

Learning outcomes that a student should be able to demonstrate on completion of a degree-level programme:

- Demonstrate (i) a fundamental/systematic or coherent understanding of an academic field of study ,its different learning areas and applications, and its linkages with related disciplinary areas/subjects; (ii) procedural knowledge that creates different types of professionals related to the disciplinary/subject area of study, including research and development, teaching and government and public service; (iii) skills in areas related to one's specialization and current developments in the academic field of study.
- Use knowledge, understanding and skills required for identifying problems and issues, collection of relevant quantitative and/or qualitative data drawing on a wide range of sources, and their application, analysis and evaluation using methodologies as appropriate to the subject(s) for formulating evidence-based solutions and arguments;
- Communicate the results of studies undertaken in an academic field accurately in a range of different contexts using the main concepts, constructs and techniques of the subject(s);
- Meet one's own learning needs, drawing on a range of current research and development work and professional materials;
- Apply one's disciplinary knowledge and transferable skills to new/unfamiliar contexts, rather than replicate curriculum content knowledge, to identify and analyse problems and issues and solve complex problems with well-defined solutions.
- Demonstrate subject-related and transferable skills that are relevant to some of the job trades and employment opportunities.

Bachelor's Degree with honours:

- Demonstrate (i) a systematic, extensive and coherent knowledge and understanding of an academic field of study as a whole and its applications, and links to related disciplinary areas/subjects of study; including a critical understanding of the established theories, principles and concepts, and of a number of advanced and emerging issues in the field of study; (ii) procedural knowledge that creates different types of professionals related to the disciplinary/subject area of study, including research and development, teaching and government and public service; (iii) skills in areas related to one's specialization and current developments in the academic field of study, including a critical understanding of the latest developments in the area of specialization, and an ability to use established techniques of analysis and enquiry within the area of specialisation.
- Demonstrate comprehensive knowledge about materials, including current research, scholarly, and/or professional literature, relating to essential and advanced learning areas pertaining to the chosen disciplinary areas (s) and field of study, and techniques and skills required for identifying problems and issues relating to the disciplinary area and field of study.
- Demonstrate skills in identifying information needs, collection of relevant quantitative and/or qualitative data drawing on a wide range of sources, analysis and interpretation of data using methodologies as appropriate to the subject(s) for formulating evidence-based solutions and arguments;
- Can use knowledge, understanding and skills for the critical assessment of a wide range of ideas, complex problems and issues relating to the chosen field of the study.
- Communicate the results of studies undertaken in an academic field accurately in a range of different contexts using the main concepts, constructs and techniques of the subject(s) of study;
- Address one's own learning needs relating to current and emerging areas of study, making use of research, development and professional materials as appropriate, including those related to new frontiers of knowledge.
- Apply one's disciplinary knowledge and transferable skills to new/unfamiliar contexts and to identify and analyse problems and issues and seek solutions to real-life problems.
- Demonstrate subject-related and transferable skills that are relevant to some of the job trades and employment opportunities.

PROGRAMME SPECIFIC OUTCOMES OF UG ENGLISH HONOURS COURSE

Disciplinary Knowledge:

- a) ability to identify, speak and write about different literary genres, forms, periods and movements.
- b) ability to understand and engage with various literary and critical concepts and categories.
- c) ability to read texts closely, paying attention to themes, generic conventions, historical contexts, and linguistic and stylistic variations and innovations.

Communication Skills:

- a) ability to speak and write clearly in standard, academic English.
- b) ability to listen to and read carefully various viewpoints and engage with them.
- c) ability to use critical concepts and categories with clarity.

Critical Thinking:

- a) ability to read and analyze extant scholarship.
- b) ability to substantiate critical readings of literary texts in order to persuade others.
- c) ability to place texts in historical contexts and also read them in terms of generic conventions and literary history.

Problem Solving:

- a) ability to transfer literary critical skills to read other cultural texts.
- b) ability to read any unfamiliar literary texts.

Analytical Reasoning:

- a) ability to evaluate the strengths and weaknesses in scholarly texts spotting flaws in their arguments.
- b) ability to use critics and theorists to create a framework and to substantiate one's argument in one's reading of literary texts.

Research-Related Skills

- a) ability to problematize; to formulate hypothesis and research questions, and to identify and consult relevant sources to find answers.
- b) ability to plan and write a research paper.

Scientific Reasoning:

- a) ability to analyze texts, evaluating ideas and literary strategies.
- b) ability to formulate logical and persuasive arguments.

Reflective Thinking:

- (a) Ability to locate oneself and see the influence of location—regional, national, global—on critical thinking and reading.

Self-Directing Learning:

- a) ability to work independently in terms of reading literary and critical texts.
- b) ability to carry out personal research, postulate questions and search for answers

Digital Literacy:

- a) ability to use digital sources, and read them critically.
- b) ability to use digital resources for presentations.

Multicultural Competence:

- a) ability to engage with and understand literature from various nations and reasons and languages.
- b) ability to respect and transcend differences.

Moral and Ethical Values:

- a) ability to interrogate one's own ethical values, and to be aware of ethical issues.
- b) ability to read values inherited in literary texts and criticism vis-a-vis, the environment, religion and spirituality, as also structures of power.

Leadership Readiness:

Ability to lead group discussions, to formulate questions for the class in literary and social texts.

Life-long Learning:

- a) ability to retain and build on critical reading skills.
- b) ability to transfer such skills to other domains of one's life and work.

PROGRAMME OUTCOMES OF GENERIC ELECTIVE COURSE IN ENGLISH

- a) **Critical Thinking:** Empowerment of students to exercise their ability to think clearly and cogently.
- b) **Cultural Integration:** Enabling students to be aware of the importance of the coexistence of different cultural perspectives and be tolerant to views different from their own.
- c) **Writing:** Students will have an enhanced capability of developing an argument in writing, state facts clearly and cogently and recognize and use the formats of different forms of writing like letters and essays.
- d) **Social Interaction:** Enablement to respond appropriately in discussion, interrupt politely, state their views clearly and accept differences in opinion amicably.
- e) **Ethics:** Students capability to use their sources with proper acknowledgement, and shun plagiarism.
- f) **Self-directed and Lifelong Learning:** Students' capability to access information and knowledge independently.

PROGRAMME OUTCOMES OF ABILITY ENHANCEMENT COMPULSORY COURSES

- a) **Cultural Interaction:** read and comprehend content written in English.
- b) **Writing:** write letters in the correct format.
- c) **Social Interaction:** formulate appropriate curriculum vitae.
- d) **Self-directed and life-long learning:** express themselves in speech and writing.

COURSE OUTCOMES OF UG ENGLISH HONOURS COURSE BA Semester I

CC – I : BASIC LITERARY CONCEPTS

- To know the beauty of the language, forms and types of literature.
- To identify the various forms and types of poetry, drama and fiction.
- To explore literary elements.
- To identify and use the figures of speech.
- To apply literary terminology for Narrative, Poetic and Dramatic genres.
- To appreciate literary form and structure in shaping a text's meaning.

CC – II : WORLD CLASSICAL LITERATURE IN ENGLISH TRANSLATION

- To explore the world of the classics in literature.
- To broaden outlook and sensibility.
- To read and appreciate classical works.
- To evaluate classical texts critically.
- To place and assess their own culture and classics.

BA Semester II

CC – III : INDIAN WRITING IN ENGLISH

- To trace the development of history of Indian Writing in English from Pre-Independence Period to Post-Independence Period.
- To classify the major genres in Indian Writing in English.
- To identify the major literary features in Indian Writing in English.
- To interpret the works of great writers of Indian writers in English.
- To analyze the use of myth in Indian Writing in English and its contemporary relevance.
- To engage with and write cogently on issues specific to modern India and to local realities.

CC – IV : BRITISH LITERATURE (14TH TO 17TH CENTURY)

- To analyse major religious, political and social movements from 14th to 17th century and their influence on literature.

- To delineate major writers and their works in chronological order.
- To classify all major literary genres.
- To compare English Literature of one period with that of another.
- To learn various interpretative techniques to approach literary texts of varied genres.

BA Semester III

CC – V : AMERICAN LITERATURE (19TH & 20TH CENTURY)

- To analyse social, political, religious and economic history of American literature in 19th century and 20th century.
- To understand the historical, religious and philosophical contexts of the American spirit in literature.
- To critically appreciate the diversity of American literature in the light of regional variations in climate, cultural traits, economic priorities
- To explore and understand the nature of the relationships of human beings to other human beings and other life forms in relation to representative literary texts in various genres.
- To analyse the American mind from global and Indian perspectives and situate the American in the contemporary world.

CC – VI : POPULAR FICTION IN ENGLISH

- To know the meaning of Popular Literature and its distinct characters.
- To read and understand some of the representative popular literary pieces of England, America and India.
- To probe into the literary and aesthetic merits of popular fictions.
- To demonstrate how popular literature belongs to its time.
- To use various methods of literary analysis to interpret popular literature.

CC – VII : BRITISH POETRY AND DRAMA (18TH CENTURY)

- To demonstrate in-depth knowledge and understanding of the religious, socio-intellectual and cultural thoughts of the 18th century.
- To show familiarity with major literary works by British writers in the field of Drama and Poetry.
- To examine critically key themes in representative texts of the period.
- To appreciate texts in terms of plot-construction, socio-cultural contexts and genre of poetry and drama.
- To analyze literary devices forms and techniques in order to appreciate and interpret the texts

BA Semester IV

CC – VIII : BRITISH PROSE (FICTION AND NON-FICTION): 18TH CENTURY

- To recognize various types of fictional and non-fictional writings in the 18th century.
- To trace the development of English prose in the 18th century with significant influences and movements.
- To delineate major writers and their works in chronological order.
- To examine critically key themes in representative texts of the period.
- To get acquainted with cultural diversity and divergence in perspectives.

