DEPARTMENT OF BENGALI

PROGRAMME SPECIFIC OUTCOME

- Knowledge and understanding of basic Bengali Literature.
- Knowledge and understanding of Bengali Grammar and Linguistics
- Knowledge and understanding of essential Bengali vocabulary.
- Knowledge and understanding History of Bengali Literature
- Knowledge and understanding basic idea of Poetry, Short Story, Essay, Drama & Novel.

COURSE OUTCOME

- **History of Bengali Literature (1601 1950)**

  1. To make students interested in Bengali Society, culture, literature and history of the Bengali people.
  2. To create a sense of history and historical analysis about Literature among the students.

  3. To make students aware about basic textual nuances of Medieval and Modern Bengali Literature.

  4. To make students aware about the evolution of the history of Bengali Literature and Culture.
  5. To give the idea of the inextricable interconnection between Literature and Culture.
  6. To create a strong foundation of studying future course of literature
  7.Studying History of Bengali Literature helps students to know about Religion, Society, Culture and development of the Bengali Literature use in the Prose , poetry , drama , short story and novel . Our vision is to see our won literature, manifestation of our nationality transformation of content, form and style of writing technique through ages and indication of future direction in literature.
- **Origin of Bengali Language**

  Study of origin of Bengali language is the most important. Students will understand Bengali language in an historical context and they will learn how Bengali language origin from Indo-European or Aryan Family of Languages and changed over time and how it varies from situation to situation and place to place. Study of Origin of Bengali Language will also help in making the foundation of language stranger and will improve the practical and intellectual skills.

- **Rhetoric and Prosody**

  1. To make students aware about the importance of Rhetoric and Prosody while studying poetry.
  2. To give practical lesions of Rhetoric and Prosody to students.

3. To prepare students about the ornamental use of language in constructing sentences while speaking and writing.
4. Introducing the foundation of Prosody along with the basic knowledge of Linguistics.
5. Introduce to the students about the aesthetics of language while studying Prosody.
6. To make students aware about Indian idea of Rhetoric and Prosody.

- **Chandimangal**

  To make students interested in Socio- Economic and cultural history of medieval period of Bengal.

- **Forms and features of Novel**
  Introducing and analysis a novel is a relatively long work of narrative fiction in prose.

- **Study of Linguistics**
  Student will be familiar with the aspect of the Bengali language-including sounds, words, sentences and meaning. Students will understand Bengali language in an historical context and they will learn how Bengali language changed over time and how it varies from situation to situation and place to place. Study of Linguistics will also help in making the foundation of language stranger and will improve the practical and intellectual skills.

- **Vaishnava Padavali & Shakta Padavali**
  1. To give basic ideas about the Vaishnava Padavali & Shakta Padavali on Medieval Period to the students.
  2. To make students aware about Vaishnava and Shakta Religion and Philosophy.
  3. To give basic ideas about Religious Literature and Social values of this form of literature.

- **Bengali (General)**
  Through this curriculum students learn to translate fro English to Bengali and contrarily from Bengali to English. Moreover they acquire skill in proof-reading, formal letter-writing, reporting or various affairs etc. Exercise of all these methods will help students in getting jobs as translator, professional Proof-reader or Reporter in News agencies and thus the course of study is building proficiency required for getting employed in different field.

DEPARTMENT OF CHEMISTRY

PROGRAMME SPECIFIC OUTCOME

Chemistry is not just a subject to study. It is the subject which is related to everything that is happening in nature in each moment. Chemistry sees the world at the molecular level. It is fascinating to imagine that in every second thousands of reactions occurring in our surroundings as well as within our body too. Chemistry allows us to understand the working process of the nature, properties of elements, substances and the physical and chemical changes they undergo. From medieval alchemy to modern chemistry, through a huge development, chemistry takes the lead of scientific researches regarding environment, energy production, pharmaceuticals, agriculture and so many important fields.

Programme Specific Outcome

1. A comprehensive understanding of the core content included in three branches of chemistry – Organic, Inorganic and Physical Chemistry will help the students to analyze the physical and chemical processes occurring in the surroundings.
2. Chemistry Honours students are able to recognize and apply the principles of atomic and molecular structure to predict chemical properties and chemical reactivity.
3. Students will be able to employ their critical thinking and scientific inquiry in the performance, design, interpretation, documentation of laboratory experiments which will make them suitable for industrial jobs.
4. Knowledge of analytical chemistry will prepare them for quantitative laboratory work which is highly recommended for chemical industries.
5. The theoretical knowledge of instruments that are commonly used in most chemistry fields will be helpful to the students for higher studies, research work or in industrial jobs for proper handling and data interpretation.
6. Proper understanding and knowledge of the subject will be helpful for the student in teaching profession, higher studies, lab work in chemical industries and research work.

COURSE OUTCOME

1. Atomic structure, Chemical Periodicity will introduce the atoms, orbital and properties of atoms to the students which are the most basic and fundamental part of chemistry.
2. Detailed discussion about the elements of periodic table and their properties will be covered in Group Chemistry including transition elements, lanthanides and actinides.
3. Students will learn about the molecules formed by the atoms, their formation, shape, properties through Chemical bonding including VBT, MOT.

4. Fundamentals of Organic Chemistry will help the students to get a clear idea about the formations of organic molecules, their nature and properties and the factors which influences the reactions.
5. Detailed study of the reagents, reaction intermediates, reaction mechanism pathways – SN1, SN2, SNi, E1, E2, E1CB etc. will make the backbone of organic reaction and synthesis. Students will learn how to carry out a synthesis, prediction of reaction.
6. Knowledge of Chemistry of functional groups like carbonyl, nitrogenous functional group, various name reactions will be highly effective for organic synthesis.
7. Students will learn how to identify the molecules by the application of electromagnetic radiation from 'Molecular spectroscopy' and 'Spectroscopy of Organic molecules – UV, IR, H-NMR which will give a huge support to students in their project/research work in higher studies.
8. Students will be able to analyze the feasibility of any reaction, rate determination , energetic, reaction mechanism determination through Chemical Thermodynamics and Chemical kinetics.
9. Clear concept of Stereochemistry will help the students to deal with crystals, drugs, Biomolecules, polymers and organic syntheses.
10. Provide a background necessary in dealing with different types of Physicochemical phenomena through conventional theoretical approaches, statistical or quantum mechanical formulations.
11. Acid-Base chemistry, Redox reactions will lead the way to maintain a proper way of reaction and to explain or justify any reaction's behaviour in different reaction environment.
12. Students will be introduced to the vast world of d-block elements complex compounds, their properties, utilities, their reactions, their uses as catalysts through Co-ordination chemistry and Organometallic chemistry.
13. Carbohydrate chemistry, Protein-amino acids, bio-inorganic chemistry, bio-physical chemistry links chemistry with the biological world and that knowledge will help students to understand how does the nature works.

SCOPES OF CHEMISTRY

After B.Sc in Chemistry (Hons.) door of so many opportunities will be opened for the students. For a better future in the field of chemistry or for many job requirements M.Sc is highly recommended. Some of the opportunities are -

- Higher Studies–M.Sc in Chemistry in Universities with specialization in any branch of chemistry
- Integrated M.Sc-Ph.D courses/ M.Sc from IIT after graduation by qualifying JAM
- Research/Ph.D after qualifying NET
- Teaching Profession (in Schools/Colleges/Universities - according to required qualification)
- After M.Sc, Ph.D in IITs after qualifying GATE
- Job in ONGC (Oil and Natural Gas Commission) after qualifying GATE
- Jobs at ISRO, BARC

- Job opportunities in Chemical industries, Polymer industries, petroleum industries, Paint industries, Pharmaceutical companies, Cosmetics and Perfume industry etc.
- Employment in Chemical laboratories, Clinical Laboratories, Health care industries
- Quality controller
- Analytical chemist
- Forensic Department
- Water treatment plant
- Food and beverage companies
- Environment and pollution control firms
- Various Govt. jobs after graduation
- Private firms like Dabur, Patanjali, Hindustan Unilever etc.

DEPARTMENT OF COMMERCE

PROGRAMME SPECIFIC OUTCOME

- **B.Com (Honours Course)**

1. Students will learn relevant financial accounting career skills, applying both quantitative and qualitative knowledge to their future careers in business.

2. Students will gain thorough systematic and subject skills within various disciplines of commerce, Business, accounting, economics, finance, auditing and marketing.

3. Students will acquire the skills like effective communication, decision making, problem solving in day to day business affairs.

4. Students can acquire practical skills to work as tax consultant, audit assistant and other financial supporting services.

5. Students will be able to do higher education and advance research in the field of commerce and Finance.

6. Students will involve in various co-curricular activities of demonstrate relevancy of theoretical Knowledge of their academic major and to gain practical exposure.
7. Students will be able to prove proficiency with the ability to engage in competitive exams like CA, CS, ICWA and other courses.

COURSE OUTCOME

B.Com (Honours Course)

- Financial Accounting

  Financial Accounting will help students to obtain an understanding of practical aspects of accounting including in the areas of branch, hire-purchase, joint ventures, consignments and many others.

- Business Law

  This paper will provide an insight into some major laws relevant for operating businesses within Indian Commercial Framework.

- Microeconomics

Students will learn the price mechanism and the behaviors of consumers and producers under conditions of extremism. Students will be able to identify the cases where market outcome will be inefficient like monopoly, monopolistic competition and oligopoly.

- Management Principles and Applications

  This paper is aimed to provide an idea of how the basic principles of management are applied in the real business scenario in order to achieve a successful business environment within the organization.

- Corporate Law

  Corporate Law governs all the registered companies operating in India and will help commerce students to understand the legal requirements applicable to a company operating in India.

- Macroeconomics

  Students will be able to understand the short-run fluctuations and the long-run growth trend of the overall economy and the dynamic behavior of exchange rate and movement of interest rate.

- Human Resource Management

  This paper gives an overall idea about how human resource is obtained, developed and maintain inside an organization in order to achieve the organizational goal with highest job satisfaction.

- Income Tax laws and Practices

  Students will learn the direct tax codes applicable to individuals as well as firms, companies etc and understand how taxation laws are applied.

- Corporate Accounting

  This paper aims to provide an insight into techniques of business decision-making in the areas of valuation, amalgamation, holding-subsidiary etc.

- Business Statistics

  This paper demonstrates the collection and presentation of business data and the descriptive and inferential analysis of the quantitative data with the analysis of the significance level.

- Entrepreneurship

This paper will provide an understanding of the basic principles of entrepreneurship, classifications of enterprise and utilization of business resources.

- Cost Accounting

  This paper is aimed to help the students assist in understanding the approaches of determining costs of product and services and analysis of the elements of cost.

- Business Mathematics

  Students will learn the theoretical aspects of matrix, determinants, calculus, linear programming and the applications thereof.

- Principles of Marketing

  Students will learn how products and services are marketed and various strategies, considerations, distribution channels related to marketing.

- Indian Economy

  Students will learn the macro aspects of Indian Economy regarding basic issues and concepts of growth, development, structural changes and policy applications.

- E-Commerce

  Students will have an understanding of how information-technology is used to market products and services and security systems applied over it.

- Computer Applications in Business

  Students will understand the some computer softwares used in day-to-day business operations including MS Office.

- Fundamentals of Financial Management

  Students will learn various methods of making financial decisions in the areas of investment, financing, dividend and working capital.

- Banking and Insurance/Advertising

  Students will have the choice of either learning the system of banking and insurance or techniques of advertising products and supplies.

- Management Accounting/Industrial Relations and Labour Laws

Management Accounting will help students to understand the how quantitative information leads to management decision-making. Industrial Relations and Labour Laws will provide an idea of trade unions, collective bargaining and various laws relating to labour management.

- Auditing and Corporate Governance

  Students will learn the procedures, principles and techniques of auditing and get an overview of Corporate Governance and Corporate Social Responsibilities.

- Goods and Services Tax and Customs Duty

  Students will newest indirect tax laws and tax implications of cross-border transactions.

- Computerised Accounting and Systems/Fundamentals of Investment

  Students will have the option of either enhancing the skills required for computerized accounting systems or familiarize with the different investment alternatives including their framework and valuation.

- Financial Markets, Institutions and Financial Services/Business Research Methods and Project Work

  Students have the choice of have either the basic knowledge of financial markets, institutions and major financial services in India or general knowledge regarding various methodologies of business research.

DEPARTMENT OF ECONOMICS
PROGRAMME SPECIFIC OUTCOME

1. Identify the role of supply and demand.
2. Identify the necessary conditions for market economies to functions well.
3. Discuss the advantages of market system and pricing.
4. Understanding of the role of government policy and Federal Reserve for the economy.
5. Using of algebraic and statistical method to analyze economic problems.
6. Using different growth models for the economic development and growth of a country.
7. Identify the benefits and cost of International Relations to trade with other countries.
8. Identify the importance of taxes for a development of a country.
9. Internalize the cost and benefit of economic activity for the environment.
10. Understanding the importance of money and banking system for a country.
11. Importance of different of govt. policies started for the benefit of citizen in India.

COURSE OUTCOME

Introductory Microeconomics

Upon successful completion of the course a student will be able to

1. Understand how households (demand) and businesses (supply) interact in various market structures to determine price and quantity of a good produced.
2. Understand the linkages between economic models of demand and household behavior.
3. Understand the concept of demand, the downward slope of demand, what are the reasons of its shifting.
4. Understand the concept of supply, the upward slope of supply, what are the reasons of its shifting.
5. Understand the linkages between the economic models of supply and production costs.
6. Understand the importance of marginal cost and marginal revenue for a firm profitability.
7. Understand the different types of market, and how its affect price and output in the economy.
8. Understand the different characteristics of market and its implications for the firm behavior.

Introductory Macroeconomics

Upon successful completion of the course a student will be able to

1. Understand the factors determining the gross domestic product.

2. Understand how the aggregate demand for goods and services depends on household, business, government and global behavior.
3. Understand how the aggregate supply and aggregate demand interact to drive a free market economy.
4. Understand the importance of market economy, including govt. policies.
5. Understand the concept of national income.
6. Understand the concept of closed and open economy of an economy.
7. Understand the importance of business cycles.
8. How fiscal and monetary policy control inflation and recession in an economy.
9. How domestic economy interacts with the rest of the world.

Intermediate Microeconomics

Upon successful completion of the course a student will be able to

1. How to make decisions by using marginal analysis and opportunity cost.
2. How to use supply and demand for determining changes in market equilibrium.
3. Understand the meaning of perfect competition in the market, and help us to understand how equilibrium price and output is attained in this type of market.
4. How to reach equilibrium prices and output in imperfect competition (e.g. monopoly, monopolistic competition, and oligopoly).
5. It will help us to understand the concept of market failure, how to use supply and demand concept to eliminate this types of market failure.
6. How to use comparative static analysis, producer and consumer welfare, govt. intervention by using price ceiling and price floor.
7. Understand the importance and consequences of general equilibrium and welfare economics (Pareto Optimality).

