probability and statistics
- Elementary understanding of mathematical finances, such as bonds, interest, inflation, NPV, IRR, portfolio return, variance, feasible set etc.
- Study application of differential equation in various areas of SHM, electric circuit, conduction, conservation laws etc.
- Properties and examples of ordered sets, modular and distribution lattices, Karnaugh diagram forms of Boolean algebra
- Learn concept of transportation and game theory
- Learn about basics of graph theory
- Study the concept of matrices, and using it to solve linear equation, operations on matrices
- Application of mathematical tools in mechanics such as in laws of friction, work, potential energy, Newton's law of motion
- Learn about tools in linear algebra
- Learn about numerical methods like algorithms, numerical differentiation, interpolation etc.
- Concepts of complex analysis like limits, analytic function, logarithmic function, trigonometric function, contour etc.

Commerce

In three year course of B. Com., students will gain knowledge and understanding of

- Financial accounting such as accounting for hire-purchase, installments system, consignment, joint venture, Inland branches, dissolution of partnership firm
- How to record various types of business transactions and prepare trial balance
- Organization and management of business enterprise through study of foundation of Indian business and business enterprises

- Concept, style and importance of leadership, motivation, control
- Legal aspects of business along with relevant case law
- Application of mathematical and statistical techniques in business decision making such as matrices, differential calculus, uni- and bi-variate analysis, index number and time-series analysis
- Basic principles of banking and insurance services and investments
- Concept, importance and dynamics of international business and India's involvement with global business
- Principles and techniques of business communication to enhance the skill of students in oral and writing communication and to develop their overall personality
- How the organization works by applying economic principles and tools to business practices
- Concepts of regulatory framework for business, basics of insurance services and risk management process and environment
- Concept of Corporate accounts, amalgamation, reconstruction, liquidation by studying the accounts of specialized institutions (banking companies, electricity companies, insurance companies)
- Concepts in cost accounting, e-commerce, tax laws, entrepreneurship, personal selling and salesmanship to develop their skills

Economics

In three year course of B. A. with economics, students are able to understand

- The basic principles of microeconomic theory with applications such as the consumer behavior, cost and production concepts, monopoly firm theories etc.
- The concept of market failure, income distribution and factor pricing
- Definition, measurement of macroeconomics variables such as GDP, consumption, saving, investment and balance payments.
- Concept of inflation, its relation with unemployment and some basic concepts in open economy

- An overview of govt. finances, equity aspects of taxation of central, state and local government
- Key aspects of Indian economic development during second half of British Colonial rule.
- The trends in aggregate economic indicators in India in Post-Independence period
- Basic economic concepts and techniques, statistical concept of testing of simple and regression models
- Theory and functioning of monetary and financial sectors of economy, Financial and banking sector reforms and monetary policies
- Models explaining the composition and consequences of international trade, trade policies and its impact on exports of nation
- How to use techniques of mathematical and statistical analysis to analyze and understand economic concepts
- Collection, analysis, summarization and presentation of data using statistical software's
- Concept of Rural development and underlying issues, concept in analyzing economic behavior of firms and markets
- Basic features, and developmental issues of Himachal Pradesh economy
- Achievements and issues of Indian economy
- Economic concepts in areas of health, gender, energy environment
- Importance of population in economic development and related theories
- Strategy of economic development of Indian economy since independence
- Working of economic systems, evolution of socialism, capitalism
- Structural changes in Indian economy since independence in financial and external sectors

History

In three year course of B. A. with History, students will study and be familiar with

- Various sources to understand Indian history like archaeological, literary sources etc.
- Evolution of early cultures in India by studying geographical and ecological regions of India

- Palaeolithic beginnings, Mesolithic, Neolithic, Chalcolithic cultures, origin of rock art in Kaimur hills, Mirzapur (U. P.) and Bhimabetka (M. P.)