CC – IX : BRITISH PROSE (FICTION AND NON-FICTION): 19TH CENTURY

- To recognize various types of fictional and non-fictional writings in the 19th century.
- To trace the development of English prose in the 19th century with significant influences and movements.
- To delineate major writers and their works in chronological order.
- To examine critically key themes in representative texts of the period.
- To get acquainted with cultural diversity and divergence in perspectives.

CC – X: BRITISH POETRY: 19TH CENTURY

- To analyse how the social, political, religious and economic history of England influences the English poets in the 19th century.
- To trace the development of English poetry in the 19th century with significant influences, movements and trends.
- To delineate major poets and their works in chronological order.
- To explain the diverse poetic devices and strategies employed by poets.
- To enhance the level of literary and aesthetic experience and to help respond creatively.

BA Semester V

CC – XI : WOMEN'S WRITING

- To understand the history of feminism and women's writing in the West and India.
- To analyse the various aspects of feminism.
- To recognise the importance of gender specificity in literature.
- To examine the diverse concerns addressed by feminism.
- To analyse literary works critically from a feminist perspective.

CC – XII : BRITISH WRITING: EARLY 20TH CENTURY

- To analyse major religious, political and social movements of early 20th century and their influence on literature.
- To discuss the salient features of the works of major twentieth century writers.

- To classify all major literary genres.
- To compare English Literature of one period with that of another.
- To learn various interpretative techniques to approach literary texts of varied genres.

BA Semester VI

CC - XIII :MODERN EUROPEAN DRAMA

- To trace the conditions that facilitated the origin and evolution of drama as a literary genre in Europe.
- To 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.
- To examine various literary techniques that writers of 20th century use in writing their texts, and demonstrate an understanding of these techniques.
- To interpret a play with reference to the component elements of drama, as well as to identify the themes reflected in the plot

CC – XIV : POSTCOLONIAL LITERATURE

- To understand the social-historical-political-economic contexts of colonialism and post- colonialism in India, South Africa and America.
- To identify what is distinctly Post Colonial literature
- To read and appreciate Post Colonial literature with insights.
- To understand Post Colonial culture and its varying modes of literary expression.
- To broaden their aesthetic and intellectual faculties.

DISCIPLINE SPECIFIC ELECTIVE (S-V & S-VI)

NATURE AND LITERATURE IN ENGLISH

- To understand the relationship between Nature and Human Society.
- To identify position of Nature in Indian and Western culture.
- To appreciate role of Nature in the Tribal Communities of Jharkhand.
- To understand and appreciate the representation of nature in English and Post-colonial literature.
- To trace the development of Ecocriticism as literary theory.
- To interpret literary works in the light of various eco-critical approaches.

COURSE OUTCOMES OF GENERIC ELECTIVE ENGLISH COURSE

- To identify the various forms and types of poetry, drama and fiction.
- To explore literary elements.
- To identify and use the figures of speech.

- To apply literary terminology for Narrative, Poetic and Dramatic genres.
- To know the meaning of Popular Literature and its distinct characters.
- To read and understand some of the representative popular literary pieces.
- To understand the distinctive features of Indian Writing in English and their history through the texts and contexts of prose and poetry by Indian authors.

COURSE OUTCOMES OF ABILITY ENHANCEMENT COMPULSORY COURSES

AECC - I : WRITTEN COMMUNICATION IN ENGLISH

- To read and comprehend content written in English.
- To engage in all kinds of communication activities – informal, formal/business related and academic.
- To formulate appropriate curriculum vitae applicable for practical purpose.
- To express themselves effectively in speech and writing reports.

AECC - II : ENVIRONMENTAL STUDIES

- To develop observation skills and critical thinking and apply them to the analysis of a problem-infested environment.
- To analyze the principles of ecology and the environmental damage to life-supportive elements such as air, land and water on a global scale.

PROGRAM SPECIFIC OUTCOME OF DOING UG IN URDU LANGUAGE

- To create interest of students in Urdu literature
- To provide basic and essential knowledge in Urdu Grammar, History of Literature and Social and Cultural History of Urdu Speaking Community
- To develop awareness about life through the study of literature
- To increase creativity in constructing different literary forms
- To develop sensitivity and respect towards the Urdu literature
- To teach and create knowledge of the poetry, short stories, drama and prose.

Core Specific Outcomes

CC 1: Urdu Grammar and Composition

- Basic knowledge of reading and writing of Urdu Language and grammar
- Able to have a basic knowledge of Urdu Grammar and compositions
- Able to translate simple Urdu sentences.

CC 2: Urdu Literature

- Get knowledge about History of Urdu Literature, its meanings and importance of the major Urdu Dialects
- Understand the different views about Urdu language and Expansion of Urdu language
- Learn and Grasp the Essence of Urdu poetry, prose, Stories, Short Stories and Novels

- Learn about the major contribution of the famous Urdu writer Sir Sayyed Ahmed Khan in Urdu Literature
- Know about Urdu Literature and its beginning from Dakkan
- Different views about Urdu language
- Gain Knowledge about major dialects of Urdu language
- Acquaint with the History of Urdu Novels, prose, poetry and stories

CC 3: Classical Poetry

- Acquaint with the History of Urdu classical poetry
- Enable the students to appreciate linguistic, aesthetic and critical aspects of classical Urdu Poetry

CC 4: Classical Prose

- The students will know the characteristics of classical Urdu Prose.
- Acquaint with the History of Urdu prose
- Enable the students to appreciate linguistic, aesthetic and critical aspects of classical Urdu Prose

CC 5: Asnaf-e-Adab Urdu

- Get knowledge about different pattern of Urdu Literature
- Acquaint with both prose and poetry
- Enable the students about Novel, Drama, Short stories

CC 6: Urdu Shairiy

- Knowledge gain about Legend Shayar of different period
- Acquaint with epic
- Gives information about Masnavi

CC 7: Urdu Pros

- Find out the similarities between the classical writers and also see the differences of modern and classical Urdu prose.
- Enable the students to appreciate linguistic, aesthetic and critical aspects of classical Urdu Prose
- Make the students familiar about the beginning of Urdu prose
- Make the students familiar about the Urdu prose writers and their literature

CC 8: Introduction of some Important Urdu books.

Aab-e-Hayat, Sher-ul-Ajam, Moquaddama Sher-o- Shairiy and Kashiful Haquaique

- Enable the students to critical understanding and appreciation of
- Students will improve reading and comprehension skills. They will gradually have command over Urdu writing
- Include the study of Socio-Cultural Historical, Political background

CC 9: Modern Urdu Poetry

- Improve knowledge about different movement
- Get motivated for natural Shayari
- Enable the students to appreciate linguistic, aesthetic and critical aspects of modern Urdu Poetry.

CC 10: Modern Urdu Fiction

- Enable the students to know about the problems in society.
- Know the development of modern Urdu fiction.

CC 11: Lessaniyat

- Understand the basic principles of linguistics.

- Understand the relation between dialect and language
- Understand the paradigm of international languages with special reference to Indian languages.
- Evaluate the growth of Hind-Aryayi languages and development of Urdu.
- Theorise the relation between the language and dialect.
- Discuss the different theories concerning the origin of Urdu and come to a conclusion

CC 12: Arooz-o-Balaghat, Applied Urdu

- Help them to become a columnist
- Enable the students to learn about letter writing and grammar for Shayari

CC 13: Nesab Farsi

Grammar and Translation of Persion

- Enable the students to understand the various techniques and language skills.
- Get to know about legend Farsi

CC 14: History of Islam

- Demonstrate knowledge of significant dates and events in Islamic history.
- Reflect on and discuss the ways in which Muslims have interacted over time with other Muslims, on the one hand, and non-Muslims, on the other.
- Analyse critical debates about, and schools of thought on, the meaning of key elements of the faith, such as the Qur'an and Prophet, pilgrimage, Islamic law, and the caliphate.
- Develop an awareness of the interaction between doctrine and context in the understanding of Islam as a faith and a social force.
- Participate in discussions about contested concepts with confidence and with tolerance for other points of view.

DSE 1: Urdu Drama

- Understand the art of drama
- Evaluate multifaceted contexts the both genres and their texts.
- Understand the origin and development of drama
- Critically evaluate the text and communicate effectively on common stage.
- Make short presentations of the drama

DSE II: Urdu Novel

- Understand the art of novel
- Evaluate multifaceted contexts of the both genres and their texts.
- Understand the origin and development of novel
- Critically evaluate the text and communicate effectively on common stage.
- Make short presentations of the novel

DSE III: Quasida

- Acquaint with classical poetry
- Know about famous Quasida Nigar

DSE IV: Marsiah

- Know about Urdu epic
- Know about sacrifices of Imam Hussain and his all family

Programme Learning Outcomes of B.A./B.Sc. (Hons) Mathematics and B.A./B.Sc. with Mathematics as a Subject

- Bachelor's degree in mathematics is the culmination of in-depth knowledge of algebra, calculus, geometry, differential equations and several other branches of mathematics. This also leads to study of related areas like computer science and statistics. Thus, this programme helps learners in building a solid foundation for higher studies in mathematics.

- The skills and knowledge gained has intrinsic beauty, which also leads to proficiency in analytical reasoning. This can be utilised in modelling and solving real life problems.
- Students undergoing this programme learn to logically question assertions, to recognise patterns and to distinguish between essential and irrelevant aspects of problems. They also share ideas and insights while seeking and benefitting from knowledge and insight of others. This helps them to learn behave responsibly in a rapidly changing interdependent society.
- Students completing this programme will be able to present mathematics clearly and precisely, make vague ideas precise by formulating them in the language of mathematics, describe mathematical ideas from multiple perspectives and explain fundamental concepts of mathematics to non-mathematicians.
- Completion of this programme will also enable the learners to join teaching profession in primary and secondary schools.
- This programme will also help students to enhance their employability for government jobs, jobs in banking, insurance and investment sectors, data analyst jobs and jobs in various other public and private enterprises.