Intermediate Macroeconomics

Upon successful completion of the course a student will be able to

1. Understand the importance of using consumption function and investment function to achieve long term growth.
2. Understand the importance of classical economist on the nature and causes of the wealth of nations.
3. Help us to understand the difference of classical and Keynesian approaches in the context of macroeconomics.
4. Importance of how goods market (IS curve) and money market (LM curve) equilibrium can be achieved.
5. Importance of effective demand to determine equilibrium in an economy.
6. Understand the importance of international trade, international finance, and exchange rate for an economy.

7. Understand the concept of multiplier, how different types of multiplier affect investment, employment, foreign trade.
8. Effectiveness of monetary and fiscal policies to affect gross domestic product.

Mathematical Economics

Upon successful completion of the course a student will be able to

1. Understand the connections between diagrammatic models and their mathematical structures using calculus and algebra.
2. Understand how to use game theories to solve problems.
3. Develop numerical examples to explain variety of theoretical result.
4. How to use maxima and minima concept to solve problems like cost minimization, output maximization, and profit maximization for a firm.

Statistical Methods

Upon successful completion of the course a student will be able to

1. How to use different types data to make problems simple.
2. Help us to understand the features of describe distribution data.
3. Help us to find single, complementary events, union and collections of events.
4. How to calculate mean and variance of random variable.
5. Help us to understand the cases where we can use Binomial, Poisson and Normal distribution.
6. Help us to understand the importance of standard deviation, correlation and regression in real world.
7. Help us to understand how to use point and interval estimation.

Development Economics

Upon successful completion of the course a student will be able to

1. Identify and analyze the key economic development theories affecting a number of development issues such as trade, economic growth etc.
2. Understand the importance of sustainable development for a country.
3. Critically examine the linkages between various development theories and its approaches.
4. Review the policy implications of different economic development theories.
5. Critically understand how the economic development theories affect the macro development policies in a country.

6. Determine and apply specialist knowledge and technical skills required to solve problems creatively.
7. Understand how the different growth theories help to maximize the growth rate of a country in the global context.
8. How the factors like poverty, capital formation, population growth, agriculture affects the development of a country.

International Economics

Upon successful completion of the course a student will be able to

1. Understand the various reasons for why a country is engaged in international trade.
2. How to use models of trade to demonstrate the gains from exchange due to trade with foreign nations.
3. Understand how the international factor mobility affects an economy.
4. Understand how tariffs and import quotas affect the international trade of a country
5. Understand the key role of different international institutions to conduct trade across the world.
6. Understanding the different methods and concepts used by a country to keep track of international transactions.
7. Understand the role of exchange rate, and how they are determined under short run and long run.
8. Understand how the various policies may affect the exchange rate and welfare of a country.
9. Understanding how different exchange rate regime works such as gold standard, fixed and floating exchange rate mechanisms.
10. Understand the working of different international institutions with regard to rate of exchange and the flow of international assets.

Money and Banking

Upon successful completion of the course a student will be able to

1. Understand the importance of financial sector to use the scarce resource effectively and efficiently.
2. Understand the various determinants of exchange rate.
3. Understand the concept of term structure of interest rates.
4. Understand how the interest rate affected by changes in monetary policy.
5. How interest rates affected by inflation.
6. Understand the various concept of yield of return.
7. Understand the various ways to hedge risk.
8. Understand how the fiscal and monetary policy affects the financial system of a country.

9. Understand the various money market and capital market instruments. Understand the components of balance of payments, factors affecting currency exchange rates.

Indian Economy

Upon successful completion of the course a student will be able to

1. Understand the nature economic development since independence.
2. Understand the issues of land reforms, and their impact on Indian agriculture.
3. Understand the importance of Green Revolution and their impact on the context of Indian agriculture.
4. Understand the major issues in Indian industry and their impact on the development of Indian industry.
5. Understand the importance of Monetary and Fiscal policies for structural transformation of the Indian Economy.
6. Importance of different trade policies, Special economic zone, Foreign investment inflows through FII and FDI.

Public Economics

Upon successful completion of the course a student will be able to

1. How to apply microeconomic theories to public decision making.
2. Understand the importance of direct and indirect tax system for a country.
3. Understand the concept of public expenditure, and its importance for the country.
4. Understand the importance of public budget for a country.

Indian Political Economy

Upon successful completion of the course a student will be able to

1. It will help us to understand how it is possible to adopt a policy by politicians when majority of voters are against of the policy.
2. Understand the historical and logical implications of different property regimes.
3. Understand the changing role of finance in capital accumulation.
4. Explain financialisation, financial liberalization, financial crisis.
5. Understand the impact of globalization and its impact on welfare state, development, and state autonomy.
6. Understand the issues in environment and sustainability.

DEPARTMENT OF EDUCATION

PROGRAMME SPECIFIC OUTCOME

Potential Powers of Education

For every society and individual persons Education is most essential in all aspects. Education itself is life but not a preparation for life. Man has various qualities in it. These qualities of the potential should be developed for the improvement of the motherland. So education plays a balancing role for overall individual, social and national development. It enables to realize his highest self and goal. The key functions and roles of education towards individual, society and country are listed below.

Development of inborn potentialities

Education helps the child to develop the inborn potentialities of child providing scope to develop.

Changing behaviour

Education helps to change the past behaviour through learning and through different activities of education.

Versatile development

The main Aims of Education is to developed child-physical, mental, social, emotional, and spiritual, and to make them physically strong enough as well as mentally.

Future of education

The child can earn its livelihood after getting proper education on completion of education. The education should be motivated according to the own interest of the child.

Developing behaviour

Through education the behaviour of the child is developed physically, intellectually, morally, socially, aesthetically and spiritually. The personality of the child is recognized in the society.

Adjustment

Man tries his best to adjust with his own environment through education. Thinking power could be changed with the help of education.

Social Change & Control

The child lives in a society where the personality of the child can be established. Old traditions, rituals, customs, superstitions are conserved and conveyed with the situations, which will ever change. Whereas, with the help of education, we can smoothly walk with the development of science and technology. It helps us to identify the actual position of life.

Education towards Nation

Education plays a vital role in the development of a country. It helps in the advancement of technologies and growth of a nation. Educated citizen of a country brings pride, wealth, peace and prosperity to the country which helps in expansion of a democratic country. It also helps in nation building. Educated peoples are aware of what is right and what is wrong for their nation and society. If the people of one nation are not educated then people of another nation will do any kind of business with them and it will lead to loss of the nation.

Up-gradation of Education system

Our old Traditional education in India has been transformed into digital education means in many schools and educational institutes in India. There are so many benefits for the students to understand in this system of education such as Virtual classrooms, e-lectures, web conferencing and online courses are a part of digital learning. Government of India also promoting Digital education system for the betterment of future generations to cope with the digital world.

COURSE OUTCOME

Philosophical foundation of Education

At the end of this course the student will able to

1. To develop an understanding of the meaning, aim, and functions of education
2. To develop an understanding of the role of Philosophy.
3. To understand relation between Philosophy and Education
4. To know the attempts of some great educators for the evolution of sound Philosophy of education and a better understanding of the process of education.

Education Psychology

At the end of this course the student will able to

1. To enable the student of understand the meaning and scope of educational psychology.

2. To be familiar between the relation between Psychology and education.
3. To understand the meaning of development, Stage of development with special stress on education for social , physical, emotional and intellectual.
4. To develop understanding process of learning and teaching and problem of learning.
5. To know various theories of learning.
6. To be aware the role of the school, the teacher and the environment for the growth of child.
7. To know the concept of Intelligence, theories of Intelligence, and measurement of intelligence.
8. To realize different aspects of personality and means of learning.

Sociological Foundation of Education

At the end of this course the student will able to

1. To learn Nature and scope of Educational Sociology.
2. Need for Sociological approach in education.
3. Outline structure and functions of the society and the process of social interaction for a change towards better human relationships.
4. To understand the Social structure and their impact on education.
5. Identity the contribution different social theories of education.
6. To understand Democratic Principles of Education, Define democracy.
7. To know the Principles of Education for International understanding.

Curriculum Studies of Education

At the end of this course the student will able to

1. Become acquainted with the meaning concept and types of Curriculum.
2. To enable the student to develop an understanding about important principles of Curriculum construction.
3. To know the bases and determinates of curriculum.

Comparative Education

At the end of this course the student will able to

1. Appreciate to understand comparative education as an emerging discipline of education.
2. To create a perspective in the students about the implications of education for solving the prevailing problems of education in India.

Educational Technology

At the end of this course the student will able to

1. Escalate the students to understand about the meaning, Nature, Scope and significant of educational technology and its important components in terms of hardware and software.
2. To help the student to distinguish between communication and instruction so that they can develop and design sound instructional system.

Development of Education in India

At the end of this course the student will able to

1. To help the students to understand the development of education in Indian historical perspective.
2. To outline the salient features of education in ancient, medieval and British India.
3. To have an adequate knowledge of the recommendations of various commissions and committees on Indian Education.

Educational Evaluation and statistics in Education

At the end of this course the student will able to

1. To comprehend the concepts of measurement and evaluation in the field of education.
2. To acquaint with different types of measuring instruments and their uses.
3. To develop the ability to organize relevant educational data.
4. To understand the ability to use various statistical measures in analysis and interpretation of education data.

Educational Guidance and Counseling program

At the end of this course the student will able to

1. To differentiate the meaning and importance of guidance and counseling.
2. To study the ability of identity quoted children who need enrichment and to counseling their unique potentialities.
3. To develop the ability of identify exceptional children who need special care and help to make such provisions for them.
4. To learn the quality of an ideal counseling.

Educational Management and Administration

At the end of this course the student will able to

1. Learn the concept of School Organization
2. To develop idea of School inspection
3. To be aware about the modern aspects of school organization.

DEPARTMENT OF ENGLISH

PROGRAM SPECIFIC OUTCOME

English Literature courses in the Department of English expose students to a wide range of writing from British, American and Anglophone traditions. It helps students explore how writers use the creative resources of language-in fiction, poetry, nonfiction prose, and drama-to explore the entire range of human experience. Students are expected to strive, to be imaginative, rhetorically dexterous, and technically proficient and as a result, to gain a deeper insight into life. With the introduction of new syllabus under CBCS from this year, which promotes a new thematic frame work where classical Indian Bhasa literature share space with contemporary literary crosscurrents, UG syllabus at Surya Sen Mahavidyalaya will help students build skills of analytical and interpretive argument, and become careful and critical readers. Again, students' engagement with various strategies of drafting and revising, style of writing and analytical skills, diagnosing and developing scholarly methodologies, use of language as a means of creative expression, will make them effective thinkers and communicators — qualities which are crucial for choosing careers in our information-intensive society.

Specific learning outcomes for English courses include the following:

1. Reading: Students will gain awareness about the best literary traditions of the world. By learning how others live and handle their lives, one becomes connected with the world in a way we might not otherwise experience. They will discover that they are part of a huge conglomerate of human thought and emotion. All the great texts that a student of English honours will get chance to study will expand their range of experience. They can gain courage and strength by living vicariously through well-developed characters. Through reading students will have an awareness for varies perspectives. This will also expand their range of experience and in the process they will learn to be more empathetic toward the plights of others.

2. Literature, Nation and Tradition: The current syllabus in the UG level will provide students an opportunity to know India's age old literary and cultural tradition through their exposure to Sanskrit texts and modern Indian vernacular literature in translation. How reading literature in English can be an effective means to address the complex issues of identity, nationalism , historical tradition in Indian context, is a new focus area of the present course.

3. Awareness about Culture and History: Students gain an understanding of the relations between culture, history and texts. They learn to use texts as a gateway to various cultural traditions and interpret them in their historical contexts. How a literary text can appear as an ideal platform to locate dominant and marginalized voices of a society, is an important focus of the under-graduate literature progrmme.

4.Gaining of Critical Insight: An exposure to various social and cultural traditions and through the reading of representative texts from different periods help a student gain a critical insight about the reality as a whole. With the help of their Knowledge of various critical theories

it is expected that they will be able to construct their own meaning about the reality and his historical situatedness.

5. Issue of Sexuality and Gender: Literature course teaches a student to believe that one's own sense of identity is not enough to persuade the rest of the world to agree. Human beings are no longer bound by such binary concepts as male-female or masculine-feminine. They will learn that sex is a biological concept based on biological characteristics, whereas gender deals with personal, societal and cultural perceptions of sexuality. Appropriation of literary texts as tools of cultural study will help students to challenge centuries of social tradition and scientific belief which promote such and other types of differentiations.

Cross Fertilization with allied Arts:Students of English Honours should also be able to articulate the relations among culture, history, and texts—for example, ideological and political aspects of representation, economic processes of textual production, dissemination and reception, and cross-fertilization with other arts: architecture, sculpture, music, film, painting, dance, and theatre.

6.Acquisition of Values: Acquisition of values is needed for individual development and social transformation. English literature course at UG level, like any other literary course, helps a student to gain subjective experience of the text's aesthetic value. This helps in developing quality of thinking and imagination and is a step forward to emerge as a better human being. Through their judgment of the aesthetic value of a literary text students will learn to appreciate whatever is good and beautiful in life. Their healthy mind will thus be storehouse of healthy thoughts.

7. Writing skills and Process: Students will be able to recognize and comprehend different varieties of English language and develop a writing style of their own. English honours students should be aware also that textual analysis can be extended with profit to political, journalistic, commercial, technical, and web-based writing. It is expected that their exposure to the ideas of variety of writers and their cultural backgrounds, will have a bearing in their own literary styles. With the development of their writing skills and finesse of style there will be a possibility of them emerging as perspective writers, editors, content developers, teachers etc.

8.Means of Effective Communication: Study of literature is intertwined with the study of language . Learning various language patterns, sentence structures and dialogue forms can help one in real life in effectively communicating with others. English is the language of science, computers, diplomacy, and tourism. Knowing English increases students' chances of getting a good job in future.

COURSE OUTCOME

The Department of English of SSM seeks to foster the intellectual development of its students by encouraging study of literature and writing. The Department strives to make its pass and honours programme students familiar with a wide range of works of British writers in particular and World literature in general with a special focus on Indian writings in English. The issues of culture, history, gender, race, ethnicity, politics are addressed and negotiated in the process of imparting knowledge of English literature in its pluralistic forms , to help student develop a

critical mindset of their own .The Department wishes that each student who graduates with a BA Honours in English from SSM, will have an enduring interest in language and literature, an awareness of their historical and cultural legacies, knowledge of complexities of human existence, the political and social upheavals and its bearing on literature, an understanding of the ability of great literature to arouse and challenge people to struggle with insightful questions of human identity and values.

With the introduction of CBCS syllabus by the university of North Bengal, the Department of English, SSM is now offering two types of courses: (1) English Honours and Elective English courses in Part I+II+III mode , (2) CBCS Discipline Specific Core Course and Programme Course. While the first year students will follow CBCS courses, students promoted to second year will continue with the Part I+II+III pattern.