- Harappan civilization, Rise and decline of Mauryan empire

- Polities post-Mauryan period such as Shungas, Shakas, Kushanas, Satavahanas, Sangha, Janapada

- Changes and developments in polity and society in the early medieval India

- Foundation to decline of Sultans in sultanate period: territorial expansion, administrative set up, trade and commerce, fiscals and monetary system, relationship between different sections of societies

- Medieval India from sultanate to the Mughals: Mughal-Afgan struggles, emergence and consolidation of Sher shah Suri, Political expansion under Akbar rule, policies of Mughals (Akbar to Jahangir)

- Administrative structure (mansabdari, jagirdari etc.), social classes, trades and commerce, agricultural and non-agriculatural economy during Mughal period

- Decline of Mughal rule (peasant revolt, administrative crisis), rise of Maratha power under Shivaji and immediate successors

- Rise of European trade in India

- Rise of Indian regional powers (Awadhs, Ruhelas, Jats, Marathas)

- Incursion of Ahmad Shah Durrani in Punjab empire

- Early colonial rule: The British conquest of Bengal, Carnatic wars, effect on Indian economy due to drain of wealth

- Establishment of British Paramountcy, Anglo-Maratha wars, Agrarian settlements

- Social and administrative reforms during British empire

- Uprisings of 1857 revolt and reason of its failure

- Reorganization of British rules, transition in the policies towards education, industrialization, caste, socio-religion, gender

- Rise of Indian nationalism, formation of Indian National Congress, revolutionaries and India at end of world war I

- Emergence of Gandhi and his thoughts, non-cooperation movements, satyagrah, quit India movement

- World War II, INA, Constitutional negotiations, Independence, partition, integration of princely states, Making of Constitution
- Contemporary history, emergence of Italy and Germany as unified nation to conflicts with Europe, social tension and movements, colonialism, militarism and war
- Emergence of USA after Civil war, Japan's emergence as World power, movements, revolution, Balkan wars
- End of Czarist regime in Russia, First World war: Causes, events, results and aftermaths of war, economic and social consequences
- World History in Twentieth century: Capitalism, imperialism, Russian revolt
- Economic trends in Inter-war period, political ideologies before World war II
- History of USA: making of republic o evolution of democracy, capitalism, foreign policies and civil war
- Emergence of new World order (UNO), decolonization, Chinese revolution, Cold war, Military alliances, globalization,
- Economic, social conditions and issues in Post-colonial world
- The position of Women in Indian History from the Vedic period to twentieth century
- Major tribes in Indian history, environmental history of India, Science, Technology and Medicine in Colonial India

Geography

In three year course of B. A. with Geography, students will study and understand

- The basics in core themes of geography, geometry of earth, concept of regions-types, components and bases of regionalization, major climatic regions of the world
- Different elements of climate and underlying processes in their operations
- How earth has come into existence, what material it is made of, how it behaves
- Fundamentals of oceanography like origins of ocean, configuration, oceanic water properties, their importance to mankind
- Nature and formation of different types of landforms covering the earth surface

- Basic concepts in preparation of maps and diagrams and their appreciation in geography
- The location, physical divisions, drainage system, climate, soils, vegetation, and hazards affecting Indian territory
- Spatial distribution of humans and economic resources in India, Human geography in various facts such as population, settlements, and residence etc.
- Different techniques and their usage for transforming the spherical surface of earth to a flat one
- Physical and cultural aspects of Himachal Pradesh
- Aspects of physical, social, and economic surveys and elementary research methods in geography
- Various types of resources and resource population relationship
- Characteristics, distribution and dynamic aspects of population
- Economic geography i.e. economic activities and its relation with environment
- Detailed geography of some selected regions of India
- Structure of Indian Society and the evolution of socio-cultural regions of India
- Concept of environment, its constitution, different approaches of its study, environmental degradation and pollution, and some selected environmental issues
- Basic principles of remote sensing, its evolution and different types of remote sensing, meaning of GIS and role of GIS in geography
- Evolution of geographical thoughts and contribution of various scholars in its evolution
- History, physical division, river system, climate, soils, vegetation, and demographic characteristics of State and India
- Basic skills of map reading, physical and political features of various countries of the World