Course learning outcomes

Calculus:

- i) Assimilate the notions of limit of a sequence and convergence of a series of real numbers.
- ii) Calculate the limit and examine the continuity of a function at a point.
- iii) Understand the consequences of various mean value theorems for differentiable functions.
- iv) Sketching of curves in Cartesian and polar coordinate systems.
- v) Apply derivative tests in optimization problems appearing in social sciences, physical sciences, life sciences and a host of other disciplines.

Algebra and Geometry:

- i) Understand the importance of roots of real and complex polynomials and learn various methods of obtaining roots.
- ii) Familiarize with relations, equivalence relations and partitions.
- iii) Employ De-Moivre's theorem in a number of applications to solve numerical problems.
- iv) Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix, using rank.
- v) Find eigen values and corresponding eigenvectors for a square matrix.
- vi) Explain the properties of three dimensional shapes.

Multivariable Calculus:

- i) Learn conceptual variations while advancing from one variable to several variables in calculus.
- ii) Apply multivariable calculus in optimization problems.
- iii) Inter-relationship amongst the line integral, double and triple integral formulations.
- iv) Applications of multivariable calculus tools in physics, economics, optimization, and understanding the architecture of curves and surfaces in plane and space etc.
- v) Realize importance of Green, Gauss and Stokes' theorems in other branches of mathematics.

Ordinary Differential Equations:

- i) Understand the genesis of ordinary differential equations.
- ii) Learn various techniques of getting exact solutions of solvable first order differential equations and linear differential equations of higher order.
- iii) Know Picard's method of obtaining successive approximations of solutions of first order differential equations, passing through a given point in the plane and Power series method for higher order linear equations, especially in cases when there is no method available to solve such equations.
- iv) Grasp the concept of a general solution of a linear differential equation of an arbitrary order and also learn a few methods to obtain the general solution of such equations.

v) Formulate mathematical models in the form of ordinary differential equations to suggest possible solutions of the day to day problems arising in physical, chemical and biological disciplines.

Real Analysis:

- i) Understand many properties of the real line \mathbb{R} and learn to define sequence in terms of functions from \mathbb{R} to a subset of \mathbb{R} .
- ii) Recognize bounded, convergent, divergent, Cauchy and monotonic sequences and to calculate their limit superior, limit inferior, and the limit of a bounded sequence.
- iii) Apply the ratio, root, alternating series and limit comparison tests for convergence and absolute convergence of an infinite series of real numbers.
- iv) Learn some of the properties of Riemann integrable functions, and the applications of the fundamental theorems of integration.

Group Theory:

- i) Recognize the mathematical objects called groups.
- ii) Link the fundamental concepts of groups and symmetries of geometrical objects.
- iii) Explain the significance of the notions of cosets, normal subgroups, and factor groups.
- iv) Analyze consequences of Lagrange's theorem.
- v) Learn about structure preserving maps between groups and their consequences.

Probability and Statistics:

- i) Understand distributions in the study of the joint behaviour of two random variables.
- ii) Establish a formulation helping to predict one variable in terms of the other that is, correlation and linear regression.
- iii) Understand central limit theorem, which establish the remarkable fact that the empirical frequencies of so many natural populations, exhibit a bell shaped curve.

Mechanics:

- i) Familiarize with subject matter, which has been the single centre, to which were drawn mathematicians, physicists, astronomers, and engineers together.
- ii) Understand necessary conditions for the equilibrium of particles acted upon by various forces and learn the principle of virtual work for a system of coplanar forces acting on a rigid body.
- iii) Determine the centre of gravity of some materialistic systems and discuss the equilibrium of a uniform cable hanging freely under its own weight.
- iv) Deal with the kinematics and kinetics of the rectilinear and planar motions of a particle including the constrained oscillatory motions of particles.
- v) Learn that a particle moving under a central force describes a plane curve and know the Kepler's laws of the planetary motions, which were deduced by him long before the mathematical theory given by Newton.

Linear Algebra:

- i) Understand the concepts of vector spaces, subspaces, bases, dimension and their properties.
- ii) Relate matrices and linear transformations, compute eigen values and eigen vectors of linear transformations.
- iii) Learn properties of inner product spaces and determine orthogonality in inner product spaces.
- iv) Realise importance of adjoint of a linear transformation and its canonical form.

Partial Differential Equations:

- i) Apply a range of techniques to solve first & second order partial differential equations.
- ii) Model physical phenomena using partial differential equations such as the heat and wave equations.
- iii) Understand problems, methods and techniques of calculus of variations.

Metric Spaces:

- i) Learn basic facts about the cardinality of a set.
- ii) Understand several standard concepts of metric spaces and their properties like openness, closedness, completeness, Bolzano–Weierstrass property, compactness, and connectedness.
- iii) Identify the continuity of a function defined on metric spaces and homeomorphisms.

Advanced Algebra:

- i) Understand the basic concepts of group actions and their applications.
- ii) Recognize and use the Sylow theorems to characterize certain finite groups.
- iii) Know the fundamental concepts in ring theory such as the concepts of ideals, quotient rings, integral domains, and fields.
- iv) Learn in detail about polynomial rings, fundamental properties of finite field extensions, and classification of finite fields.

Mathematical Logic: i) Learn the syntax of first-order logic and semantics of first-order languages.

- ii) Understand the propositional logic and basic theorems like compactness theorem, meta theorem and post-tautology theorem.
- iii) Assimilate the concept of completeness interpretations and their applications with special emphasis on applications in algebra.

Linear Programming:

- i) Analyze and solve linear programming models of real life situations.
- ii) Provide graphical solutions of linear programming problems with two variables, and illustrate the concept of convex set and extreme points.
- iii) Understand the theory of the Simplex method.
- iv) Know about the relationships between the primal and dual problems, and to understand sensitivity analysis.
- v) Learn about the applications to transportation, assignment and two-person zero-sum game problems.

Complex Analysis:

- i) Visualize complex numbers as points of \mathbb{R}^2 and stereographic projection of complex plane on the Riemann sphere.
- ii) Understand the significance of differentiability and analyticity of complex functions leading to the Cauchy–Riemann equations.

Numerical Analysis:

- i) Obtain numerical solutions of algebraic and transcendental equations.
- ii) Find numerical solutions of system of linear equations and check the accuracy of the solutions.
- iii) Learn about various interpolating and extrapolating methods.
- iv) Solve initial and boundary value problems in differential equations using numerical methods.
- v) Apply various numerical methods in real life problems.

Discrete Mathematics:

- i) Learn about partially ordered sets, lattices and their types.
- ii) Understand Boolean algebra and Boolean functions, logic gates, switching circuits and their applications.
- iii) Solve real-life problems using finite-state and Turing machines.
- iv) Assimilate various graph theoretic concepts and familiarize with their applications.

Advanced Mechanics:

- i) Understand the reduction of force system in three dimensions to a resultant force acting at a base point and a resultant couple, which is independent of the choice of base of reduction.
- ii) Learn about a nul point, a nul line, and a nul plane with respect to a system of forces acting on a rigid body together with the idea of central axis.

Calculus:

- i) Calculate the limit and examine the continuity and understand the geometrical interpretation of differentiability.
- ii) Understand the consequences of various mean value theorems.
- iii) Draw curves in Cartesian and polar coordinate systems.
- iv) Understand conceptual variations while advancing from one variable to several variables in calculus.
- v) Inter-relationship amongst the line integral, double and triple integral formulations.
- vi) Realize importance of Green, Gauss and Stokes' theorems in other branches of mathematics.

Algebra:

- i) Employ De Moivre's theorem in a number of applications to solve numerical problems.
- ii) Learn about the fundamental concepts of groups, subgroups, normal subgroups, isomorphism theorems, cyclic and permutation groups.
- iii) Recognize consistent and inconsistent systems of linear equations by the row echelon form of the augmented matrix, using rank.
- iv) Find eigen values and corresponding eigenvectors for a square matrix.
- v) Understand real vector spaces, subspaces, basis, dimension and their properties.

Differential Equations:

- i) Understand the genesis of ordinary as well as partial differential equations.
- ii) Learn various techniques of getting exact solutions of certain solvable first order differential equations and linear differential equations of second order.
- iii) Know Picard's method of obtaining successive approximations of solutions of first order ordinary differential equations, passing through a given point in the plane.
- iv) Learn about solution of first order linear partial differential equations using Lagrange's method.
- v) Know how to solve second order linear partial differential equations with constant coefficients.
- vi) Formulate mathematical models in the form of ordinary and partial differential equations to problems arising in physical, chemical and biological disciplines.

Real Analysis:

- i) Understand basic properties of real number system such as least upper bound property and Order property.
- ii) Realize importance of bounded, convergent, Cauchy and monotonic sequences of real numbers, find their limit superior and limit inferior.
- iii) Apply various tests to determine convergence and absolute convergence of a series of real numbers.
- iv) Learn about Riemann integrability of bounded functions and algebra of R-integrable functions.
- v) Determine various applications of the fundamental theorem of integral calculus.
- vi) Relate concepts of uniform continuity, differentiation, integration and uniform convergence.