Course Outcome:

1. **History of Language, English Communication, Creative Writing etc. (CC1,AECC,SEC,LCC,P:1Old)**

   After Completion of this Course Students will be able to …

   i. Know the process of beginning and growth of English language
   ii. Know about various innovative ways of using English language in verbal and non-verbal communications.
   iii. Write clearly, effectively, and creatively, and adjust writing style appropriately to the content, the context, and nature of the subject.
   iv. Think about the relation between language and literature

2. **Classical Literatures (CC2,CC3,P:8 Old)**

After Completion of this Course Students will be able to …

   i. Read and understand about the rich classical texts from Greco-Roman literatures as well as Indian literatures written in Sanskrit, in translated versions.
   ii. Trace the nature of influence that all the classical texts have on modern English literatures both in British and Indian writings in English.
   iii. Appreciate these texts as a source of great wisdom.
   iv. Interpret these texts from contemporary points of view.

3. **British Literature (CC6,CC7,CC8,CC9,CC10,DSC p3,GE p2, P: 1-5 Old)**

After Completion of this Course Students will be able to …

   i. Trace the developmental history of English Literature from Old English Period to 19th century.
   ii. Show familiarity with major literary works by British writers in the field of Drama and Poetry.

iii. Be acquainted with major religious, political and social movements from 14th to 19th century and their influence on literature.
iv. Learn various interpretative techniques to approach literary texts of varied genres.

4. Women's Writing (CC11)

After Completion of this Course Students will be able to …

i. Learn how and on what grounds women's writings can be considered as a separate genre.
ii. Read and understand canonical texts written by Women writers across different ages.
iii. Differentiate between sex and gender and how the later is a social construction.
iv. Be aware about the issues and concerns of the women writers of the developed, developing and under-developed countries.

5. Modernism and beyond (CC12,CC13,P:6 Old)

After Completion of this Course Students will be able to …

i. Know about the meaning and scope of the concepts of the Modern/Modernity/Modernism.
ii. Study and interpret representative writings from the 20th and 21st century.
iii. Acquaint themselves with the great tradition of modern European drama
iv. Examine various literary techniques that writers of 20th century use in writing their texts, and demonstrate an understanding of these techniques.
v. Reflect upon the great upheaval that the world has undergone during 20th century and the constructive role of literary activism/movements in restoring humane values.

6. Literary Theory & Criticism (DSE 1,)

After Completion of this Course Students will be able to …

i. Learn the history of literary criticism and various literary theories.
ii. Apply critical and technical theory and vocabulary to describe and analyze, and formulate an argument about literary and other texts.
iii. Think about the non-fixity of meaning of literacy texts.
iv. Develop a skill in applying various literary theories in interpreting a specific text.

7. Post-colonial Experience (CC14)

After Completion of this Course Students will be able to …

i. Know how a literary text, explicitly or allegorically; represents various aspects of colonial oppression.

ii. Question how does a text reveal about the problematics of post-colonial identity.
iii. Learn how a text reveals about the politics and/or psychology of anti-colonialist resistance.
iv. Trace the history of post-colonial movements in India and its textual representations.
v. Locate and represent subaltern voices through their own writings.

8. Indian Literature (DSC3,DSC4,DSC6)

After Completion of this Course Students will be able to …

i. How and why Indian literature emerged as a distinct field of study.
ii. Trace the development of history of English literature from its beginning to the present day.
iii. Interpret the works of great writes of Indian writers in English.
iv. Demonstrate, through discussion and writing, an understanding of significant cultural and societal issues presented in Indian English literature.

9. Popular Literature (DSE2,DSE5)

After Completion of this Course Students will be able to …

i. Know the meaning of Popular Literature and its distinct characters.
ii. Read and understand some of the representative popular literary pieces.
iii. Understand how formulaic elements create the ideal world without limitations or uncertainties in readers' imagination.
iv. Probe into the literary and aesthetic merits of popular fictions.

B.A. PROGRAMME OUTCOME

Following are the expected Programme outcome of UG courses in the social science subjects at SSM.

[A] Critical Close Reading

An ability to read critically the prescribed texts and understand its broader implications.

This includes:

- Read closely in a variety of forms, styles, structures, and modes.
- Use of various interpretative techniques.

[B] Critical Thinking

An ability to think critically on various issues and subject matters and relate the same with real life situations.

This includes the ability to:

- Synthesize and integrate knowledge.
- Practice and develop argumentative skills.
- In-depth study of the subject matter.

[C] Integration of Knowledge:
Demonstrate detailed knowledge in one or more disciplines and the ability to integrate knowledge across disciplinary boundaries.

This includes the ability to:

- Study the current state of knowledge.
- Multi-disciplinary learning ability.
- Show familiarity with works from other disciplines.

[D] Communication Skill
Demonstrate the ability to extract and convey information accurately in a variety of formats.

This includes:

- An ability to adjust writing style appropriately to the content, the context, and nature of the subject.
- Ability to communicate ideas logically.
- Write clearly and effectively in a variety of forms, adapting writing and analytical skills to all situations

[E] Research Aptitude
Development of a spirit of critical and scholarly enquiry for the subject.

This includes:

- To identify and evaluate appropriate research sources,
- To incorporating the sources into documented academic writing,
- To formulate original arguments in response to those sources.
- To apply appropriate research methodologies to specific problems

[F] Role as a Global Citizen

A critical understanding about the ways of the world and realization of one's role within communities to effect change.

This includes the ability to:

- Demonstration of intercultural awareness.
- To understand the meaning of cultural globalization in true sense.
- Collaborate respectfully with others, individually and in teams.
- Maintain highest ethical standard in personal life.

DEPARTMENT OF GEOGRAPHY

PROGRAMME SPECIFIC OUTCOME

Geography Honours Course(CBCS and Part I+II+III System)

Geography mainly concerns changes in spatial attributes in a temporal perspective. The Honours programme in geography is tailored to meet the students' specific educational and professional goals in mind. It focuses on spatial studies, qualitative as well as quantitative, and emphasises on human-environment relationship. During the first year of the programme, the students are trained on advanced concepts of physical and human geography. The third year allows them to concentrate on specific areas of the subject, on which they complete their field reports. After completing the course, the students will be amply prepared for professional careers in geography and allied disciplines like GIS and Remote Sensing. They will also be able to pursue M.A. /M.Sc. Course in Geography.

PSO1.Acquireing Knowledge of Physical Geography:

Student will gain the knowledge of physical geography. Student will have a general understanding about the geomorphological and geotechnical process and formation. They will be able to correlate the knowledge of physical geography with the human geography.

PSO2.Acquireing Knowledge of Human Geography:

They will be able to acquire the knowledge of Human Geography and will correlate it with their practical life.

PSO3. Ability of Problem Analysis:

Student will be able to analyse the problems of physical as well as cultural environments of both rural and urban areas. Moreover they will try to find out the possible measures to solve those problems.

PSO4.Conduct Social Survey Project:

They will be eligible for conducting social survey project which is needed for measuring the status of development of a particular group or section of the society.

PSO5. Application of modern instruments:

Students will be able to learn the application of various modern instruments and by these they will be able to collect primary data.

PSO6. Application of GIS and modern Geographical Map Making Techniques:

They will learn how to prepare map based on GIS by using the modern geographical map making techniques.

PSO7. Development of Observation Power:

As a student of Geography Honours Course they will be capable to develop their observation power through field experience and in future they will be able to identify the socio-environmental problems of a locality.

PSO8. Development of Communication Skill and Interaction Power:

After the completion of the project they will be efficient in their communication skill as well as power of social interaction. Some of the students are being able to understand and write effective reports and design credentials, make effective demonstrations, and give and receive clear instructions.

PSO9.Enhancement of the ability of Management:

Demonstrate knowledge and understanding of the management principles and apply these to theirs own work, as a member and leader in a team, to manage projects. They will perform effectively as an individual, and as a member or leader in diverse teams, and in multidisciplinary settings.

PSO10. Understand Environmental Ethics and Sustainability:

Understand the impact of the acquired knowledge in societal and environmental contexts, and demonstrate the knowledge of need for sustainable development.

PSO11.Life-long learning:

Identify the need for, and have the preparation and ability to engage in independent and life-long learning in the broadest context of societal and environmental change.

CBCS

COURSE OUTCOMES (Cos) OF THE COURSE B.A HONOURS

GEOTECTONIC (GEO-H-DSC-1-01-TH, SEM-I)

CO1. Understand earth's tectonic and structural evolution.
CO2. Gain knowledge about earth's interior.
CO3. Develop an idea about concept of plate tectonics, and resultant landforms.
CO4. Acquire knowledge about types of folds and faults and earthquakes, volcanoes and associated landforms.

PRACTICALS (GEO-H-DSC-1-01-PR, SEM-I)

CO1. Develop an idea about scale and draw different types of scale like linear, diagonal and vernier.

CO2. Acquire knowledge different types of map projection.

GEOMORPHOLOGY (GEO-H-DSC-1-02-TH, SEM-I)

CO1. Develop an idea about geomorphology and different types of fundamental concepts.
CO2. Explain different types of geomorphic processes like weathering and mass wasting and cycle of erosion.
CO3. Understand the processes of erosion, deposition and resulting landforms.
CO4. Acquire knowledge about slope forms and processes.

PRACTICALS (GEO-H-DSC-1-02-PR, SEM-I)

CO1. Gain knowledge about topographical maps and apply this knowledge in ground surface.
CO2. Identification of different types of rock and minerals.

HUMAN GEOGRAPHY (GEO-H-DSC-2-03-TH, SEM-II)

CO1. Gain knowledge about major themes of human geography.
CO2. Develop an idea about space and society.
CO3. Build an idea about population growth and distribution of population.
CO4. . Know about population –resource relationship.

PRACTICALS (GEO-H-DSC-2-03-PR, SEM-II)

CO1. Know about diagrammatic data presentation like line, bar and circle.
CO2. Develop an idea about different types of thematic mapping techniques.

SETTLEMENT GEOGRAPHY (GEO-H-DSC-2-04-TH, SEM-II)

CO1. Build an idea about urban and rural settlements, and its relationship with environment and also different theories related to settlement geography.
CO2. Know about classification and morphology of settlements.
CO3. Understand the trends and patterns of world urbanization.
CO4. Know about different theories of urban growth.

PRACTICALS (GEO-H-DSC-2-04-PR, SEM-II)

CO1. Brings direct interaction of different types of surveying instruments like Dumpy level and Theodolite with environment.
CO2. Develop an idea about different types of thematic mapping techniques.

CLIMATOLOGY (GEO-H-DSC-3-05-TH, SEM-III)

CO1. Learn the interaction between the atmosphere and the earth’s surface.
CO2. Understand the importance of the atmospheric pressure and winds.
CO3. Understand how atmospheric moisture works.

CO4. Develop an idea about cyclones.

PRACTICALS (GEO-H-DSC-3-05-PR, SEM-III)

CO1. Learn to use of various meteorological instruments.
CO2. Gain knowledge about Indian daily weather report.

STATISTICAL METHODS IN GEOGRAPHY (GEO-H-DSC-3-06-TH, SEM-III)

CO1. Learn the significance of statistics in geography.
CO2. Understand the importance of use of data in geography
CO3. Know about different types of sampling.
CO4. Develop an idea about theoretical distribution.

PRACTICALS (GEO-H-DSC-3-06-PR, SEM-III)

CO1. Learn to use tabulation of data.
CO2. Gain knowledge about association and correlation.

GEOGRAPHY OF INDIA (GEO-H-DSC-3-07-TH, SEM-III)

CO1. They can know about their own countries land formation, climate and natural vegetation.
CO2. They understand the economic resources of India.
CO3. They understand the social distribution of population of their country.
CO4. Develop an idea about regionalisation of India.

PRACTICALS (GEO-H-DSC-3-07-PR, SEM-III)

CO1. Learn to draw monthly temperature and rainfall graphs.
CO2. Gain knowledge about measuring arithmetic growth rate of population and also measures of inequality.

REMOTE SENSING (GEO-SEC-A-3-01-TH, SEM-III)

CO1. They can know about remote sensing.
CO2. They understand the satellite remote sensing
CO3. They understand the image processing.
CO4. Develop an idea about satellite image interpretation.

RURAL DEVELOPMENT (GEO-SEC-A-3-01-TH, SEM-III)

CO1. They can know about concept, basic elements, and measures of level of rural development.
CO2. They understand the paradigms of rural development.
CO3. They understand the area based approach to rural development.

CO4. Develop an idea about target group approach to rural development.
CO5. Gain knowledge about rural governance.

ECONOMIC GEOGRAPHY (GEO-H-DSC-4-08-TH, SEM-IV)

CO1. Understand the concept of economic activity, factors affecting location of economic activity.
CO2. Gain knowledge about different types of primary activities.
CO3. Develop an idea about different types of secondary activities.
CO4. Acquire knowledge about different types of tertiary activities.

PRACTICALS (GEO-H-DSC-4-08-PR, SEM-IV)

CO1. They can know about transport network analysis.
CO2. Gain knowledge about representation of state wise variation in occupational structure and work participation rate using proportional circles and proportional divided circles and also composite index.

REGIONAL PLANNING AND DEVELOPMENT (GEO-H-DSC-4-09-TH, SEM-IV)

CO1. Gain knowledge about definition of region, evolution and types of regional planning.
CO2. Develop an idea about choice of a region for planning.
CO3. Build an idea about theories and models for regional planning.
CO4. . Know about measuring development indicators.

PRACTICALS (GEO-H-DSC-4-09-PR, SEM-IV)

CO1. They can know about delineation of formal regions by weighted index method and also delineation of functional regions by breaking point analysis.
CO2. Gain knowledge about measuring inequality by Location Quotient, and also measuring regional disparity by Sopher Index.

FIELD WORK & RESEARCH METHODOLOGY (GEO-H-DSC-4-10-TH, SEM-IV)

CO1. Learn the significance of field work in geographical studies.
CO2. Understand the meaning of field and identifying the case study.
CO3. Know about different types of field techniques.
CO4. Develop an idea about research problems.

GEOGRAPHICAL INFORMATION SYSTEM (GEO-SEC-A-4-02-TH, SEM-IV)

CO1. They can know about concept and components of Geographical Information System.
CO2. They understand the Global Positioning System.

CO3. They understand the GIS Data Structures.
CO4. Develop an idea about GIS Data Analysis.
CO5. Know about application of GIS.

TOURISM MANAGEMENT (GEO-SEC-A-4-02-TH, SEM-IV)

CO1. They can know about concepts, nature and scope, inter-relationships of tourism, recreation and leisure.
CO2. They understand about types of tourism.
CO3. Know about recent trends of tourism.
CO4. Develop an idea about tourism in India.
CO5. Know about National Tourism Policy.