Political Science

In three year course of B. A. with Political Science, students will study and understand

- Concept of politics, liberty, equality, Justice, , Law, gender, civil society and state, Political theories and its relevance
- Approaches to study Indian politics, nature of state, Indian Constitution, Secularism, communalism, Liberalism, social movements
- History of Colonialism in India and its contribution to various political, social and economic ideas and structure in Modern India
- Basic concepts and approaches to comparative politics, classification of political system, electoral system, party systems
- Approaches to study international relations, cold war (meaning, nature and causes of its end), post cold war era, Indian foreign policies
- Legislative support: Concept of state legislature and parliament, legislative process, legislative committees, role of parliament in passing union budget
- The meaning and features of public opinion and democracy and survey research
- The legal systems in India its functioning, application of laws, acts, rights, cyber crime
- The meaning, types and levels of conflict and methods to resolve it
- Features of political thoughts from ancient to independent India and development of Indian political thought. Comparison of Indian political thought to western political thoughts
- The concept and theories of public policies and administration
- Structure and processes of governance at union level and state level, dynamics of civil society
- Meaning and nature of globalization, its different approaches, International terrorism, world organizations (UNO, WTO)
- Economy, society and politics in Himachal Pradesh
- Various concepts of Human rights, gender and environment and its practice in political context in India

English

In three year course of B. A. with English, students will

- Have improved proficiency in English language, effective writing skills, develops the habit of effective reading,
- Have enriched active and passive vocabulary.
- Use grammar, punctuation and spelling in formal technical writing.
- Have confidence in handling English language.
- Improved ability to read and spell words through an analysis of structure of the English language.
- Knows the strategies of each genre, i.e., personal essays, articles, fiction, poetry, and drama.
- Have broad understanding of the diversity of the human experience influenced by geographical location such as ethnicity, culture, traditions, gender
- Evaluate and use different kinds of historical sources to make a coherent argument about the past.
- Can develop phonemic awareness, self expressions and memorization skills.
- Can analyze the various elements of poetry such as Fiction, Tone, Form, Genres, Imagery, Figures of Speech, Symbolism, Theme, etc., forms and genres of poetry such as Sonnets, Ballads, Dramatic Monologues, Free Verse, etc.

HINDI

In three year course of B. A. with Hindi, students
- Develop skills in Hindi communication, creative writing, analytical skills through the interpretation of essays, stories, one act play, etc
- Can be good speaker, by having good communication skills and command over language
- Students can work anywhere in India, with proficiency in Hindi. Also, in many other countries, Hindi is used as an Official Language or second Language. So they can easily be employed easily in those countries.
- Can become Translators in many Central Govt Offices.
- They can become creative writers or poets or authors. By Reading and observing Drama's and one act plays they can become good actors.
- Know the importance of values through the reading of literature.
- Can address the social issues through literature and language.

- ➢ Focus on research skills through seminars and projects
- ➢ Develop emotional quotient through essays, stories, one act play, sketch, reports, memories, caricature etc.

SANSKRIT

- ➢ Students graduating in this course have understanding of the linguistic features and literary aspects of Sanskrit language. Student will have increased ability to read and Sanskrit texts independently and analyze texts written in classical Sanskrit.
- ➢ Students will understand the moral and social values in ancient Sanskrit literature.
- ➢ This program will help students acquire understanding of classical literature, Philosophy, religion, history and culture through Sanskrit texts. .
- ➢ They will acquire the ability to apply theoretical perspectives in ancient Indian religion, literature, history even ancient
- ➢ They are capable of demonstrating comprehensive knowledge and understanding of one or more disciplines that form a part of Sanskrit study.
- ➢ Critically evaluate practices, policies and theories by following scientific knowledge and wisdom gained from Sanskrit language and literature studied during graduation.