Mechanics:

- i) Familiarize with subject matter, which has been the single centre, to which were drawn mathematicians, physicists, astronomers and engineers together.
- ii) Understand necessary conditions for the equilibrium of particles acted upon by various forces and learn the principle of virtual work for a system of coplanar forces acting on a particle.
- iii) Determine the centre of gravity of materialistic systems and discuss the equilibrium of a uniform cable hanging freely under its own weight.
- iv) Deal with the kinematics and kinetics of the rectilinear and planar motions of a particle including the constrained oscillatory motions of particles.
- v) Learn that a particle moving under a central force describes a plane curve and know the Kepler's laws of the planetary motions, which were deduced by him long before the mathematical theory given by Newton.

Probability and Statistics:

- i) Understand the basic concepts of probability.
- ii) Appreciate the importance of probability distribution of random variables and to know the notion of central tendency.
- iii) Establish the joint distribution of two random variables in terms their correlation and regression.
- iv) Understand central limit theorem which shows that the empirical frequencies of so many natural populations exhibit normal distribution.
- v) Study entropy and information theory in the framework of probabilistic models.

Numerical Methods:

- i) Obtain numerical solutions of algebraic and transcendental equations.
- ii) Find numerical solutions of system of linear equations and to check the accuracy of the solutions.
- iii) Learn about various interpolating and extrapolating methods to find numerical solutions.
- iv) Solve initial and boundary value problems in differential equations using numerical methods.
- v) Apply various numerical methods in real life problems.

Laplace Transform:

- i) Know about piecewise continuous functions, Dirac delta function, Laplace transforms and its properties.

Linear Programming and Game Theory:

- i) Analyze and solve linear programming models of real life situations.
- ii) Provide graphical solution of linear programming problems with two variables, and illustrate the concept of convex set and extreme points.
- iii) Solve linear programming problems using Simplex method.
- iv) Learn techniques to solve transportation and assignment problems.
- v) Solve two-person zero sum game problems.

B.Sc. PHYSICS**Programme Learning Outcomes**

- Demonstrate (i) a fundamental/systematic or coherent understanding of the academic field of Physics, its different learning areas and applications, and its linkages with related disciplinary areas/subjects; (ii) procedural knowledge that creates different types of professionals related to the disciplinary/subject area of Physics, including professionals engaged in research and development, teaching and government/public service; (iii) skills in areas related to one's specialisation area within the disciplinary/subject area of Physics and current and emerging developments in the field of Physics.
- Demonstrate the ability to use Physics skills such as formulating and tackling Physics-related problems and identifying and applying appropriate physical principles and methodologies to solve a wide range of problems associated with Physics.
- Can recognise the importance of mathematical modelling and computing; and the role of approximation and mathematical approaches in describing the physical world.
- Plan and execute physics-related experiments or investigations, analyse and interpret data/information collected using appropriate methods, including the use of appropriate software such as programming languages and purpose-written packages, and report accurately the findings of the experiment/investigations while relating the conclusions/findings to relevant theories of Physics.
- Demonstrate relevant generic skills and global competencies such as (i) problem solving skills that are required to solve different types of physics-related problems with well-defined solutions, and tackle open-ended problems that may cross disciplinary-area boundaries; (ii) investigative skills, including skills of independent investigation of physics-related issues and problems; (iii) communication skills involving the ability to listen carefully, to read texts and research papers analytically and to present complex information in a concise manner to different groups/audiences;

(iv) analytical skills involving paying attention to detail and ability to construct logical arguments using correct technical language related to physics; (v) ICT skills; (vi) personal skills such as the ability to work both independently and in a group.

- Demonstrate professional behaviour such as (i) being objective, unbiased and truthful in all aspects of work and avoiding unethical behaviour such as fabricating, falsifying or misrepresenting data or to committing plagiarism; (ii) the ability to identify the potential ethical issues in work-related situations; (iii) appreciation of intellectual property, environmental and sustainability issues; and (iv) promoting safe learning and working environment.

CORE SPECIFIC OUTCOME

CC 1: MATHEMATICAL PHYSICS-I

- Revise the knowledge of calculus, vectors, vector calculus, probability and probability distributions. These basic mathematical structures are essential in solving problems in various branches of Physics as well as in engineering
- Learn the curvilinear coordinates which have applications in problems with spherical and cylindrical symmetries
- Learn the fundamentals of and their applications in solving simple physical problems involving interpolations, differentiations, integrations, differential equations as well as finding the roots of equations.

CC 2: MECHANICS

- Understand laws of motion and their application to various dynamical situations. He / she will learn the concept of conservation of energy, momentum, angular momentum and apply them to basic problems
- Understand the fluid motion, surface tension.
- Understand the analogy between translational and rotational dynamics, and application of both motions simultaneously in analyzing rolling with slipping
- Write the expression for the moment of inertia about the given axis of symmetry for different uniform mass distributions.
- Understand the principles of elasticity through the study of Young Modulus and modulus of rigidity. Understand simple principles of fluid flow and the equations governing fluid dynamics
- Apply Kepler's law to describe the motion of planets and satellite in circular orbit, through the study of law of Gravitation
- Describe how fictitious forces arise in a non-inertial frame, e.g., why a person sitting in a merry-go-round experiences an outward pull

CC 3: ELECTRICITY AND MAGNETISM

- Explain and differentiate the vector (electric fields, Coulomb's law) and scalar (electric potential, electric potential energy) formalisms of electrostatics
- Apply Gauss's law of electrostatics to solve a variety of problems
- Articulate knowledge of electric current, resistance and capacitance in terms of electric field and electric potential
- Demonstrate a working understanding of capacitors
- Describe the magnetic properties of matter
- Apply Kirchhoff's rules to analyze AC circuits consisting of parallel and/or series combinations of voltage sources and resistors and to describe the graphical relationship of resistance, capacitor and inductor
- Apply various network theorems such as Superposition, Thevenin, Norton, Reciprocity, Maximum Power Transfer, etc. and their applications in electronics, electrical circuit analysis, and electrical machines
- Should be able to verify of various circuit laws, network theorems elaborated above, using simple electric circuits.

CC 4: WAVES AND OPTICS

- Recognize and use a mathematical oscillator equation and wave equation, and derive these equations for certain systems

- Apply basic knowledge of principles and theories about the behaviour of light and the physical environment to conduct experiments, interference diffraction
- Understand the principle of superposition of waves, so thus describe the formation of standing waves
- Explain several phenomena we can observe in everyday life that can be explained as wave phenomena
- Use the principles of wave motion and superposition
- Understand the working of selected optical instruments like bi-prism, interferometer, diffraction grating
- In the laboratory course, student will gain hands-on experience of using various optical instruments and making finer measurements of wavelength of light using Newton Rings experiment. Resolving power of optical equipment can be learnt firsthand

CC 5: MATHEMATICAL PHYSICS-II AND THERMAL PHYSICS

- Learn the Fourier analysis of periodic functions and their applications in physical problems such as vibrating strings etc
- Learn about the real gas equations, Van der Waal equation of state, the Joule Thompson effect, Molecular collisions Learn the basic aspects of kinetic theory of gases, Maxwell-Boltzman distribution law, equitation of energies, mean free path of molecular collisions, viscosity, thermal conductivity, diffusion and Brownian motion.

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CC 6: PHYSICS OF THERMODYNAMIC

- Thermodynamics, the concept of entropy and the associated theorems, the thermodynamic potentials and their physical interpretations.
- Learn about Maxwell's thermodynamic relations.
- Comprehend the basic concepts of thermodynamics, the first and the second law of thermodynamics, the concept of entropy and the associated theorems, the thermodynamic potentials and their physical interpretations.

CC 7: ANALOG SYSTEMS AND APPLICATIONS

- N- and P- type semiconductors, mobility, drift velocity, fabrication of P-N junctions; forward and reverse biased junctions
- Application of PN junction for different type of rectifiers and voltage regulators
- NPN and PNP transistors and basic configurations namely common base, common emitter and common collector, and also about current and voltage gain
- Biasing and equivalent circuits, coupled amplifiers and feedback in amplifiers and oscillators.
- To characterize various devices namely PN junction diodes, LEDs, Zener diode, solar cells, PNP and NPN transistors. Also construct amplifiers and oscillators using discrete components.

CC 8: MATHEMATICAL PHYSICS-III

- Learn about the complex numbers and their properties, functions of complex numbers and their properties such as analyticity, poles and residues. The students are expected to learn the residue theorem and its applications in evaluating definite integrals.
- Learn about the Fourier transform, the inverse Fourier transform, their properties and their applications in physical problems.
- They are also expected to learn the Laplace transform, the inverse Laplace transforms, their properties and their applications in solving physical problems.

CC 9: ELEMENTS OF MODERN PHYSICS

- Know main aspects of the inadequacies of classical mechanics and understand historical development of quantum mechanics and ability to discuss and interpret experiments that reveal the dual nature of matter.
- Understand the theory of quantum measurements, wave packets and uncertainty principle.
- Understand the central concepts of quantum mechanics: wave functions, momentum and energy operator, the Schrodinger equation, time dependent and time independent cases, probability density and the normalization techniques, skill development on problem solving e.g.

one dimensional rigid box, tunnelling through potential barrier, step potential, rectangular barrier. Understanding the properties of nuclei like density, size, binding energy, nuclear forces and structure of atomic nucleus, liquid drop model and nuclear shell model and mass formula.

- Ability to calculate the decay rates and lifetime of radioactive decays like alpha, beta, gamma decay. Neutrinos and its properties and role in theory of beta decay.
- Understand fission and fusion well as nuclear processes to produce nuclear energy in nuclear reactor and stellar energy in stars.
- Understand various interactions of electromagnetic radiation with matter. Electron positron pair creation.
- Understand the spontaneous and stimulated emission of radiation, optical pumping and population inversion. Three level and four level lasers. Ruby laser and He-Ne laser in details. Basic lasing.