ENVIRONMENTAL GEOGRAPHY (GEO-H-DSC-5-11-TH, SEM-V)

CO1. Gain knowledge about concept, scope of environmental geography and components of environment.
CO2. Develop an idea about human-environment relationships.
CO3. Build an idea about ecosystem.
CO4. Know about environmental programmes and policies.

PRACTICALS (GEO-H-DSC-5-11-PR, SEM-V)

CO1. They can know how prepare a questionnaire on the basis of perception survey on environmental problems.
CO2. Gain knowledge about doing project on environmental problems of North Bengal.

REMOTE SENSING AND GIS (GEO-H-DSC-5-12-TH, SEM-V)

CO1. They can know about concepts, components, development, platforms and types of remote sensing and GIS.
CO2. They understand about Aerial photography and Satellite Remote Sensing.
CO3. Know about GIS data structures.
CO4. Develop an idea about interpretation and application of remote sensing and GIS.

PRACTICALS (GEO-H-DSC-5-12-PR, SEM-V)

CO1. They can know about the interpretation of Air photographs and Satellite imagery.
CO2. Gain knowledge about image processing, classification of georeferencing, editing and output, overlays.

EVOLUTION OF GEOGRAPHICAL THOUGHTS (GEO-H-DSC-6-13-TH, SEM-VI)

CO1. Gain knowledge about development of geographical thought.

CO2. Develop an idea about evolution of geographical thinking and disciplinary trends in Germany, France, Britain, and United States of America.
CO3. Build an idea about between environmental determinism and possibillism, systematic and regional.
CO4. Know about the trends of geographical thoughts.

PRACTICALS (GEO-H-DSC-6-13-PR, SEM-VI)

CO1. They can know about the quantitative techniques in geography.
CO2. Gain knowledge about crop combination by Weber, Rafiulla and Doi.

DISASTER MANAGEMENT (GEO-H-DSC-6-14-TH, SEM-VI)

CO1. Understand the definition, classification of hazards and disasters
CO2. Gain knowledge about approaches to hazard study.
CO3. Develop an idea about factors, consequences and management of earthquake, landslide, flood and riverbank erosion.
CO4. Acquire knowledge about human induced disaster.

PRACTICALS (GEO-H-DSC-6-14-PR, SEM-VI)

CO1. They have to know how prepare a project report based on any one field based case study on flood, landslide, earthquake and human induced disaster.

(I+I+I) EXAMINATION SYSTEM
COURSE OUTCOMES (Cos) OF THE COURSE B.A HONOURS GEOGRAPHY
PART I
PHYSICAL GEOGRAPHY

CO1. Understand different theories of the earth.
CO2. Develop history of geomorphic ideas of different schools.
CO3. Gain knowledge about earth's interior.
CO4. Develop an idea about concept of earth's movements and related topography.
CO5. Acquire knowledge about different process of denudation.

PHYSICAL GEOGRAPHY

CO1. Understand the processes of erosion, deposition and resulting landforms.
CO2. Explain the development of drainage system in uniclinal and folded structure.
CO3. Understand concept of normal cycle of erosion and its interruption.
CO4. Develop an idea about types of coastal landforms.
CO5. Acquire knowledge about hydrology.

GEOGRAPHY OF RESOURCES

CO1. Develop an idea about resource.
CO2. Understand the concept of different types of resources.
CO3. Acquire knowledge about different types of power resources.
CO4. Explain population - resource relationship and different types of population resources.

PRACTICAL

CO1. Develop an idea about scale and draw different types of scale like linear, diagonal and vernier.
CO2. Acquire knowledge different types of map projection.
CO3. Gain knowledge about topographical maps and apply this knowledge in ground serface.
CO4. Learn the use of various minor instruments like rotameter, Planimeter and Pantrograph.

COURSE OUTCOMES (Cos) OF THE COURSE B.A HONOURS GEOGRAPHY PART II

GEOGRAPHY OF ECONOMIC ACTIVITIES

CO1. Understand different types of economics activities.
CO2. Indentify farming in humid tropics.
CO3. Know about the various industrial occupations.

POPULATION GEOGRAPHY

CO1. Gain knowledge different aspects of population geography.
CO2. Develop an idea about the concept of Migration.

SETTLEMENT & POLITICAL GEOGRAPHY

CO1. Build an idea about urban and rural settlements, and its relationship with environment and also different theories related to settlement geography.

CO2. Know about political geography.

PRACTICAL

CO1. Brings direct interaction of different types of surveying instruments like Prismatic Compass, Plane table, Dumpy level, Theodolite with environment.
CO2. Gain knowledge about geological maps and drawing of sections and interpretations of the relief and structure of the geological maps.

CO3. Identification of different types of rock and minerals.

COURSE OUTCOMES (Cos) OF THE COURSE B.A HONOURS GEOGRAPHY
PART III
PAPER-IX
CLIMATOLOGY

CO1. Students will learn the process of interaction between the atmosphere and the earth's surface.

CO2. They will be able to understand the importance of the ozone layer and bad effect of green- house gasses moreover will be eligible to apply this for the solution of environmental problem.

CO3. They understand how the planetary and periodic wind and pressure belt related to each other. Also they understand how to develop the tropical cyclones, El Nino and La Nina.

CO4. Students can explain the important role of water to create condensation and precipitation.

PAPER-X
PEDOLOGY & BIOGEOGRAPHY

CO1. They can know the soil formation processes, development and soil physical and chemical composition.
CO2. Understand the genetic soil classification and U.S.D.A. soil taxonomy.
CO3. Students can learn the scope and significance of biogeography. Also know, factors affecting the growth and distribution of natural vegetation.
CO4. They also gather knowledge about biome, ecotone and community, types and component parts of ecosystem, bio-energy cycle, food chain and trophic level. This can help them to predict the future change of biogeographical components.

CO5. They can illustrate the importance about bio-diversity and wetlands.

PAPER-XI
GEOGRAPHY OF INDIA

CO1. They can know about their own countries land formation, climate and natural vegetation.
CO2. They understand the population problems in India. Access the population policies and reaction the countries.
CO3. They understand globalization and Indian economy. And also understand the regional distribution of resource.

PAPER-XII
NATURE & METHODOLOGY IN GEOGRAPHY

CO1. Gain knowledge about the historical evolution of geographical thoughts.

CO2. Understand the philosophy of deterministic, possibilistic and ecological approach.

CO3. Know about man-environment relation, regional location and space.

CO4. Know about physical and socio economic survey, how to collect primary and secondary data, questionnaire. It's helped them to research work in the future.

PAPER-XIII
SOCIAL & CULTURAL GEOGRAPHY

CO1. Evaluate the social issues such as- racism, cast conflict, social distance.
CO2. Understand the causes of social inequality and their impact on society.
CO3. Students can understand indicators of social well-being and quality of life.
CO4. Discuss about the social space, social groups and intra-urban mobility.
CO5. They can define the cultural region of the world.
CO6. Students can learn about rural settlement morphology, urban-industrial landscape.
CO7. Analysis the social set-up in Indian villages.

PAPER-XIV
OPTIONAL PAPER- 1
POPULATION GEOGRAPHY

CO1. Understand the nature of population. Know about composition of population, like- age, sex marital status, family, economic composition and language.

CO2. Analyze the global trend and patterns of population growth in developing countries, and migration patterns.

CO3. Evaluate the population growth theory and migration theories.

CO4. Understand the population policies in different countries.

OPTIONAL PAPER- 2
URBAN GEOGRAPHY

CO1. Students can explain the town and cities in India and World perspective.
CO2. Gain knowledge about the history of urbanization in the developed and developing countries.
CO3. They can understand the functional differences between rural and urban settlements.
CO4. Students can define the problems of urban area. And try to solve them.
CO5. They will know the characteristics of urban settlement.
CO6. To be able to identify the urban environmental problem and how to solve those problem.

PAPER-XV
PRACTICAL

CO1. Students learn to use of various meteorological instruments and also learn to interpret of the Indian daily weather report.

CO2. That's help students to predict the weather report in future.

CO3. They understand and gain knowledge about statistical techniques.

CO4. Students learn to use the pocket stereoscope and interpret the aerial photograph with the help of pocket stereoscope. Also develop their skill in remote sensing and G.I.S.

PAPER-XVI
PRACTICAL

CO1. Students learn to draw many cartography diagram and apply this is in different statistical data.

CO2. They can able to select the appropriate technique for graphical presentation of a data to their field work.

CO3. Their knowledge about primary and secondary data collection helps them to prepare their survey report.

COURSE OUTCOMES (Cos) OF THE COURSE B.A GENERAL GEOGRAPHY

PART I

PAPER-I

PHYSICAL GEOGRAPHY

Co1. The students will be familiar with the earth's interior.
Co2. Develop an idea about earth movements and the related topography.
Co3.Acquire knowledge about different types of rock and their origin .Influence of the rocks on land form and topography.
Co4. Getting familiar with the concept of hydrology
Co5. Understanding the processes of erosion, deposition and resulting landforms.

PAPER -II

Climatology and Biogeography

Co1.Students will learn about the atmosphere and the climate, pressure belts, wind systems, monsoon and their importance, difference between climate and weather.

Co3.Students can learn the significance of biogeography. They will also get to know about the factors responsible for plant growth.

PAPER-III
PRACTICAL

Co1. Developing an idea about scales and how to draw different types of scales; conversion of scales.
Co2. Forming a clear concept on map projections.
Co3. Topographical maps and its application in practical.
CO4. Getting familiar with underlying structures with the help of geological maps.

PART II
PAPER-IV
HUMAN GEOGRAPHY

CO1. -The students will be aware of the scope and contents of human geography.

CO2. Man's adaptation in various environments.

CO3**.** This particular module aims to develop an idea about the world population distribution and the factors that lead to uneven distribution of the population. It also focuses on the problem that is likely to arise due to an increase in the world population.

CO4**. -** Different types of settlement and characteristics and their definitions.

CO5. scope and content of social geography; race characteristics and distribution ;factors and characteristics of underdevelopment.

PAPER-V
ECONOMIC GEOGRAPHY

CO1.This module deals with the scope and content of economic geography; economic activities- primary, secondary, tertiary.

CO2**.** Focuses on the concept of agricultural geography; Cultivation and their association with different natural and human conditions of the following cereal crops: wheat, rice; plantation crops: rubber; agricultural systems of the world; commercial grazing –cattle and sheep rearing.

CO3**.** Definition of power resources; coal, petroleum and water

CO4. Discussing the factors behind the localization of industries; with special reference to the study of iron, steel and aluminum industry.

CO5**.** Definition and classification of resources and the infrastructural facilities required for resource development. Reference to resource conservation.

PAPER-VI
PRACTICAL

CO1. To learn graphically about the enlargement and reduction of maps.
CO2. Learning about chain surveying and prismatic surveying.

CO3. Getting to know superficially about remote sensing and aerial photo interpretation with the help of pocket stereoscope.

CO4. Necessity of field report in practical geography; collection of data and how to prepare a report from the data collected.

PART III
PAPER-VII
REGIONAL GEOGRAPHY

CO1. The module focuses on the regional geography of India.

a. Physical relief
b. Drainage
c. Climate
d. Soil
e. Natural vegetation.

Their characteristics and distribution; deforestation and conservation of forest.
CO2. Also focuses on agriculture, power resources and industries of India.

CO3. Familiarizing the students with different concept of population geography like growth, distribution and migration. Also making them aware of the different ethnic groups residing in India (santhals ,naga and the bhils)

PAPER-VIII
PRACTICAL

CO1. Lessons on different statistical methods used in practical geography e.g. frequency polygon, cumulative frequency, mean, median and mode etc.

CO2. Lessons on cartograms like pie graph, bar graph, and age-sex pyramid etc.

CO3. Lessons on meteorological instruments like maximum and minimum thermometer, rain gauge, dry and wet bulb thermometer.

DEPARTMENT OF HISTORY

PROGRAMME SPECIFIC OUTCOME

Being a subject of social science, history has its own value in society and human life. It helps the students to develop their ethical and social value. They could gather knowledge about the heritage and tradition of their own country and the others.

There is huge potentiality in future of a history student. Various options are opened to history students to choose their career. First of all, history is a subject from primary education level to higher study, so they can engage themselves in teaching profession in primary, secondary and post secondary schools. History is also helpful for those who are preparing for WBCS and SSC. A history student may choose his or her career in journalism or any other editorial board. They may get job in museum, archives and libraries. Beside those, in the field of research and archaeology they may proceed.

COURSE OUTCOME FOR HISTORY

HONOURS SYLLABUS

PART 1

PAPER 1: HISTORY OF INDIA UPTO C. AD.650

Students of History Honours can achieve knowledge regarding geographical background and sources with approaches to Ancient Indian History. They learn about pre and proto history of our country, emergence and growth of earlier dynasties like Maurya, Gupta and the empires in Post Maurya period as well as in Post Gupta period.

PAPER 2: HISTORY OF INDIA C. AD. 650-1550

History students will acquire knowledge about historiography of Ancient India. The socio, political, economic, religious and cultural features of early medieval India are vividly depicted in this paper. The history of Delhi Sultanate is thoroughly described in this portion. Students can gather knowledge regarding Sultanate administration, socio-cultural –political situation of Delhi under Sultanate.

PART 2

PAPER 3: HISTORY OF INDIA C. AD. 1550-1750

The Mughal is a topic of controversy and attraction for their purse-proud to history lovers. Students will learn from this paper how did Mughal polity, economy, trade, commerce, society,

culture become so famous in medieval period. They also learn the history of downfall of the Mughals, the end of an era.

PAPER 4: HISTORY OF INDIA C. AD. 1750-1950

To understanding Modern India this paper is essential. Students from history stream will get knowledge about the penetration, expansion and consolidation of British Rule in India. Indian awakening, cultural changes and socio-religious reforms movements, Revolt of 1857 are described in this paper. Students of History Honours acquire knowledge about communal politics, partition in India in between 1947-1950.

PART 3

PAPER 5: RISE OF MODERN WEST (MID 15TH TO MID 18TH CENTURIES)

The students of history honours learn about some significant events of Modern West. Such as – Renaissance, Humanism, Reformation, Scientific Revolution, Mercantilism, American War of Independence, the Industrial Revolution. They will get knowledge from the debates which explain the transition of feudalism to capitalism.

PAPER 6: HISTORY OF MODERN EUROPE C. AD. 1780-1939

This paper focused on the great French Revolution in 1789. Students come to know about the emergence of Napoleon Bonaparte in Europe and his expansion, consolidation, downfall. Vienna Congress, Metternich, Bismarck and his diplomacy, system of alliances, 1917 Russian Revolution, Fascism, Nazism and the origin of World War II all these important issues are incorporated in this paper.

PAPER 7: HISTORY OF CHINA AND JAPAN C. AD. 1839-1949

This paper is divided in two units. In the first unit students learn about China and Imperialism, emergence of Nationalism and Communism in China. Canton commercial system, opium war, open door policy, Taiping Rebellion, Boxer Rebellion all these topics are included in this portion.