CC 10: DIGITAL SYSTEMS AND APPLICATIONS

- Basic working of an oscilloscope including its different components and to employ the same to study different wave forms and to measure voltage, current, frequency and phase.
- About analog systems and digital systems and their differences, fundamental logic gates, combinational as well as sequential and number systems.
- Synthesis of Boolean functions, simplification and construction of digital circuits by employing Boolean algebra.
- In the laboratory he is expected to construct both combinational circuits and sequential circuits by employing NAND as building blocks and demonstrate Adders, Subtractors, Shift Registers, and multi-vibrators using 555 ICs.

CC 11: QUANTUM MECHANICS AND APPLICATION

- After an exposition of inadequacies of classical mechanics in explaining microscopic phenomena, quantum theory formulation is introduced through Schrodinger equation.
- The interpretation of wave function of quantum particle and probabilistic nature of its location and subtler points of quantum phenomena are exposed to the student.
- Through understanding the behavior of quantum particle encountering a i) barrier, ii) potential, the student gets exposed to solving non-relativistic hydrogen atom, for its spectrum and eigen functions. Study of influence of electric and magnetic fields on atoms will help in understanding and Zeeman Effect respectively
- Solve Schrodinger equation for ground state energy and wave functions of various simple quantum mechanical one dimensional and three dimensional potentials.

CC 12: SOLID STATE PHYSICS

- A brief idea about crystalline and amorphous substances, about lattice, unit cell, miller indices, reciprocal lattice, concept of Brillouin zones and diffraction of X-rays by crystalline materials. Knowledge of lattice vibrations, phonons and in depth of knowledge of Einstein and Debye theory of specific heat of solids.
- At knowledge of different types of magnetism from diamagnetism to ferromagnetism and hysteresis loops and energy loss.
- Secured an understanding about the dielectric and ferroelectric properties of materials. Understanding above the band theory of solids and must be able to differentiate insulators, conductors and semiconductors
- Understand the basic idea about semiconductors.
- To carry out experiments based on the theory that they have learned to measure the magnetic susceptibility, dielectric constant, trace hysteresis loop. They will also employ to four probe methods to measure electrical conductivity and the hall set up to determine the hall coefficient of a semiconductor

CC 13: ELECTROMAGNETIC THEORY

- Achieve an understanding of the Maxwell's equations, role of displacement current, boundary conditions at the interface between different media.
- Apply Maxwell's equations to deduce wave equation, electromagnetic field energy, momentum and angular momentum density.

- Analyse the phenomena on wave propagation in the unbounded, bounded, vacuum isotropic dielectric medium, guided and unguided media.
- Understand the laws of reflection and refraction and to calculate the reflection and transmission coefficients at plane interface in bounded media.
- Understand the linear, circular and elliptical polarisations of em waves. Production as well as detection of waves in laboratory.
- Understand propagation of em waves in anisotropic media, uni-axial and biaxial crystals phase retardation plates and their uses.
- Understand the concept of optical rotation, theories of optical rotation and their experimental rotation, calculation of angle rotation and specific rotation.

CC 14: STATISTICAL MECHANICS

- Understand the concepts of microstate, macrostate, ensemble, phase space, thermodynamic probability and partition function.
- Understand the combinatoric studies of particles with their distinguishably or indistinguishably nature and conditions which lead to the three different distribution laws e.g. Maxwell-Boltzmann distribution, Bose-Einstein distribution and Fermi-Dirac distribution laws of particles and their derivation.
- Understand the Gibbs paradox
- Learn to derive classical radiation laws of black body radiation. Wiens law, Rayleigh Jeans law,
- Learn to calculate the macroscopic properties of degenerate Bose gas using BE distribution law, understand Bose-Einstein condensation law and liquid Helium. Bose derivation of Plank's law Understand the concept of Fermi energy and Fermi level, calculate the macroscopic properties of completely and strongly degenerate Fermi gas. Understand the application of F-D statistical distribution law to derive thermodynamic functions of a degenerate Fermi gas, electron gas in metals and their properties.

DSE-1: PHYSICS OF DEVICES & INSTRUMENTS

- Metal oxide semiconductors, UJT, JFET, MOSFET, Charge coupled Devices and Tunnel Diode
- Power Supply and the role of Capacitance and Inductance filters.
- Active and passive filters and various types of filters.
- Multivibrators using transistors, Phase locked loops, voltage controlled oscillators
- Basic idea of communication including different modulation techniques.

DSE 2: ADVANCED MATHEMATICAL PHYSICS

- Learn the basic properties of the linear vector space such as linear dependence and independence of vectors, change of basis, isomorphism and homomorphism, linear transformations and their representation by matrices.
- Learn the basic properties of matrices, different types of matrices viz., Hermitian, operators in quantum mechanics. They should also learn how to find the eigenvalues and eigenvectors of linear operators.
- Learn some basic properties tensors, their symmetric and antisymmetric nature, the Cartesian tensors, the general tensors, contravariant, covariant and mixed tensors and their transformation properties under coordinate transformations, physical examples of tensors such as moment of inertia tensor, energy momentum tensor, stress tensor, strain tensor etc.

DSE 3: CLASSICAL DYNAMICS

- Revise the knowledge of the Newtonian, the Lagrangian and the Hamiltonian formulations of classical mechanics and their applications in appropriate physical problems.
- Learn about the small oscillation problems.
- Recapitulate and learn the special theory of relativity- postulates of the special theory of relativity, Lorentz transformations on space-time and other four vectors, four-vector notations, space-time invariant length, length contraction, time dilation, mass-energy relation, light cone and its significance, problems involving energy momentum conservations.

DSE 4: NUCLEAR & PARTICLE PHYSICS

- Learn the ground state properties of a nucleus – the constituents and their properties, mass number and atomic number, relation between the mass number and the radius and the mass number, average density, range of force, saturation property, stability curve, the concepts of packing fraction and binding energy, binding energy per nucleon vs. mass number graph, explanation of fusion and fission from the nature of the binding energy graph
- Learn about the process of radioactivity, the radioactive decay law, the emission of alpha, beta and gamma rays, the properties of the constituents of these rays and the mechanisms of the emissions of these rays, outlines of Gamow's theory of alpha decay and Pauli's theory of beta decay with the neutrino hypothesis, the electron capture, the fine structure of alpha particle spectrum, the Geiger-Nuttall law, the radioactive series.
- Learn the basic aspects of nuclear reactions, the Q-value of such reaction and its derivation from conservation laws, reaction cross-sections, the types of nuclear reactions, direct and compound nuclear reactions, Rutherford scattering by Coulomb potential.
- Learn about the detectors of nuclear radiations- the Geiger-Mueller counter, the ion chamber
- The students are expected to learn about the principles and basic constructions of particle accelerators such as the, cyclotron, and synchrotron. They should know about the accelerator facilities in India.
- Gain knowledge on the basic aspects of particle Physics – Cosmic rays and elementary particle the fundamental interactions, elementary and composite particles, the classifications of particles: leptons, hadrons (baryons and mesons), quarks, gauge bosons. The students should know about the quantum numbers of particles: energy, linear momentum, angular momentum, isospin, electric charge, colour charge, strangeness, lepton numbers, baryon number and the conservation laws associated with them.

UG IN CHEMISTRY

Program Specific Outcome

- Demonstrate(i) a systematic or coherent understanding of the fundamental concepts, principles and processes underlying the academic field of chemistry, its different subfields (analytical, inorganic, organic and physical), and its linkages with related disciplinary areas/subjects; (ii) procedural knowledge that creates different types of professionals in the field of chemistry and related fields such as pharmaceuticals, chemical industry, teaching, research, environmental monitoring, product quality, consumer goods industry, food products, cosmetics industry, etc.; (iii) skills related to specialisation areas within chemistry as well as within subfields of chemistry (analytical, inorganic, organic and physical), and other related fields of study, including broader interdisciplinary subfields (life, environmental and material sciences).
- Apply appropriate methodologies in order to conduct chemical syntheses, analyses or other chemical investigations; and apply relevant knowledge and skills to seek solutions to problems that emerge from the subfields of chemistry as well as from LOCF 15 broader interdisciplinary subfields relating to chemistry
- Use chemical techniques relevant to academia and industry, generic skills and global competencies, including knowledge and skills that enable students to undertake further studies in the field of chemistry or a related field, and work in the chemical and non-chemical industry sectors.
- Undertake hands on lab work and practical activities which develop problem solving abilities required for successful career in pharmaceuticals, chemical industry, teaching, research, environmental monitoring, product quality, consumer goods industry, food products, cosmetics industry, etc.

- Recognize and appreciate the importance of the chemical sciences and its application in an academic, industrial, economic, environmental and social contexts.

CHEMISTRY

Course-level learning outcomes relating to courses within B.Sc. (Honours) degree programme in chemistry are:

SEMESTER – I

C.C.I INORGANIC CHEMISTRY – I

On completion the course, the students should grasp the following information:

1. ATOMIC STRUCTURE – Understand
 - Bohr's Theory and its limitations
 - Le Broglie equation
 - Heisenberg's Uncertainty Principle
 - Schrodinger's Wave Equation
 - Quantum Number
 - Paul's Exclusion Principle
 - Hund's rule of maximum multiplicity
 - Aufbau's Principle
2. PERIODICITY

Use of periodic table the following properties of the S and P Block elements are studied:

- Effective nuclear charge, screening effect and Slater's rule
- Atomic Radii and Ionic Radii
- IONIZATION ENTHALPY
- ELECTRONEGATIVITY with Pauling, Mullikan, Alfred Rachow's laws. Variation of electronegativity.

C.C.II PHYSICAL CHEMISTRY – I

1. GASEOUS STATE

On completion the course, the students should grasp the following information:

- They should understand the postulates and derivation of kinetic gas Equation.
 - They should understand the knowledge of mean free path and viscosity of gases and their relation also.
 - Comprehend the behavior of real gases and derivatives from Ideal behavior.
 - They should interpret the Van der Waal's equation of state and others equation are Berthelot and Dietrich.
 - Finally, Isotherm of real gases and their comparison with Van der Waal's equation and relation between critical constant equation and relation between critical constant and Van der Waal's constant.
2. IONIC EQUILIBRIUM

On completion the course, the students should grasp the following information:

- Understand the degree of ionization and factors affecting the degree of ionization, ionization constant, Ionization of weak acids and bases, pH scale, common ion effect.

- Understand salt hydrolysis, calculation of hydrolysis constant, degree of hydrolysis and pH for different salts. Buffer solutions, Buffer range, Buffer capacity, derivation of Henderson equation. Application of buffer in analytical chemistry.
- Lastly, solubility and solubility product of sparingly soluble salts and application also. Theory of acid-base indicators and selectors and limitations.

SEMSTER – II

C.C.III ORGANIC CHEMISTRY – I

1. BASICS OF ORGANIC CHEMISTRY

- Classify the organic compounds, use Nomenclature, hybridization and shapes of molecules.
- Inductive, electromeric, resonance, mesomeric effects, hyperconjugation for electronic displacements.
- Homolytic and heterolytic fission, curly arrow rules.
- Electrophiles and nucleophiles. Types, shapes and stability of carbocations, carbanions, free radicals and carbenes.

2. STEREOCHEMISTRY

- Fisher projection, Newmann and Sawhorse projection formulae and their interconversions.
- Optical activity, specific rotation, Asymmetry Enantiomers.

3. AROMATIC HYDROCARBONES

- Huckel's rule
- Aromatic character of Arenes
- Cyclic Carbocation / carbanions
- Electrophilic Arom. Substitution
- Halogenation
- Nitration
- Sulphonation
- Friedel-Crafts
- Friedel-Crafts reaction with mechanism
- Di-stereoisomers
- Meso structure
- Racemic mixture
- Resolution

CHEMISTRY OF ALIPHATIC HYDROCARBONS

1. CARBON - CARBON SIGMA BONDS

- Formation of Alkane
- Wurtz Reaction
- Wurtz – Fittig reactions
- Free radical substitution
- Halogenation

2. CARBON – CARBON PI BONDS

- Formation of Alkene, Alkyne by elimination reactions and mechanisms also. Saytzeff and Hofmann elimination
- Electrophilic addition and their mechanism for reaction of alkene (Markownikoff / Anti-Markownikoff rule), Ozonolysis, reduction (Catalytic and chemical) 1,2 and 1,4 addition reactions in dienes, Diels Alder reaction.
- Electrophilic and nucleophilic addition reaction for alkynes. Alkylation of terminal alkyne.

C.C.IV PHYSICAL CHEMISTRY – II

1. CHEMICAL THERMODYNAMICS AND ITS APPLICATION

- Describe the three laws of thermodynamics in detail.
- Relation between heat capacities (C_p and C_v)
- Understand the thermochemistry, heat of reaction, enthalpy of formation of molecules, enthalpy of combustion and its application. Kirchhoff's equation.
- Gibbs-Helmholtz equation and maxwell relation and thermodynamics equation of state.

2. CHEMICAL EQUILIBRIUM

- Criteria of thermodynamics equilibrium chemical equation of Ideal gases, fugacity.
- Equilibrium constants and dependence on temperature, pressure and concentration.
- Thermodynamics derivation of relation between various equilibrium constants K_p , K_c and K_x .
- Le Chatelier principle.

3. SOLUTION AND COLLIGATIVE PROPERTIES

Comprehend the Dilute solutions:

- Raoult's and Henry's laws for lowering of VP.
- Elevation of boiling point.
- Depression of freezing point.
- Osmotic pressure Application.

SEMESTER - III

C.C.V. INORGANIC CHEMISTRY - II

1. ACIDS & BASES

- Bronsted-Lowry concept of acid- base reactions
- Relative strength of acids.
- Types of acid- base reactions.
- Lewis acid-base concept.
- Classification of Lewis acids

2. CHEMISTRY OF s and p BLOCK ELEMENT

- Relative stability of different oxidation states, diagonal relationship and anomalous behaviour of first member of each group. Allotropy and catenation, Complex formation.
- Hydrides and their classification ionic, covalent and interstitial. Basic Beryllium acetate and nitrate.
- Study of following compounds with structure, bonding, preparation, properties and uses: -

Boric acids and borates, Boron nitrides, borohydrides, car boranes graphite compounds, &silanes, oxides and oxoacids of nitrogen. Per Oxo acids of Sulphur, interhalogen compounds pseudo halogens and basic properties of halogens.

3. NOBLE GASES

- Occurrence and uses, rationalization of inertness of Noble gases.
- Clathrates, preparation and properties of XeF_2 , XeF_4 , XeF_6 . Nature of bonding in Noble gases.

- Molecular shapes of Noble gas compounds (VSEPR THEORY).

C.C.VI ORGANIC CHEMISTRY - II

1. CHEMISTRY OF HALOGENATED HYDROCARBONS

- Alkyl Halides: Methods of preparation of S_N^1 & S_N^2 reactions & mechanisms with stereo-chemical aspects.
- Nucleophilic substitution vs elimination.
- Aryl halides: Preparation of Aryl Halide from diazonium salts, nucleophilic aromatic substitution S_NAr .
- Benzyne mechanisms.
- Relative reactivity of alkyl, benzyl, vinyl and Aryl Halides.

2. ALCOHOL, PHENOLS AND EPOXIDES

- ALCOHOLS: - Preparation, properties and relative reactivity of 1° , 2° , 3° alcohols, Bouvaelt-Blanc reduction; Preparation and properties of glycols: Oxidation by periodic acid and lead tetra acetate, Pinacol - Pinacolone rearrangement.
- PHENOL: - Preparation and properties; Acidity and factors effecting it, Ring substitution reaction, Reimer – Tiemann and Kolbe's – Schmidt reaction, Fries and Claisen rearrangement with mechanism.

3. CARBONYL COMPOUNDS

Mechanisms of following reactions: -

- Aldol & Benzoin condensation, Knoevenagel condensation, Perkin, Cannizzaro and Wittig reaction
- Beckmann and Bezilic acid rearrangement
- Baeyer Villager Oxidation, Haioform reaction.
- Clemmenson, Wolf- kishner reduction reaction.
- Keto-enol Tautomerism.Preparation and application of Ethyl acetate

4. CARBOXYLIC ACIDS AND THEIR DERIVATIVES

- Preparation, physical properties and reactions of monocarboxylic acids.
- The reactions of dicarboxylic acids, hydroxy acids and unsaturated acids.
- Preparation and reactions of acid chloride, anhydride, esters and amides.
- Mechanism of acidic and alkaline hydrolysis of esters, claisen condensation, Hofmann bromide degradation and curtius rearrangement.

C.C. VII. PHYSICAL CHEMISTRY - III

1. PHASE EQUILIBRIUM

- Concept of phases, components and degrees of freedom, derivation of Gibbs Phase rule.
- CLAUSIUS-CLAPEYRON equation and its applications to solid- liquid, liquid-vapour, and solid-vapour equilibria.
- Phase diagram for one component system with applications.
- Phase diagram for systems of solid- liquid equilibria involving eutectic, congruent and incongruent m.p.
- NERNST distribution law & its derivation and application.

2. CHEMICAL KINETICS

- Order and molecularity of a reaction, rate laws.
- Differential and Integrated form of rate expressions up to second order reactions, experimental methods of the determination of rate laws.
- ARRHENIUS Equation, Activation Energy.
- Collision theory of Reaction rate.
- LINDEMANN Mechanisms.

3. CATALYSIS

- Types of catalysis, specificity and selectivity.
- Mechanisms of catalyzed reactions at solid surfaces.
- Enzyme catalysis.
- MICHAELIS-MENTON mechanisms.
- Acid-Base catalysis.

4. SURFACE CHEMISTRY

- Physical adsorption, Chemisorption.
- Adsorption isotherms.
- Nature of adsorbed state

SEMESTER – IV

C.C.VIII INORGANIC CHEMISTRY III

1. COORDINATION CHEMISTRY

- Werner' theory, Valence bond theory.
- Crystal field theory for weak & strong fields.
- Factors affecting the magnitude of OCTAHEDRAL vs Tetrahedral coordination.
- Tetragonal distortions from octahedral geometry
- Qualitative aspect of Ligand field theory and MO theory.
- Stereochemistry of complexes with 4 & 6 coordination number.
- Chelate effect.
- Polynuclear complexes and Labile and inert complexes.
- IUPAC Nomenclature of coordination compounds.

2. TRANSITION ELEMENTS

- Electronic configuration, colour, variable valency, magnetic and catalytic properties and ability to form complexes of transition elements.
- Difference between first, second and third transition series.
- Chemistry of Ti, V, Cr, Mn, γFe, and Co in various oxidation state.

3. LANTHANIDS AND ACTINIDS.

- Electronic configuration, oxidation state, colour, spectral and magnetic properties of Lanthanides and Actinides.
- Lanthanide contraction.
- Separation of Lanthanides.

C.C.IX ORGANIC CHEMISTRY III

1. NITROGEN CONTAINING FUNCTIONAL GROUPS

- Preparation and important reactions of nitro compounds, nitriles and isonitriles.
- Preparation and properties of the following reactions: -
- Gabriel phthalimide synthesis, carbylamines reaction, Mannich reaction, Hoffmann's exhaustive methylation, Hofmann- elimination reaction.
- Distinction between primary, secondary and tertiary amines.
- Preparation and applications of Diazonium salts.