In the second unit students learn about Japan- Meji Restoration, Meji constitution, Sino-Japanese war, Anglo-Japanese war, Russo-Japanese war, Manchurian crisis etc.

PAPER 8: THE MAKING OF THE CONTEMPORARY WORLD

Students will gather knowledge about the impact of the Second World War on the International System like Cold War, emergence of third world, non-alignment, bipolar world through this paper. The system of military and economic alliances, decline of European Imperialism, decolonization has been explained in this paper.

PASS COURSE SYLLABUS

PART 1

PAPER 1: HISTORY OF INDIA UPTO C. AD. 1200

In this paper the students from general course will learn about the socio cultural pattern of India. They read the sources of history, primitive civilization like Harappa, Vedic Age, protestant movements such as Jainism, Budhhism, the royal history of Maurya, Kusanas and Satbahans.

PAPER 2: HISTORY OF INDIA (1200 A.D. TO 1556 A.D.)

Students of this paper will learn about the survey of sources of Medieval Indian History, history of the sultanate under Das, Khaljis and Tughlaqs, history of peninsular India under Bahamani and Vijoynagar kingdom.

PAPER 3: HISTORY OF INDIA FROM C. A.D. 1760-1950

To understanding the mid – eighteenth century this paper is considered as mandatory. Students will gather knowledge about expansion and consolidation of British Empire, economic changes, land revenue settlements, commercialization of agriculture, de-industrialization, spread of western education, Indian Renaissance, several peasants and tribal movements.

PART 2

PAPER 4: POLITICAL AND ECONOMIC PATTERN

Students will acquire knowledge about the imperial Guptas, their political and economic pattern. They get an idea about the developments in Gupta and Post Gupta period including society, art, architecture, literature, science, technology etc.

PAPER 5 : LATER MEDIEVAL PERIOD (A.D. 1556-1761)

Students will learn about the Mughals and their relation with Rajput, Sikhs, Decan. Marathas and central Asia. They get an idea about Bengal under Mughal reign. Mughal administration with emphasize on Mansabdari, jaygirdari, zamindari sytem are included in this paper. The great Mughal Badsah Akbar's and Aurangjev's religious policies are incorporated here.

PAPER 6: NATIONAL MOVEMENT

Students will gather knowledge about nationalism, genesis of congress, moderates, extremists, Gandhi and his movements, Subhas Basu and his INA, Princely states, integration of the Indian States, making of constitution and foreign policy.

PART 3

PAPER 7: WESTERN WORLD-MID 15TH CENTURY TO WORLD WAR II

From this paper students will learn about decline of feudalism and rise of modern era, renaissance, reformation, rise of absolutist state, glorious movements, Germany and Italian unification, 1st World War, peace settlement and 2nd World War etc.

DEPARTMENT OF MATHEMATICS

PROGRAMME SPECIFIC OUTCOME

1. Students will get a strong and valuable knowledge of mathematics which will help them to think logically and they can apply them in both their personal & professional life throughout.
2. Students will have the ability to formulate and then solve the critical and complex type problems.
3. Students will create an interdisciplinary relation between the other streams.
4. Students will have a creative and logical mind by which they can analyze & solve practical problems in their life.
5. Students will apply appropriate techniques and also have the ability of modeling complex and challenging problems.
6. The knowledge of Mathematics will make the students ethical and responsible citizen of nation.
7. Students will be able to do work as a whole or team or individually and communicate effectively with others.
8. Students will recognize the need of self learning and life-long learning to demonstrate the knowledge in the development of society and himself.

B.SC. HONOURS

PART-I -1ST SEMESTER

COURSE CODE: MATH11 HCC-1

COURSE OUTCOME

Course Title: Calculus, Geometry and Differential Equation

This course offers the students to

1. Know about the Hyperbolic functions, higher order derivatives, to know about Leibnitz rule and its applications.
2. Understand the concavity and inflection points, envelopes, asymptotes, curve tracing in Cartesian coordinates.
3. Gain a concept about L'Hospital's rule and its applications in different fields like in business, economics and life science.

4. Know the Reduction formulae, derivations and illustrations of reduction formulae, understand the parametric equations, arc length of a curve, area and volume of revolution and to solve the related problems.

5. Understand the basic concept of conics, rotation of axes and classification of conics and polar equations of conics.

6. Know about the properties of Sphere, Cylindrical surfaces, conicoids, paraboloids , generating lines and solve these related problems.

7. Understand the basic idea of Differential equation and apply the knowledge of Differential equations to solve the real life problems.

8. Solve the first order Differential equations using different types of method, especially linear differential equations and Bernoulli equations.

PART I- 1ST SEMESTER

COURSE CODE: MATH11 HCC-II

COURSE OUTCOME

Course Title: Algebra

This course offers the students to

1. Understand the basics of Complex number, proof of De Moiver's theorem and its applications.

2. Know about Theory of Equations, relationship between roots and coefficients, Descartes rule of signs, to solve the cubic & biquadratic equations.

3. Have the knowledge in inequality involving A.M $\geq$ G.M $\geq$ H.M.

4. Understand the basic concept of Integers, well ordering property of positive integers, congruence relation and mathematical induction and solving problems using these results.

5. Know about set theory, equivalence relation, functions and its types.

6. Have a basic and strong knowledge in Linear algebra.

7. Solve the linear system problems using matrix representation, applications of linear systems.

8. Gain knowledge about Vector space, subspaces and dimension of subspaces.

9. Solve the Eigen value related problems; understand about Eigen vectors, Clayey-Hamilton theorem and using this find the inverse of a matrix.

PART-I 2ND SEMESTER

COURSE CODE: MATH21 HCC-III

COURSE OUTCOME

Course Title: Real Analysis

This course offers the students to:

1. Understand the algebraic and order properties of R, brief idea about countability of sets, know L.U.B & G.L.B of a set, gain a clear idea of Archimedean property.
2. Understand about Point set theory, neighbourhood of a point, concept about limit points and find limit points of sets, know about Bolzano-Weierstrass theorem and know about its importance on limit point.
3. Gain the concept on closed set, open set and its operations and apply this knowledge in solving some related problems.
4. Understand about the concept of Sequence and check its convergence, non -convergence, Cauchy sequence, to understand some basic theorems on Subsequences, know about limsup, liminf of a sequence, subsequential limits.
5. Know about series its definition, convergence and divergence, different types of test such as Comparison test, limit test, Cauchy's nth root test to check the convergence of infinite series of positive real numbers and also have an idea about Absolute and conditional convergence.

PART-I 2ND SEMESTER

COURSE CODE: MATH21 HCC-IV

COURSE OUTCOME

Course Title: Differential Equations and Vector Calculus

This course offers the students to

1. Know about Lipschitz condition and Picard's theorem to check the existence of a solution of a D.E, have idea to solve homogeneous equation of second order, and also linear homogeneous and non-homogeneous equations of higher order with constant coefficients using the method of undetermined coeffiecients, method of variation of parameters.
2. Understand the system of linear differential equations, and know differential operator and its applications to solve the linear system with constant coefficients.
3. Know the Power series solution of D.E. and also understand the ordinary and singular points of an O.D.E.
4. Gain the idea of equilibrium points and interpretation of phase plane.

5. Gain idea of vector triple product and its application, understand about limit and continuity of vector functions and using this idea solve some problems, also know the differentiation and integration of vector functions.

B.SC HONS 2ND YEAR

PAPER-V

COURSE OUTCOME

Course Title: Real Analysis-II, Calculus of Several Variables-II, Applications of Calculus

This course offers the students to

1. Make a clear concept of series of non-negative real numbers, different types of test to check the convergent.
2. Able to understand Limit of functions, Sandwitch theorem,Cauchy criterion for the existence of finite limit.
3. Be able to understand Continuity of functions, Bolzano's theorem, Intermediate value theorem, Uniform continuity and their properties.
4. To make a clear concept of Derivative of functions,Lipschitz's condition and Darboux's theorem.
5. Gain a clear concept of maxima and minima of functions, sufficient condition for the existence and their applications.
6. To understand theory of Young's theorem, Schwartz's theorem, Jacobian, Implicit function and about functions of several variables.
7. To make clear concept about the application of Differential calculus: Plane curve,Tangents and Normals, Curvature, Asymptotes, Envelopes and Singular points.
8. To understand the application of Integral calculus: Area enclosed by a curve, Volume and Surface areas, Centre of Gravity, Moment of Inertia, Reduction Formulae.

B.SC HONS 2ND YEAR

PAPER-VI

COURSE OUTCOME

Course Title: Integral Calculus-II, Dynamics of a Particle

This course offers the students to

1. Make a clear concept of Riemann Integration ,Darboux's theorem, Necessary and Sufficient condition of Riemann integrability and different classes of Riemann-integrable functions.

2. Gain clearer concept of Riemann sum, properties of definite integral, Fundamental theorem of Integral Calculus, statements and applications of First and Second Mean Value theorems of Integral Calculus.

3. Understand Motion in a straight line under variable acceleration, Simple Harmonic motion.

4. Be able to understand Motion in a plane under central forces, Central orbit, Tangential and normal components of acceleration and Circular motion.

5. Make a clear concept of Motion of a particle in a plane under different laws of resistance, Motion of a projectile in a resisting medium, Terminal velocity.

6. Gain clear concept of Motion of a particle under the Inverse square law in a plane, Kepler's laws of planetary motion

7. Able to understand Equation of motion of a particle of varying mass and problems of varying mass.

B.SC HONS 2ND YEAR

PAPER-VII

COURSE OUTCOME

Course Title: Modern Algebra-II, Linear Algebra-II, Vector Analysis

This course offers the students to

1. Able to understand Cosets,Lagrange's theorem and Cyclic groups.

2. Gain clearer concepts of Permutation, Ring, Integral domain, Field and able to solve related problems, theorems.

3. To make clear concept of Inner product spaces, Bessel's inequality, Gram-Schmidt orthogonalization method.

4. To understand concepts of Linear Transformation on Vector Spaces, corresponding Matrix representation and its properties.

5. Gain clear concept of Vector differentiation, Tangent to a curve at a point, Normal plane, Serret-Frenet formulae,Oscilating plane and Rectifying plane.

6. Able to understand concept of scalar and vector fields, Directional derivative, Gradient, Divergence and Curl, their properties, Green's theorem in a plane, Stokes' theorem and Divergence theorem.

B.SC HONS 2ND YEAR

PAPER-VIII

COURSE OUTCOME

Course Title: Geometry (3D), Differential Equations-II

This course offers the students to

1. Gain clear concept of equation of plane, Straight line, condition of Co planarity of two lines, Skew lines and shortest distance between skew lines.
2. To make clear concept of Sphere, Cone, Cylinder, Ellipsoid, Hyperboloid, Paraboloid referred to principal axes and solve different types of problems.
3. Able to understand Transformation of rectangular axes by translation, rotation and their combinations, Tangent and Normal,Envelpoing cone and Reciprocal cone.
4. Gain clear concept of Second order linear differential equations with variable coefficients, simple Eigen value problem, Simultaneous linear differential equations.
5. Understand concept of Partial differential equations and classification, solution by Lagrange's method and Charpit's method,application of Laplace transformation,Power series solution.

B.SC. HONS 3RD YEAR

PAPER-IX

COURSE OUTCOME

Course Title: LPP, Tensor algebra and Analysis

The students who complete this course successfully are expected to

1. Gain clear concept of Linear programming problem formulation, basic properties of Convex sets, Hyperplane, Convex hull, linear programming in matrix notation.
2. To understand different methods of solution of Linear programming problem such as Graphical method,Simplex method, duality, Transportation and Assignments problems.
3. Be able to understand concepts of E^n,Tensor as a generalisation of vector in E^2,E^3 and E^n,Covariant and Contravariant vectors,Invariant,Einstein's Summation convention,Kronecker delta.
4. Make clear concept of Covariant,Contravariant and Mixed tensors,Algebra of tensors, Symmetric and skew-symmetric tensors, Reciprocal tensor and Quotient law.
5. Gain clear concept of Riemannian space, Metric tensor, Magnitude of a vector, Angle between two vectors.

6. Understand concept of Christoffel symbols and their laws of transformations,Ricci tensor,Geodesic coordinates and Bianchi identity.

B.SC. HONS 3RD YEAR

PAPER-X

COURSE OUTCOME

Course Title: Real Analysis-III, Integral Calculus-III

This course offers the students to

1. Gain clear concept of Linear point set, Compact sets, Cantor intersection theorem, Heine Borel theorem.
2. Be able to understand Limit, Continuity and Uniform continuity on Compact set, Sequence of function, Dinis theorem on Uniform convergence and able to check pointwise and uniform convergence of a given sequence of function.
3. Understand series of functions, some tests to check uniform convergence of a series of function.
4. Able to understand power series, Cauchy-Hadamard and Abel's limit theorem and their application, finding Radius of convergence.
5. Make a clear concept of Mean value theorem and Taylor's theorem, Extremum of functions of two and three variables.
6. Gain clear concept of Improper integral, Necessary and Sufficient condition for convergence of improper integral, different types of test of convergence of improper integral, Uniform convergence of improper integral by M-test and convergence of Beta and Gamma functions.
7. Understand Differentiation and integration with respect to parameter under integral sign, some relevant theorems and problems.
8. Able to solve Fourier series problems.
9. Solve problems related to Multiple integral.

B.SC HONS 3RD YEAR

PAPER –XI

COURSE OUTCOME

Course Title: Metric space, Complex Analysis, Modern Algebra-III

This course offers the students to

1. Understand the basic concepts of Metric spaces,

2. Make a clear idea of open sets, closed set, subspace of Metric space.

3. Understand Cauchy sequence, theory of Cantor Intersection, Real number as a complete ordered field.

4. Gain concept complex number as an ordered pair, Stereographic projection.

5. Understand complex functions, continuity and differentiability of complex functions. Analytic functions, harmonic functions.

6. Know conformal mappings Bilinear transformation.

7. Gain the basic concept of Normal subgroups, their properties, Quotient group of a group by a normal subgroup.

8. Understand about Homomorphism, isomorphism. Infinite cyclic group is isomorphic to the group of residue classes of modulo n.

B.SC HONS 3RD YEAR

PAPER –XII

COURSE OUTCOME

Course Title: Theory of Probability, Rigid Dynamics

This course offers the students to

1. Know the basic concept of random experiments, simple and compound events, event space, classical and frequency definitions of probability, axioms of probability, Bayes' theorem.

2. Understand about independent events, Bernoulli trials and binomial law. Poisson trials, probability distribution function, continuous and discrete distribution: Binomial, Poisson, Gamma, Uniform and Normal distributions.

3. Know about transformation of random variable, Two dimensional probability distributions, Discrete and continuous distributions, conditional distributions.

4. Understand the concepts of mathematical expectation, mean, variance, moments and central moments, dispersion, skewness and kurtosis, median, mode quartiles, moment generating function, characteristic equation, correlation co-efficient, Regression curves, least square regression lines and parabolas.

5. Know the idea of Chi-square and t-distributions and their properties, Tchebychef's inequality, statement of Bernoulli's limit theorem, law of large numbers, Poisson's approximation to binomial distribution and normal approximation to binomial distribution, statement of central limit theorem in the case of equal components and of limit theorem for characteristic functions.

6. Understand about rigid dynamics- momental ellipsoid, equimomental system.

7. Know about D'Alembert's principle, D'Alembert's equations of motion, principle of conservations of linear and angular momentum, independence of the motion of centre of inertia and the motion relative to the centre of inertia.

8. Gain an idea about the equation of motion of a rigid body about a fixed axis, expression for kinetic energy and moment of momentum of a rigid body moving about a fixed axis.

9. Know about compound pendulum, its point of suspension and centre of oscillation, minimum time of oscillation.

B.SC HONS 3RD YEAR

PAPER – XIII

COURSE OUTCOME

Course Title: Theory of Statistics, Analytical Statics

This course offers the students to

1. Know about the basic concept of Random sample, Sampling and its various types, tabulation and graphical representation of data.

2. Understand about Sampling distribution, estimates of a parameter, unbiased and consistent estimates, sampling distribution of the sample mean and variance.

3. Have an idea about Bivariate samples, sample correlation coefficient, and solve the problems related least square regression lines and parabolas.

4. Understand and solve the estimation of parameters, method of maximum likelihood function and its application in binomial , poisson and normal populations.

5. Have a clear idea about statistical hypothesis.

6. Know the theory of Neyman-Pearson and its application to normal population and also some application of hypothesis testing.

7. Know about center of gravity, general formula of C.G., determination of C.G. of any arc, area of solid of known shape.

8. Gain an idea about astatic equilibrium, astatic centre, and positions of equilibrium of a particle lying on a smooth plane curve under the action of given forces.

9. Know about virtual work, principle of virtual work,principle of virtual work for any system of coplanar forces acting on a rigid body, converse of the principle of virtual work.

10. Gain an idea about stable and unstable equilibrium, degree of freedom, conservative field, potential energy of a system, the energy test of stability,condition for stability of equilibrium of a heavy body lying on fixed body.

11. Understand about forces in three dimensions, moment about a line, conditions for equilibrium of a system of forces acting on a body, Poinsot's central axis, and equation of central axis of a given system of forces.

B.SC. HONS 3RD YEAR

PAPER – XIV

COURSE OUTCOME

Course Title: Classical Mechanics, Discrete Mathematics and Boolean Algebra

This course offers the students to

1. Gain a basic concept about conservation principles, conservation of linear momentum and energy, degrees of freedom.
2. Know the Newtonian mechanics, its limitations, generalized potential, energy integrals for conservative fields.
3. Understand the principle of Discrete mathematics and its applications, partial and linear orderings, lattices.
4. Have an idea about Boolean Algebra, relation of Algebra with Boolean Algebra, duality, know about Boolean functions and its normal forms.
5. Have a basic concept of Graph theory, its basic properties, different types of graphs such as connected graph, complete graph, complement of a graph, Bipartite graphs.
6. Know about Euler graphs, Plannar graphs, basic idea of tree and its properties, Kruskal's algorithm, Binary tree.

B.SC. HONS 3RD YEAR

PAPER – XV

COURSE OUTCOME

Course Title: Numerical Analysis, Computer Science and Programming

This course offers the students to

1. Know about the basics of numerical analysis, errors, different types of errors, types of operators.
2. Understand about interpolation, students are capable to solve the problems related to interpolation, Newton's forward and backward interpolation formulae, Stirling's and Bessel's interpolation formulae, Lagrange's interpolation formula.
3. Gain the concept of numerical differentiation, numerical integration ,their formulae and their application in solving problems.

4. Know the method to solve the solutions of non-linear equations and system of linear equations- Guass elimination method, Seidal method their convergence.

5. Solve the Eigen value problems, ordinary differential equations- Euler method, Runge-Kutta method (2nd order, 4th order).

6. Understand the basics of computer fundamentals.

7. Know about different types of number system and their conversion, algorithm and flow charts.

8. Gain the knowledge about programming language.

9. Know about the basics of ANSI C, construction of simple C program & apply this knowledge in various fields.

B.SC HONS 3RD YEAR

PAPER – XVI

COURSE OUTCOME

Course Title: Numerical methods: Practical (using scientific calculator and using C programming)

This paper offers the students to

1. Solve the numerical methods using scientific calculator with the help of their knowledge of numerical analysis. The methods are-Bisection method, Fixed-point method, Newton-Raphson method, Regula-Falsi method, Newton's Divided Difference Interpolation, Stirling &Bessel interpolations, Lagrange interpolation, Newton's forward and backward interpolations, Trapezoidal, Simpson's 1/3 and Weddle's rules, Guass Elimination method, Guass-Seidal method, Euler's method, Runge-Kutta method(4th order).

2. Apply the knowledge of C programming in solving the numerical methods, such as-Bisection method, Fixed-point iteration, Scant method, Newton-Raphson method, Regula – Falsi method, Simpson's 1/3 rule, Euler's method, Runge-Kutta method(4th order).

GENERIC ELECTIVE (GE) COURSE

COURSE CODE: MATPGE1

COURSE OUTCOME

Course Title: Calculus, Geometry and Differential Equation

This course offers the students to

1. Know about the Hyperbolic functions, higher order derivatives, to know about Leibnitz rule and its applications.

2. Understand the concavity and inflection points,envelopes, asymptotes, curve tracing in Cartesian coordinates.

3. Gain a concept about L'Hospital's rule and its applications in the different fields like in business, economics and life sciences.

4. Know the Reduction formulae,derivations and illustrations of reduction formulae, understand the parametric equations, arc length of a curve, area and volume of revolution and to solve these related problems.

5. Understand the basic concept of conics, rotation of axes and classification of conics and polar equations of conics.

6. Know about the properties of Sphere, Cylindrical surfaces, conicoids, paraboloids , generating lines and solve these problems.

7. Understand the basic idea of Differential equation and apply the knowledge of Differential equations to solve the real life problems.

8. Solve the first order Differential equations using different types of method, specially linear differential equations and Bernoulli equations.

COURSE CODE: MATPGE2

COURSE OUTCOME

Course Title: Algebra

This course offers the students to

1. Understand the basics of Complex number, theory of De Moiver's theorem and its applications.

2. Know about Theory of Equations, relationship between roots and coefficients, Descartes rule of signs, to solve the cubic & biquadratic equations.

3. Have the knowledge in inequality involving A.M $\geq$ G.M $\geq$ H.M.

4. Understand the basic concept in Integers, well ordering property of positive integers, congruence relation, and mathematical induction and solving problems using this.

5. Know about set theory, equivalence relation, functions and its types.

6. Have a basic and strong knowledge in Linear algebra.

7. Solve the linear system problems using matrix representation, applications of linear systems.

8. Gain knowledge about Vector space, subspaces and dimension of subspaces.

9. Solve the Eigen value related problems, understand about Eigen vectors, Cayley-Hamilton theorem and using this find the inverse of a matrix.

COURSE CODE: MATPGE3

COURSE OUTCOME

Course Title: Differential Equation and Vector Calculus

This course offers the students to

1. Gain knowledge about Lipschitz condition and Picard's Theorem,2nd order homogeneous equations, properties and applications of Wronskian.
2. Make a clear concept of Linear homogeneous and non-homogeneous equations of higher order with constant coefficients, Euler's equation.
3. Solve method of undetermined coefficients and method of variation of parameters related problems.
4. Gain a clear concept of power series solution of a differential equation about an ordinary point and solution about a regular singular point.
5. Know about systems of linear differential equations, types of linear system,operator method for linear systems with constant coefficients.
6. Make a clear concept of linear systems in normal form, homogeneous linear systems with constant coefficients
7. Understand vector triple product,limit,continuity,differentiation and integration of vector functions.

COURSE CODE: MATPGE4

COURSE OUTCOME

Course Title: Group theory

This course offers the students to

1. Gain a clear concept of Groups including permutation groups and quaternion groups,subgroups,center of group,product of two subgroups.
2. Knowledge about cyclic groups ,properties of permutation,alternating group, Cosets,Lagrange's theorem and consequences including Fermat's Little theorem.
3. Make a clear concept of external direct product of finite number of groups,normal subgroups,factor groups and Cauchy's theorem.
4. Understand group homomorphism,properties of homomorphism.
5. Know about Cayley's theorem,properties of isomorphisms and isomorphism theorems.

COURSE CODE: MATPGE5

COURSE OUTCOME

Course Title: Numerical Method

This course offers the students to

1. Know about the basics of numerical analysis, errors, different types of errors, types of operators.
2. Understand about interpolation , students are capable to solve the problems related to interpolation, Newton's forward and backward interpolation formulae, Lagrange's interpolation formula.
3. Gain the concept of numerical differentiation, numerical integration ,their formulae and their application in solving problems.
4. Know the method to solve the solutions of non-linear equations and system of linear equations- Guass elimination method, Seidal method their convergence.
5. Solve the Eigen value problems, ordinary differential equations- Euler method, Runge-Kutta method (2nd order).

B.SC. PROGRAMME COURSE / GENERAL

1. Students will get a strong and valuable knowledge of mathematics which will help them to think logically and apply them in both their personal & professional life throughout.
2. Students will have the ability to formulate and then solve the critical and complex type problems.
3. Students will create an interdisciplinary relation between the other streams.
4. Students will have a creative and logical mind by which they can analyze & solve practical problems in their life.
5. The knowledge of Mathematics will make the students ethical and responsible citizen of nation.
6. Students will be able to do work as a whole or team or individually and communicate effectively with others.
7. Students will recognize the need of self learning and life-long learning to demonstrate the knowledge in the development of society and him.

UG PROGRAMME COURSE

COURSE OUTCOME

SEMESTER-1

PAPER-1

Course Code: MATP11DSC

Course Title: Calculus and Geometry

This course offers the students to

1. Know about the Hyperbolic functions, higher order derivatives, to know about Leibnitz rule and its applications.
2. Understand the concavity and inflection points, envelopes, asymptotes, curve tracing in Cartesian coordinates.
3. Gain a concept about L'Hospital's rule and its applications in the different fields like in business, economics and life sciences.
4. Know the Reduction formulae, derivations and illustrations of reduction formulae, understand the parametric equations, arc length of a curve, area and volume of revolution and to solve these related problems.
5. Understand the basic concept of conics, rotation of axes and classification of conics and polar equations of conics.
6. Know about the properties of Sphere, Cylindrical surfaces, conicoids, paraboloids , generating lines and solve these related problems.

SEMESTER-2

PAPER-2

COURSE OUTCOME

Course Code: MATP24 DSC

Course Title: Algebra

This course offers the students to

1. Understand the basics of Complex number, polar representation of complex number, theory of De Moiver's theorem and its applications.
2. Know about Theory of Equations, relationship between roots and coefficients, Descartes rule of signs, to solve the cubic & biquadratic equations.
3. Have the knowledge in inequality involving A.M $\geq$ G.M $\geq$ H.M.

4. Understand the basic concept in Integers, well ordering property of positive integers, congruence relation, and mathematical induction and solving problems using this.
5. Know about set theory, equivalence relation, functions and its types.
6. Have a basic and strong knowledge in Linear algebra.
7. Solve the linear system problems using matrix representation, applications of linear systems.
8. Gain knowledge about Vector space, subspaces and dimension of subspaces.
9. Solve the Eigen value related problems, understand about Eigen vectors, Cayley-Hamilton theorem and using this find the inverse of a matrix.

B.SC GENERAL 2ND YEAR

PAPER-IV

COURSE OUTCOME

Course Title: Integral Calculus, Ordinary Differential Equations

This course offers the students to

1. Able to understand evaluation of Definite Integrals, Reduction formulae and associated problems, Integration as the limit of sum.
2. Understand definition of Improper Integrals, statements and simple problems of μ-test, comparison test, Beta and Gamma functions.
3. Familiar with the working knowledge of Double integral.
4. Make a clear concept of Rectification, Quadrature, some problems of volume and surface areas of solids formed by revolution of plane curve and areas.
5. Gain a clear concept of Order, degree, solution of Ordinary Differential Equation and its formation.
6. Understand First order Differential Equation, variables separable, Homogeneous equations, Exact equations, Euler's and Bernoulli's equations, Clairaut's equation.
7. Make a clear concept of Higher order Linear Differential Equations with constant coefficients, Euler's homogeneous equations and Orthogonal trajectories.

B.SC GENERAL 2ND YEAR

PAPER-V

COURSE OUTCOME

Course Title: Numerical Analysis, Linear Programming and Optimization

This course offers the students to

1. Able to understand Approximation of numbers, Rounding off numbers, various types of errors, definitions and some relations among Operators.
2. Make a clear concept of Polynomial Interpolations like Lagrange's Interpolation formula, Newton's divided interpolation formula, Newton's Forward and Backward Interpolation Formula and their applications.
3. Able to know deduction of Trapezoidal, Simpson's 1/3 formulae and their geometrical interpretations and some problems.
4. Gain a clear concept of finding solution of Numerical Equations by Location of root, Bisection method, Newton-Raphson method with geometrical problems and some problems.
5. Make a clear concept of Linear programming problem formulation, various types of solutions, basic properties of convex sets,Hyperplane.
6. Finding solution of Linear programming problem by Graphical method, Simplex method and method of Penalty.
7. Make a clear concept of Duality, Duality theorem and some dual problems.

B.SC GENERAL 2ND YEAR

PAPER-VI

COURSE OUTCOME

Course Title: Analytical Dynamics, Probability and Statistics

This course offers the students to

1. Gain clear concept of Motion in a straight line under variable acceleration, Simple Harmonic motion.
2. Know the expressions for velocity and acceleration of a particle moving on a plane in Cartesian and Polar coordinates, Central force and central orbit.
3. Make a clear concept of Tangential and normal accelerations, Circular motion.
4. Understand concept of Motion of a particle in a plane under different laws of resistance, Motion of a projectile in a resisting medium, Trajectories in a resisting medium, Terminal velocity.
5. Gain a clear concept of Random variables, Distribution function, Discrete and continuous distribution in two dimensions and their related study.
6. Make a clear idea about Mathematical expectation,Mean,Variance,Moments and central moments.
7. Understand Measures of skewness and kurtosis, Median, Mode, Quartiles, Covariance, Correlation co-efficient, Regression curves.

8. Gain clear concept of Random sample,collection,tabulation and graphical representations.

9. Make a clear concept of sampling distribution.

B.SC GENERAL: PART- III

PAPER-VII(A)

COURSE OUTCOME

Course Title: Computer Science and Programming, A course of Calculus, Discrete Mathematics

This course offers the students to

1. Know about the basics of Computer Fundamentals such as its historical development, generations, gain knowledge about operating system, number system- binary, decimal, octal & their conversion.