2. POLYNUCLEAR HYDROCARBONS

- Preparation and reactions and structure elucidation of Naphthalene, phenanthrene and anthracene.
- Important Derivatives of all three Polynuclear Hydrocarbon.

3. HETEROCYCLIC COMPOUNDS

- Classification, Nomenclature, structure, aromaticity in 5 membered and 6 membered rings containing one Heteroatom.
- Synthesis, reactions and mechanism of Furan, Pyrrole, Thiophene, Pyridine and Pyrimidine.
- Structure elucidation of Indole, Quinoline and Isoquinoline.
- Skraup synthesis, Friedlander's synthesis, Knorr quinoline synthesis, Bischler-Napieralski reaction etc.
- Derivatives of Furan: Furfural and Furoic acid.

C.C.X. PHYSICAL CHEMISTRY IV

1. CONDUCTANCE

- Arrhenius theory of electrolytic dissociation.
- Conductivity, specific conductivity, equivalent and molar conductivity. Variation with dilution for weak and strong electrolytes.
- Kohlrausch law of independent migration of ions.
- Ionic velocities, motilities and their determinations.
- Determination of transference number by Hittorf and moving boundary method.
- Applications of conductance measurement: -

(a) Degree of dissociation of weak electrolytes.

(b) Ionic product of water.

(c) Solubility and solubility product of sparingly soluble salt

(d) Conductometric titrations.

(e) Hydrolysis constants of salts.

2. ELECTROCHEMISTRY

- Faraday's law of electrolysis.
- Chemical, reversible and irreversible cells with examples.

- Determination of e.m.f. of a cell and its measurement.
- Nernst equation.
- Application of e.m.f. measurement in determining: -
 - (a) Free energy, Enthalpy and Entropy of a cell reaction.
 - (b) Equilibrium constant
 - (c) pH values

Concentration cells with and without transference numbers, liquid junction potential.

- Determination of Activity and Activity coefficient.
- Potentiometric titrations (acid-base, redox, precipitation)

SEMESTER – V

C.C. XI. ORGANIC CHEMISTRY IV

1. AMINO ACIDS, PEPTIDES AND PROTEINS

- Amino acids, Peptides and their classification.
- α amino acid-synthesis, Zwitterions. Isoelectric point and electrophoresis.
- Study of Peptides. Methods of peptide synthesis.

2. ENZYMES

- Introduction, classification and characteristics of enzymes.
- Mechanisms of enzyme action.
- Factors affecting enzyme action, coenzymes and cofactors and their role in Biological reaction.
- Specificity of enzyme action, enzyme inhibitors
- Phenomenon of inhibition.

3. PHARMACEUTICAL COMPOUNDS

- Classification, structure and therapeutic uses of antipyretics. Paracetamol.
- Analgesics; Ibuprofen.
- Antimalarial; Chloroquine.
- Antibiotics; Chloramphenicol
- Medical values of Haldi, Neem, vitamin c and antacid

C.C. XII. PHYSICAL CHEMISTRY V

1. QUANTUM CHEMISTRY

- Postulates of quantum mechanics.
- Schrodinger equation and its application to free particle and particle in a box.
- Heisenberg uncertainty principle.
- Wave functions, probability distributions functions.
- Separation of variables, degeneracy.

2. MOLECULAR SPECTROSCOPY

- Interaction of electromagnetic radiation with molecules and various types of spectra. Born-oppenheimer approximation.

- Rotation spectroscopy: - Selection rules, intensities of spectral lines, determination of bond lengths of diatomic and linear triatomic molecules.
- Vibrational spectroscopy: - Classical equation of vibration, computation of force constant, amplitudes of diatomic molecular vibrations. Degrees of freedom for polyatomic molecules modes of vibrations. Vibration-rotation spectroscopy: diatomic vibrating rotator, P, Q, R, branches.

3. PHOTOCHEMISTRY

- Lambert-Beer's law and its limitations.
- Laws of photochemistry,
- Quantum yield, examples of high and low quantum yield.
- Photochemical equilibrium, photosensitized reactions, quenching.
- Role of photochemical reactions in biochemical processes.
- Chemiluminescence.

SEMESTER – VI

C.C. XIII. INORGANIC CHEMISTRY IV

1. THEORETICAL PRINCIPLES IN QUALITATIVE ANALYSIS

- Basic principles involved in analysis of cations and anions and solubility product, common ion effect.
- Principles involved in separation of cations into groups and choice of group reagents.
- Interfering radicals (Borate, oxalate, phosphate) and their removal.

2. INORGANIC POLYMERS

Types of inorganic polymers

- Comparison with organic polymers.
- Applications of silicones and siloxanes.
- Borazines, silicates and phosphazenes and polysulphates.

3. BIOINORGANIC CHEMISTRY

- Metal ions present in biological systems.
- Classification of elements according to their action in biological systems.
- Sodium or Potassium pump, carbonic anhydrase and carboxypeptidase.
- Toxicity of metal ions (Hg, Pb, Cd and As), reasons for toxicity.
- Use of chelating agents in medicine.

4. CATALYSIS BY ORGANOMETALLIC COMPOUNDS

Study of the following industrial processes and their mechanism: -

- (1) Alkene hydrogenation (Wilkinsons catalyst)
- (2) Hydroformylation (Co salts)
- (3) Wacker process
- (4) Synthetic gasoline (Fischer Tropsch reaction)
- (5) Synthesis gas by metal carbonyl complexes.

C.C. XIV. ORGANIC CHEMISTRY IV

1. ORGANIC SPECTROSCOPY

(a) *U.V. SPECTROSCOPY*:

- Types of electronic transitions, chromophore and auxochromes, Bathochromic and Hypochromic shifts.
- Carboxylic acids and esters.
- Conjugated dienes, alicyclic, homo-annular and hetero-annular.
- Extended conjugated systems (aldehydes, ketones, dienes.)
- Distinction between cis and trans isomers.

(b) *IR SPECTROSCOPY*:

- IR absorption positions of O, N, and S containing functional groups
- Fundamental and non-fundamental molecular vibrations.
- Effect of H Bonding, conjugation, resonance and ring size on IR absorptions.
- Fingerprint region and its significance.

2. CABOHYDRATES

- Occurrence, classification and their biological importance.
- (a) Mono-saccharide: - Constitution and absolute configuration of glucose and Fructose.
- Determination of ring structure of glucose and Fructose.
- Haworth projections and conformational structures.
- Interconversions of Aldoses and ketoses.
- Killiani-Fischer synthesis and Ruff degradation.
- (b) Disaccharides: Structure elucidation of MALTOSE, LACTOSE and SUCROSE.
- (c) Polysaccharides: Elementary treatment of Starch, Cellulose and glycogen.

3. DYES

- Classification, color and constitution, Mordant and Vat dyes.
- Synthesis and applications of: -
 - (a) Azo dyes- Methyl orange, and Congo red.
 - (b) Triphenyl methane dye- Malachite green, rosaniline and crystal violet.
 - (c) Phthalein dyes- Phenolphthalein and Fluorescein.
 - (d) Natural dyes- Structure elucidation and synthesis of Alizarin and Indigo tin.
 - (e) Edible dyes with examples.

4. ALKALOIDS

- Natural occurrence, General structural features, isolation and their physiological action.
- Hoffmann's exhaustive methylation, Emde's modification.
- Structure elucidation and Synthesis of Hygrine and Nicotine. Medical importance of Nicotine
- Medical importance of Hygrine, Quinine, Morphine, Cocaine and Reserpine.

DSE CHEMISTRY – I

- Common ion effect
- Principles involved in separation of cations into groups and choice of group reagents.

- Interfering anions and need to remove them after group- ii (fluoride, borate, oxalate and phosphate)
- Detection of following anions in their mixture
 - i) CO_3^{2-} & SO_3^{2-}
 - ii) NO_2^- & NO_3^-
 - iii) Cl^- , Br^- , I^-
 - iv) PO_4^{3-} in the presence of AsO_4^{3-}
- Estimation of carbonate and bicarbonate in their mixture
- Estimation of Fe^{3+} in haematite
- Organic precipitants: Dimethyl Glyoxime, Cup Ferron, 8- hydroxyquinoline
- Estimation of Ba^{2+} , SO_4^{2-} , Cu^{2+}

DSE CHEMISTRY – II

- Origin of spectra
- Fundamentals laws spectroscopy and selection rules
- Basics principles of instrumentation for single and double beam instrument by UV-Visible Spectrometry.
- Basics principles of instrumentation for single and double beam instrument by Infrared Spectrometry.
- Flame Atomic Absorption and Emission Spectrometry – Techniques of atomization and sample introduction. Techniques for quantitative estimation of trace level of metal ions from water samples.
- Conductometric Titrations- principles of conductometric titration
- Estimation of functional groups such as $-\text{OH}$, $-\text{OCH}_3$, $-\text{NH}_2$.
- Determination of molecular weight of carboxylic acids by silver salt method.

CHEMISTRY DSE – III

- Introduction to Green Chemistry, goals of Green Chemistry
- Twelve principles of Green Chemistry with their explanations and examples
- Green solvents, solvent-less processes, energy requirements for reactions.
- Green synthesis of adipic acid, urethane, benzyl bromide, citral, paracetamol, and furfural.
- Oxidation reagents and catalysts, biomimetic, multifunctional reagents, combinational green chemistry.
- Green chemistry in sustainable development.