2. Gain a clear concept about programming languages: Machine language, Assembly language, High level language, their algorithm and their application to write a program.

3. Able to gain the knowledge about key words, Data type different types of operator, statements: do, while statements and able to construct simple C program by using their knowledge and apply them in various kinds of fields.

4. Gain a clear knowledge of Sequence of Functions their convergence, Uniform convergence and integration, uniform convergence and differentiation.

5. Understand about Power Series , to perform term to term integration and differentiation of Power Series, convergence of Power Series and to solve simple problems related Power Series.

6. Know about Fourier Series and its application to solve problems, Dirichlet's conditions for convergence of Fourier Series.

7. Solve the Ordinary Differential Equations using Method of variation of parameters and Method of undetermined coefficients. Gain idea to solve simple Eigen value problems.

8. Gain a basic knowledge about Partial Differential Equation, its formation and its solutions using Lagrange's method.

9. Know about the Laplace Transform and how to use it in solving Ordinary Differential Equations, elementary properties of derivatives and integrals.

10. Gain a preliminary knowledge in Integers, Division algorithm, integral solutions of ax+by=c this type of equations, Unique factorization theorem.

11. Know about Congruence, its definition and properties, Euler's phi function and its application, understand the Chinese Remainder theorem, to check digits in ISBN, UPC and credit cards.

12. Gain a clear concept about Boolean Algebra , Huntington postulates for Boolean Algebra, understand Algebra as an examples of Boolean Algebra , and know design of simple switching circuits. They gain the knowledge of Boolean Algebra to apply this in various fields.

PAPER – VII(B)

COURSE OUTCOME

Course Title: Practical: Numerical Methods

This course offers the students to

1. Apply their knowledge of Numerical Analysis practically by solving some problems using Scientific Calculator and C programming. Students are able to solve the solutions using Bisection method, Fixed point iteration method, Newton - Raphson method, Regula-Falsi method. Also know Numerical Integration- Trapezoidal rule, Simpson's 1/3 rule.

DEPARTMENT OF PHYSICS

PROGRAMME SPECIFIC OUTCOME

After successfully completing B.Sc. in Physics Honours and Program courses, the students are expected to demonstrate the following qualities.

1. **Contents:** Knowledge and conceptual understanding of subjects in Physics such as Classical Mechanics, Electricity and Magnetism, Electromagnetic Theory, Wave and Optics, Thermal Physics, Electronics and Digital Systems, Analog Systems, Modern Physics, Solid State Physics, Quantum Mechanics, Statistical Mechanics, etc.
2. **Mathematical Skills:** Proficiency in mathematics and the mathematical concepts needed for a proper understanding of physics and apply those to solve problems in Physics. They are also expected to demonstrate the ability to translate a physical description to a mathematical equation. In fact, Physicists are renowned for their problem-solving capabilities.
3. **Application of Acquired Knowledge:** Ability to apply the knowledge gathered in Physics to practical problems and make life simpler in day to day activities, understand how nature works and even machines we depend on in our daily life.
4. **Laboratory skills:** Ability to perform laboratory experiments by own, run instruments, record data, analyze them and draw valid conclusions from them. Ability to use various laboratory based analysis tools, graphs, techniques, software and computers.
5. **Computational skills:** Aptitude in computational techniques, programming and utilizing them to solve theoretical physics problems.
6. **Background for future research works:** Laboratory based instrumentation skills and theoretical understanding of Physical concepts in coherence with computational techniques is all what is needed for a background and foundation for future research works in Physics.

COURSE OUTCOME

Mechanics

1. Understand dynamics of particles and rigid bodies both linear and rotational motions.
2. Ability to write the equations of motion in different dynamical situations and solve them. Make predictions of the state of the moving entity at future times.
3. Clear idea of basic mechanical principles, energy principles, collision dynamics, oscillatory motion, pseudo forces, terrestrial forces, etc.
4. Concepts of properties of matter such as elasticity, surface tension, viscosity and mechanics of fluids and to solve numerical problems.
5. Understanding of the effects of velocity of an object being close to that of light in the context of special theory of relativity and ability to solve problems.

Electricity and Magnetism

1. Concepts of the laws of electric charge, current electricity and the interrelationship with magnetism in vacuum as well as in a material medium.
2. Idea of the origin of magnetic field in the presence of electric current in different situations and the converse phenomenon of electromagnetic induction.
3. Understanding of the behavior of magnetic materials.
4. Clear idea of the behavior of alternating current in different circuit combinations and ability to use different network theorems in practical situations.
5. Ability to write electrical equations and solve numerical problems.

Thermal Physics

1. Understanding of the idea how thermal properties of matter can be described both using molecular dynamics as in kinetic theory and statistical ideas as in thermodynamics.
2. Clear idea of dynamical equations in kinetic theory as well as laws of thermodynamics and how one can explain different thermal properties of gas using them.
3. Conversant with mathematical tools and partial differential equations and how one can use them to solve different problems in thermal physics.

Modern Physics

1. Understand how major concepts in modern physics, such as quantum description of particles, developed and changed over time.
2. Clear understanding of the foundations of quantum mechanics.
3. Concepts of the very different physics in the nucleus of an atom and how quantum mechanics can be applied in some cases for describing observations of related nuclear properties.
4. Ability to use differential equations to solve elementary quantum mechanical problems.

Quantum Mechanics

1. Concepts of how mathematical tools such as differential equations can be applied in an abstract sense to ultimately explain real physical observations of particle behavior which cannot be explained by classical mechanics.
2. Clear idea of the techniques used in quantum mechanics to solve practical problems
3. Understanding of how quantum mechanics can describe atomic spectrum and behavior of atoms in electromagnetic fields.

Solid State Physics

1. Clear idea of differences between crystal and amorphous and the physics within.
2. Concepts of symmetry and periodicity in crystals and how the introduction of periodicity in a standard quantum mechanical scenario brings out the properties of crystalline solids.
3. Understand how the theory of solids developed gradually over time to and the ability to correlate theory with experimental results.

4. Concepts of band structure in solids and how it can resolve unsolved differences between older theory and experiments.

Mathematical Methods of Physics

1. Students can understand and identify different mathematical function and its properties and apply them appropriately in solving various problems in physics.
2. They can use Fourier transform to obtain the Fourier series of periodic functions in physics and apply transform methods to solve elementary differential equations of interest in physics and engineering.
3. The students can learn programming and applying it to physics problems.
4. Students will get the basic idea of scientific computing.

Wave and Optics

1. Students will develop the concept of wave motion.
2. The student will get an introduction to the discipline of optics and its role in the modern society.
3. The student will be introduced to various designs of optical systems and aberrations with an emphasis on image forming systems. Finally, the student will get a thorough introduction to image forming systems with emphasis on the human eye, the camera, the telescope and the microscope.
4. The wave optics part of the course will give the student a thorough fundamental knowledge about the different phenomenon of physical optics.

Digital Systems and Applications

1. Students will continue use of concepts covered in Digital Fundamentals.
2. Student will be able to demonstrate understanding of the different families of digital integrated circuits and their characteristics.
3. They will be able to analyze, design, build and troubleshoot a broad range of combinational circuits using digital ICs.
4. They will demonstrate understanding of the basics of programmable logic devices and implement circuits on them.
5. They will be able to analyze, design, build and test hardware and software applications.

Analog Systems and Applications

1. Learning various fundamental concepts of analog systems may help the students to apply the concepts in building an analog system prototype.
2. By the end of this course, students should be able to understand the fundamental concepts of analog systems and apply the same in real world applications.

Electromagnetic theory

1. The student shall be able to formulate potential problems within electrostatics, magnetostatics and stationary current distributions in linear, isotropic media and also solve such problems in simple geometries using separation of variables and the method of images.
2. They can define and derive expressions for energy both for the electrostatic and magnetostatic fields and derive Poyntings theorem from Maxwell's equations and interpret the terms in the theorem physically.

Statistical Mechanics

1. Students learn how to evaluate macroscopic thermal properties of matter (specific heat, magnetic susceptibility, etc) from microscopic dynamics.
2. The course begins with first using classical dynamics and then using quantum dynamics as the microscopic principles.
3. Students would get a good grasp of modern statistical mechanics of interacting, classical and quantum systems and learn the techniques mentioned in the syllabus. A good knowledge of this subject is essential to understand recent developments in large parts of condensed-matter science.

Nuclear and Particle Physics

1. Concepts of the very different kind of forces and the physics thereof that prevail in the nucleus of an atom.
2. Understanding of how quantum mechanics can be applied in some cases for describing observations of related nuclear properties.
3. Clear idea of the models that describe a nucleus, different nuclear phenomena, nuclear reactions and radioactivity, etc. Conception of various high energy particles, their properties and reactions, etc.
4. Clear technical knowledge of various detecting and counting instruments used in nuclear and particle physics.

Computational Physics

1. General idea of the structure and working of a computer.
2. Idea of the importance and use of computers in Physics to aid numerical simulations, modeling, tedious calculations in various practical problems.
3. Concepts of problem solving through algorithms and flowchart using logic. Knowledge of important programming languages.
4. Knowledge of other application packages used for scientific data handling and analysis, word processing and data representation in the form of graphs.
5. Extensive experience in programming to solve numerical problems in Physics using computer programs.

Devices and communications

1. Understand and use correctly terms introduced in this course in relation to communication networks.
2. Understand general principles involved in data exchange between devices.
3. To prepare mathematical background for communication signal analysis.
4. To understand the building blocks of digital communication system.

Renewable Energy and Energy Harvesting

1. The students can understand the basics of how each renewable energy technology works. And how it can be utilized for electric energy production.
2. They can distinguish between the main types of renewable energy technology and what each can perform and the process of achieving that.
3. They can identify which might be the most appropriate technology for any given scenario.
4. Generating electricity from sustainable energy sources and keeping track of key public policies affecting renewable power generation and identify the role played by these policies in shaping the electric power industry and make a payback calculation for each technology.
5. The "Energy harvesting" deals with overview of independent ways of generating energy from surroundings for autonomous supplying of wireless sensors, remote electronics and low power devices. Students will be able to analyze ambient energy for energy harvesting from the concrete industrial system.
6. They can select the best way of supplying modern autonomous electronics.

DEPARTMENT OF POLITICAL SCIENCE

PROGRAMME SPECIFIC OUTCOME

As we all know today, Political Science is a social science discipline that not only studies government & state but, at the same time, applies empirical theory & scientific methods to the analysis of political matters. As the world today revolves round political as well as economic considerations, a formal degree of Political Science has the utmost practical applicability. Its subject matter is concerned with the everyday life of an individual living in a society and state. Political Science is the study of political behavior, governance and power and how these are shaped by institutional settings and by the ideas, interests and resources of political actors. Therefore, a degree in political science not only enables students to enhance their grasp of the basic structures and processes of governmental systems, public policies and political forces that directly impact their lives, but also help them analyse political problems, arguments, information and theories and to apply methods appropriate for accumulating and interpreting data applicable to this discipline. Above all, it aids students in becoming informed citizens by amplifying knowledge on their entitlement to the rights and duties within a state.

An Honours graduate of Political Science of the college should possess the capability to:

- Demonstrate an understanding of fundamental political processes, institutions, actors, behavior, and ideas; and familiarity with major theories, methods, and concepts of Political Science.
- Demonstrate a proficiency in thinking systematically about political interactions in national, global and international contexts.
- Demonstrate proficiency in thinking systematically about the ethical dimensions of Politics.
- Write effectively, engage in intellectually grounded oral debate, and form and express coherent arguments.
- Synthesize, analyze, and critically evaluate major arguments in the discipline.
- Comprehend the basic structures and processes of government systems and/or theoretical underpinnings.
- Analyze political problems, arguments, information, and/or theories.
- Apply methods appropriate for accumulating and interpreting data applicable to the discipline of political science.
- Educate the elected representatives about the parliamentary procedures and constitutional position of the country.
- Service to people by opting for civil services.

COURSE OUTCOME (HONOURS)

CO 1. POLITICAL THOUGHT
WESTERN POLITICAL THOUGHT

- It helps students discover the political philosophy that forms the basis of politics in the Western world, to interpret the political philosophies of the Greek, Roman, French, English and German philosophers in historical context as well as relate them to contemporary politics.
- Origin of the knowledge in Political Thought.

- Concretizing their base in political thought.
- Differences of thought in the different phases of the History of political thought:
- Getting enlightened with fundamental features of political thought.
- Helping the students in the future preparation of their course of study in political thought.

INDIAN POLITICAL THOUGHT

- Helping the students in accruing knowledge in the field of Indian Political thought in the initial stage of their study.
- Apprising the students about India' contribution towards the enrichment of the field of political thought.
- Gathering knowledge regarding India's orientation towards politics and apprising the students about the growth of modern democratic political consciousness in India.
- Helping the students in their future course of study in India's political thought.

CO 2. POLITICAL THEORY

- Accruing advance level of knowledge in political theory.
- Helping the students in the future preparation of their course of study in political theory.
- Updating their knowledge level in the field of study of political theory with latest information.
- Helping the students in preparing them for different competitive examinations.

CO 3. GOVERNMENT AND POLITICS IN INDIA

- To understand Functions of Government.
- To understand Judiciary of India.
- To understand Bureaucracy of India.
- To understand biggest Democracy of the World.
- Know the Ministries, their role & responsibilities.
- Know the roles & responsibilities of Members of Parliament/ State Assemblies.
- Know the process of drafting & presenting a Bill in the Parliament / Assemblies.

CO 4. COMPARATIVE GOVERNMENT AND POLITICS

- Accruing knowledge about the structure & functioning of five major governments (UK, USA, CHINA, RUSSIA & SWITZERLAND) in the world.
- Having a comparative study of these governments in a glance.
- Helping the students in building their base in the study of comparative government.
- Accruing knowledge about different forms of government found in different political systems in the world.
- Students have a stronger and more informed perspectives on approaches in studying politics, governments and political systems comparatively. They become familiar with the primary theories and concepts that form the building blocks of the subfield.

CO 5. INTERNATIONAL RELATIONS

- With a focus on politics at the transnational or global level, it demonstrates a generalized understanding of the diplomatic relationship between nation- states, the functioning of international organizations, international law and economy, disarmament and peace efforts, foreign policies of states, the behaviour and roles of nation-states in diverse political situations and also help gain an insight into subjects of Human Rights law and theory.
- Understand the major concepts of international relations, including: power, the international system, balance of power, hegemony, conflict, cooperation, integration, globalization, interdependence, dependence, regimes, globalization, equality, justice, sustainability and international political economy.
- Understanding and critically evaluating the theories and approaches to international relations, including realism, liberalism, classical and neo-Marxism, Neo-Gramscian, critical, postmodernist, post-colonial, sexuality and feminist.
- Identify the key actors in international relations—including states, intergovernmental organizations, non-governmental organizations, transnational corporations, global civil society, and individuals—and understand how these actors interact to give substance to international relations.
- Demonstrate a knowledge of the key dimensions, events and processes of international relations within their historic context, such as: the formation of the modern state system, the Treaty of Westphalia, the evolution of global capitalism, the origins of the Cold War, the shift to the post-Cold War system, the role of race, gender and class in the structure of the modern world system, major conflicts, such as the world wars, US intervention in various places in the world, ascendant conflicts, the features and effects of globalizing market capitalism, growing environmental problems and human rights.
- Demonstrate knowledge of the multi-disciplinary nature of international relations by establishing connections with the disciplines that have shaped and continue to influence international relations: politics, economics, society, culture, history, language, race, ethnicity, gender and sexuality.

CO 6. SOCIETY, STATE and POLITICS

- It promotes knowledge on basic concepts such as politics, power, gender, civil society, citizens, culture and behavior of individuals, how they developed over time and where they stand today. It also helps formulate independently generated and theoretically based research questions within political sociology.
- It helps students in gaining knowledge about how political cultures are formed & shaped, the importance of political socialization process, the causes behind political participation & non-participation, the influence of political parties & the pressure groups in a political system and, further, the concepts of change and political development and how it's being shaped in developing countries.

CO7. PUBLIC ADMINISTRATION

- Demonstrate broad understanding of public affairs, policy development, policy analysis, economic analysis, management skills, and organization theory and their applications to public service.
- Conduct a purposeful inquiry exploring the problem/issue a client is experiencing.
- Apply critical thinking and appropriate technology for public policy analysis.
- Work with and for others in ways that translate community need into policy solutions & public service action to promote a just and humane world.
- The working of local self-governments in our political system.

CO8. COLONIALISM & NATIONALISM IN INDIA & WOMEN POLITICS

- It acquaints the students with the various facets of British rule in India.
- Helps in understanding the process of the growth of Indian national movement.
- Appraises about the various social movements in India, both pre & post-independent.
- It promotes knowledge on how feminist movement has developed & influenced present-day Indian political system.
- Helping the students in preparing them for different competitive examinations, particularly for civil services examinations.

DEPARTMENT OF SOCIOLOGY

PROGRAMME SPECIFIC OUTCOMES

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 Honours Graduate student of Sociology should able to develop:

- Critical Thinking: The programme seeks to develop in students the sociological knowledge and skills that will enable them to think critically and imaginatively about society and social issues.
- Sociological Understanding: The ability to demonstrate sociological understandings of phenomena, for example, how individual biographies are shaped by social structures, social institutions, cultural practices, and multiple axes of difference and inequality.
- Written and Oral Communication: The ability to formulate effective and convincing written and oral arguments.
- Better understanding of real life situation: The ability to apply sociological concepts and theories to the real world and ultimately their everyday lives.
- Analytical thinking: Field survey and preparation of dissertation paper is an inseparable part of Sociology Hons Programme. Students have to collect primary data for census as well as his/her research topic and analyse the data to draw conclusions. So, qualitative and quantitative analytical skills are enhanced.
- Observation power: a sensible observation power is necessary to identify the research problems in field study. So a perception about human society slowly grows up.
- Communication skills and Social interaction power: Students of Sociology stream have to work beyond the class room boundary at the time of field study activities. As a result good communication skill develops while interacting with local people.
- Ethical and Social Responsibility: Students have to learn about institutions, folkways , mores, culture, social control ,social inequality, population composition, population policy, society and culture of India. All these help to instill among the students of Sociology a sense of ethical and social responsibility.
- Professional and Career Opportunities: Students will have the opportunity to join professional careers in Sociology and allied fields. Sociology provides an intellectual background for students considering careers in business, social services, public policy,

government service, nongovernmental organizations, foundations, or academia. This programme lays foundation for further study in Sociology, Social work, Rural Development, Social Welfare and in other allied subjects.

COURSE OUTCOME

COURSE-I: INTRODUCTION TO SOCIOLOGY

The course is intended to introduce the students to a 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

- Define Sociology and demonstrate nature, scope and subject-matter of Sociology.
- Demonstrate how Sociology differ from and similar to other social sciences and their areas of interdependence.
- Acquaint themselves with the basic concepts of Sociology like society, community, association, culture, social change, social stratification etc.
- Know the basic social institutions like family, marriage, kinship in a scientific way.
- Understand and demonstrate how self develops through various process of interaction. Demonstrate how societal and structural factors influence individual behaviour.
- Explain social change and the factors affecting social change. Realize the importance of cultural lag to understand social change.

COURSE-II: RURAL SOCIOLOGY IN INDIA

The course explores substantive issues in Rural Sociology. It gives attention to Indian themes. Studying the course students will be able to

- Define Rural Sociology and demonstrate nature, subject-matter and importance of studying Rural Sociology.
- Understand and analyze social, economic and political aspects of rural society.
- Demonstrate how caste system operates and its importance in rural society.
- Define and demonstrate democratic decentralization of power and importance of Panchayati Raj Institution in bringing about changes in rural society.
- Understand the changes that are taking place in rural society with reference to agrarian reforms and rural development programmes.

COURSE-III: INDIAN SOCIETY AND CULTURE IN INDIA

This course is intended to introduce the students to basic social institutions to describe Indian society and culture of different periods from pre-history to modern era. It also provides knowledge about various social processes that play significant role in bringing about changes in Indian Society and Culture. Studying the course students will be able to

- Explore the roots of Indian civilization.
- Know economy, polity and society of ancient, medieval and modern India.
- Understand and analyze the key concepts of Hinduism, Jainism, Buddhism, Islam and impact of these religions on society.
- Understand and analyze the areas of interrelations between India and South Asia.
- Demonstrate social, economic, political transformation of Indian society under colonial rule.
- Realize the basic issues of Indian society like unity in diversity, problems of nationalism and principles of Indian Constitution.
- Define globalization and analyze its impact on social, economic, political, cultural spheres.

COURSE-IV: SOCIOLOGICAL THEORY

The course aims to provide a general introduction to sociological theory and thought. The paper acknowledges the contributions of both western and Indian scholars in the development of sociology. It provides the students an opportunity to

- Define sociological theory, understand its features and describe and illustrate the role of theory in building sociological knowledge.
- Introduce themselves to the classical theories of Sociology and contributions of different thinkers in this regard.
- Know the contributions of founding fathers of Sociology in developing sociology as an academic discipline.
- Understand the concepts and contributions of Indian social thinkers in the reform of Indian society as well as to enhance knowledge about society.
- Know the contributions of Indian Sociologists in the development of sociological thought.

COURSE-V: SOCIOLOGY OF TRIBES, MINORITIES AND OTHER WEAKER SECTIONS

The course aims to draw attention mainly to the problems, policies and programmes taken for the upliftment of the backward sections of Indian society and causes of their backwardness. The

paper also throws light on the socio –economic life of the backward sections of Indian society. Studying the course students will be able to

- Introduce them with the geographical distribution, economy, polity, social organization of tribal life of India.
- Know the problems faced by the tribes and policies and programmes taken by the Govt. for the upliftment of tribes.
- Understand social, economic and cultural features of minorities and other weaker section in India.
- Learn about the Constitutional Provision for the protection of minorities and other weaker section in India.
- Learn about the Reservation Policy in India.

COURSE-VI: URBAN AND INDUSTRIAL SOCIETY IN INDIA

Urban and Industrial Sociology are two specialized branches of Sociology. This course provides an exposure to key theoretical perspectives for understanding urban life in historical and contemporary contexts. Industrial Sociology intends to familiarize the students mainly with the process of industrialization and its impact on society. Students will get an opportunity to

- Define urban sociology and demonstrate the nature and scope of urban sociology.
- Develop an understanding about trends of urbanization in India and impact of urbanization on Indian society.
- Develop awareness about urban problems and policies adopted to solve such problems.
- Define industrial sociology and demonstrate the nature and scope of industrial sociology.
- Develop an understanding of the process and trends of industrialization in India and impact of industrialization on Indian society.

COURSE-VII: SOCIAL DEMOGRAPHY AND SOCIAL PROBLEMS IN INDIA

This course provides an understanding of the interrelation between population and society. It analyzes the impact of fertility, mortality and migration on the composition, size and structure of population. The course also addresses various problems of Indian society and measures taken to eradicate these problems. Studying the course students will gather knowledge on

- Key concepts of Social Demography.
- Demographic factors of social change.
- Theories of population.
- Factors affecting mortality and fertility.
- Population policy in India.

- Various social problems in India like poverty, illiteracy, domestic violence, violence against women and measures taken to eradicate the problems.

COURSE-VIII: SOCIAL RESEARCH METHODS, FIELD WORK AND VIVA-VOCE

The course is an introductory course on how research is actually done. 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. Field work is an applied part of social research methods. This paper aims to aquaint students with empirical field data collection, analysis and writing analytical and standard dissertation or research report in sociology. From the course students will able to learn about

- Meaning, scope, types and significance of Social Research.
- Importance of research design in Social Research and how to formulate it.
- How to collect, analyze data and how to write a field report.

B.Com (Program Course)

Program Outcome

1. Understand the concepts of basic accounting and business operations.
2. To enrich communication, ethical valves, teamwork, Professional and leadership skill sets of students.
3. To integrate knowledge, skill and attitude that will help the students creativity with an assurance for good careers.
4. To lend manpower needs of companies in Accounting, Taxation, Auditing, Financial Analysis and management.
5. Analyze the economic, social and environmental issues related to business.
6. Ability to work in teams with enhanced inter-personal skills.
7. An inclination towards lifelong learning and acquiring contemporary knowledge.

Program Specific Outcome

- Financial Accounting

  Financial Accounting will help students to obtain an understanding of practical aspects of accounting including in the areas of branch, hire-purchase, joint ventures, consignments and many others.

- Business Law

  This paper will provide an insight into some major laws relevant for operating businesses within Indian Commercial Framework.

- Business Organisation and Management

  Students will have an idea of the basics of management including leadership, motivation, controls etc.

- Corporate Law

Corporate Law governs all the registered companies operating in India and will help commerce students to understand the legal requirements applicable to a company operating in India.

- Income Tax laws and Practices

  Students will learn the direct tax codes applicable to individuals as well as firms, companies etc and understand how taxation laws are applied.

- Corporate Accounting

  This paper aims to provide an insight into techniques of business decision-making in the areas of valuation, amalgamation, holding-subsidiary etc.

- Entrepreneurship

  This paper will provide an understanding of the basic principles of entrepreneurship, classifications of enterprise and utilization of business resources.

- Cost Accounting

  This paper is aimed to help the students assist in understanding the approaches of determining costs of product and services and analysis of the elements of cost.

- Business Mathematics and Statistics

  This paper demonstrates the collection and presentation of business data and the descriptive and inferential analysis of the quantitative data with the analysis of the significance level. Students will also learn theoretical aspects of matrix, determinants, calculus, linear programming and the applications thereof.

- E-Commerce

  Students will have an understanding of how information-technology is used to market products and services and security systems applied over it.

- Banking and Insurance/ Principles of Marketing

  Students will have the choice to learn either the system of banking and insurance or how products and services are marketed and various strategies, considerations, distribution channels related to marketing.

- Management Accounting/Human Resource Management

  Management Accounting will help students to understand the how quantitative information leads to management decision-making. HRM will provide an overall idea about how human

resource is obtained, developed and maintain inside an organization in order to achieve the organizational goal with highest job satisfaction.

- Principles of Microeconomics

  Students will learn the price mechanism and the behaviors of consumers and producers under conditions of extremism. Students will be able to identify the cases where market outcome will be inefficient like monopoly, monopolistic competition and oligopoly.

- Computer Applications in Business

  Students will understand the some computer softwares used in day-to-day business operations including MS Office.

- Computerised Accounting and Systems/Auditing and Corporate Governance

  Students will have the option of either enhancing the skills required for computerized accounting systems or learn the procedures, principles and techniques of auditing and get an overview of Corporate Governance and Corporate Social Responsibilities.

- Financial Markets, Institutions and Financial Services/ Goods and Services Tax and Customs Duty

  Students have the choice of either have the basic knowledge of financial markets, institutions and major financial services in India or learn newest indirect tax laws and tax implications of cross-border transactions.

- Indian Economy

  Students will learn the macro aspects of Indian Economy regarding basic issues and concepts of growth, development, structural changes and policy applications.

- Business Communication

  This paper helps students to learn how formal and written communications are made in business houses.

B.A. PROGRAMME OUTCOME

Following are the expected Programme outcome of UG courses in the social science subjects.

[A] Critical Close Reading

An ability to read critically the prescribed texts and understand its broader implications.

This includes:

- Read closely in a variety of forms, styles, structures, and modes.
- Use of various interpretative techniques.

[B] Critical Thinking

An ability to think critically on various issues and subject matters and relate the same with real life situations.

This includes the ability to:

- synthesize and integrate knowledge.
- Practice and develop argumentative skills.
- In-depth study of the subject matter.

[C] Integration of Knowledge:

Demonstrate detailed knowledge in one or more disciplines and the ability to integrate knowledge across disciplinary boundaries.

This includes the ability to:

- Study the current state of knowledge.
- Multi-disciplinary learning ability.
- Show familiarity with works from other disciplines.

[D] Communication Skill

Demonstrate the ability to extract and convey information accurately in a variety of formats.

This includes:

- An ability to adjust writing style appropriately to the content, the context, and nature of the subject.
- Ability to communicate ideas logically.
- Write clearly and effectively in a variety of forms, adapting writing and analytical skills to all situations

[E] Research Aptitude

Development of a spirit of critical and scholarly enquiry for the subject.

This includes:

- To identify and evaluate appropriate research sources,
- To incorporating the sources into documented academic writing,

- To formulate original arguments in response to those sources.
- To apply appropriate research methodologies to specific problems

[F] Role as a Global Citizen

A critical understanding about the ways of the world and realization of one's role within communities to effect change.

This includes the ability to:

- Demonstration of intercultural awareness .
- To understand the meaning of cultural globalization in true sense.
- Collaborate respectfully with others, individually and in teams.
- Maintain highest ethical standard in personal life.

B.SC PROGRAM COURSE

PROGRAMME OUTCOME

A student after completing his/her B.Sc. degree will be able to:

1. Have an awareness of how science impacts our society and environment and the benefits it offers the society
2. Gain proficiency in the handling of various instruments, softwares etc.
3. Develop basic scientific concepts which will help in rationale thinking and better understanding of various problems.
4. Exhibit excellent problem solving ability by critical thinking and integrating various ideas learned during laboratory experiments or class lectures.
5. Participate in scientific debates or arguments with confidence and will be able to convince the audience by logical presentation.
6. Undertake project work for industry or NGOs regarding water treatment, pollution, data analysis etc.
7. Develop research aptitude and a zeal for higher education.
8. Take up a scientific career in Government or Private sector, schools, pharmaceutical industries etc.