CHEMISTRY DSE – IV

- Large scale production, uses, storage and hazards in handling of gases like oxygen, nitrogen, chlorine, carbon monoxide, sulphur dioxide and phosgene.
- Manufacture, application, analysis and hazards in handling the chemicals like caustic soda, common salt, borax, hydrogen peroxide, potash alum, potassium dichromate and potassium permanganate.
- Air pollution- air pollutants, types, sources, particle size and chemical nature.
- Major sources of air pollution
- Photochemical smog
- Pollution by SO_2 , CO_2 , CO , H_2S and other foul-smelling gases
- Global warming, ozone depletion by CFC and oxides of nitrogen
- Effects of air pollutions on living organisms and vegetation.
- Water pollution: - Hydrological cycle, aquatic ecosystem Sources and nature of water pollutants, techniques for measuring water pollution.

- Impacts of water pollution on hydrological and ecosystems.

Learning outcomes that a student should be able to demonstrate on completion of a degree-level programme may include the following:

- Demonstrate (i) a fundamental/systematic or coherent understanding of an academic field of study, its different learning areas and applications, and its linkages with related disciplinary areas/subjects; (ii) procedural knowledge that creates different types of professionals related to the disciplinary/subject area of study, including research and development, teaching and government and public service; (iii) skills in areas related to one's specialization and current developments in the academic field of study.
- Use knowledge, understanding and skills required for identifying problems and issues, collection of relevant quantitative and/or qualitative data drawing on a wide range of sources, and their application, analysis and evaluation using methodologies as appropriate to the subject(s) for formulating evidence-based solutions and arguments;
- Communicate the results of studies undertaken in an academic field accurately in a range of different contexts using the main concepts, constructs and techniques of the subject(s);
 - Meet one's own learning needs, drawing on a range of current research and development work and professional materials;
- Can apply one's disciplinary knowledge and transferable skills to new/unfamiliar contexts, rather than replicate curriculum content knowledge, to identify and analyse problems and issues and solve complex problems with well-defined solutions.
- Demonstrate subject-related and transferable skills that are relevant to some of the job trades and employment opportunities.

Bachelor's Degree with honours:

- Demonstrate (i) a systematic, extensive and coherent knowledge and understanding of an academic field of study as a whole and its applications, and links to related disciplinary areas/subjects of study; including a critical understanding of the established theories, principles and concepts, and of a number of advanced and emerging issues in the field of study; (ii) procedural knowledge that creates different types of professionals related to the disciplinary/subject area of study, including research and development, teaching and government and public service; (iii) skills in areas related to one's specialization and current developments in the academic field of study, including a critical understanding of the latest developments in the area of specialization, and an ability to use established techniques of analysis and enquiry within the area of specialisation.
- Demonstrate comprehensive knowledge about materials, including current research, scholarly, and/or professional literature, relating to essential and advanced learning areas pertaining to the chosen disciplinary areas (s) and field of study, and techniques and skills required for identifying problems and issues relating to the disciplinary area and field of study.
- Demonstrate skills in identifying information needs, collection of relevant quantitative and/or qualitative data drawing on a wide range of sources, analysis and interpretation of data using methodologies as appropriate to the subject(s) for formulating evidence-based solutions and arguments;
- Can use knowledge, understanding and skills for the critical assessment of a wide range of ideas, complex problems and issues relating to the chosen field of the study.
- Communicate the results of studies undertaken in an academic field accurately in a range of different contexts using the main concepts, constructs and techniques of the subject(s) of study;
- Address one's own learning needs relating to current and emerging areas of study, making use of research, development and professional materials as appropriate, including those related to new frontiers of knowledge.
- Apply one's disciplinary knowledge and transferable skills to new/unfamiliar contexts and to identify and analyse problems and issues and seek solutions to real-life problems.
- Demonstrate subject-related and transferable skills that are relevant to some of the job trades and Programme Learning Outcomes employment opportunities.

UG IN SCIENCE

Programme learning outcomes relating to B.Sc. Botany

- Core competency: Students will acquire core competency in the subject Botany, and in allied subject areas.
- The student will be able to identify major groups of plants and compare the characteristics of lower (e.g. algae and fungi) and higher (angiosperms and gymnosperms) plants.
- Students will be able to use the evidence based comparative botany approach to explain the evolution of organism and understand the genetic diversity on the earth.
- The students will be able to explain various plant processes and functions, metabolism, concepts of gene, genome and how organism's function is influenced at the cell, tissue and organ level.
- Students will be able to understand adaptation, development and behavior of different forms of life.
- The understanding of networked life on earth and tracing the energy pyramids through nutrient flow is expected from the students. Students will be able to demonstrate the experimental techniques and methods of their area of specialization in Botany.
- Analytical ability: The students will be able to demonstrate the knowledge in understanding research and addressing practical problems.
- Application of various scientific methods to address different questions by formulating the hypothesis, data collection and critically analyze the data to decipher the degree to which their scientific work supports their hypothesis.
- Critical Thinking and problem solving ability: An increased understanding of fundamental concepts and their applications of scientific principles is expected at the end of this course. Students will become critical thinker and acquire problem solving capabilities.
- Digitally equipped: Students will acquire digital skills and integrate the fundamental concepts with modern tools.
- Ethical and Psychological strengthen: Students will also strengthen their ethical and moral values and shall be able to deal with psychological weaknesses.
- Team Player: Students will learn team workmanship in order to serve efficiently institutions, industry and society.
- Independent Learner: Apart from the subject specific skills, generic skills, especially in botany, the program outcome would lead to gain knowledge and skills for further higher studies, competitive examinations and employment. Learning outcomes based curriculum would ensure equal academic standards across the country and broader picture of their competencies.

The course learning outcomes are aligned with program learning outcomes but these are specific-to-specific courses offered in a program. The course level learning shall be reflected as program level learning. The core courses shall be the backbone of this framework whereas discipline electives, generic electives and skill enhancement courses would add academic excellence in the subject together with multi-dimensional and multidisciplinary approach. In course learning outcomes, the student will attain subject knowledge in terms of individual course as well as holistically.

CC 1: Microbiology and Phycology

- Develop understanding on the concept of microbial nutrition
- Classify viruses based on their characteristics and structures
- Examine the general characteristics of bacteria and their cell reproduction/ recombination
- Increase the awareness and appreciation of human friendly viruses, bacteria, algae and their economic importance

CC 2: Bio-molecules and cell

- Develop understanding on chemical bonding among molecules
- Identify the concept that explains chemical composition and structure of cell wall and membrane Classify the enzymes and explain mechanism of action and structure
- Compare the structure and function of cells & explain the development of cells

- Describe the relationship between the structure and function of bio-molecules

CC 3: Mycology and Phytopathology

- Identify true fungi and demonstrate the principles and application of plant pathology in the control of plant disease
- Demonstrate skills in laboratory, field and glasshouse work related to mycology and plant pathology.
- Develop an understanding of microbes, fungi and lichens and appreciate their adaptive strategies Identify the common plant diseases according to geographical locations and device control measures

CC 4: Archegoniatae

- Demonstrate an understanding of archegoniatae, Bryophytes, Pteridophytes and Gymnosperms Develop critical understanding on morphology, anatomy and reproduction of Bryophytes, Pteridophytes and Gymnosperms
- Understanding of plant evolution and their transition to land habitat
- Demonstrate proficiency in the experimental techniques and methods of appropriate analysis of Bryophytes, Pteridophytes, Gymnosperms

CC 5: Anatomy of Angiosperms

- Develop an understanding of concepts and fundamentals of plant anatomy
- Examine the internal anatomy of plant systems and organs
- Develop critical understanding on the evolution of concept of organization of shoot and root apex
- Analyze the composition of different parts of plants and their relationship
- Evaluate the adaptive and protective systems of plants

CC 6: Economic Botany

- Understand core concepts of Economic Botany and relate with environment, populations, communities, and ecosystems
- Develop critical understanding on the evolution of concept of organization of apex new crops/varieties, importance of germplasm diversity, issues related to access and ownership
- Develop a basic knowledge of taxonomic diversity and important families of useful plants
- Increase the awareness and appreciation of plants & plant products encountered in everyday life Appreciate the diversity of plants and the plant products in human use

CC 7: Genetics

- Have conceptual understanding of laws of inheritance, genetic basis of loci and alleles and their linkage
- Comprehend the effect of chromosomal abnormalities in numerical as well as structural changes leading to genetic disorders
- Develop critical understanding of chemical basis of genes and their interactions at population and evolutionary levels
- Analyze the effect of mutations on gene functions and dosage
- Examine the structure, function and replication of DNA.

CC 8: Molecular Biology

- Analyse the structures and chemical properties of DNA and RNA through various historic experiments
- Differentiate the main types of prokaryotes through their grouping abilities and their characteristic Evaluate the experiments establishing central dogma and genetic code
- Gain an understanding of various steps in transcription, protein synthesis and protein modification

CC 9: Plant Ecology and Phytogeography

- Understand core concepts of biotic and abiotic
- Classify the soils on the basis of physical, chemical and biological components
- Analysis the phytogeography or phytogeographical division of India
- Evaluate energy sources of ecological system

- Assess the adaptation of plants in relation to light, temperature, water, wind and fire.

CC 10: Systematics

- Classify Plant systematics and recognize the importance of herbarium and Virtual herbarium
Evaluate the Important herbaria and botanical gardens
- Interpret the rules of ICN in botanical nomenclature
- Assess terms and concepts related to Phylogenetic Systematics
- Generalize the characters of the families according to Bentham & Hooker's and Hutchinson system of classification

CC 11: Reproductive Biology of Angiosperms

- Recall the history of reproductive biology of angiosperms & recognize the importance of genetic and molecular aspects of flower development
- Understand structure and functions of anther wall and pollen wall
- Evaluate the special structures of Ovule
- Solve Self-incompatibility in Pollination and fertilization & relate between Embryo, Endosperm and Seed
- Comprehend the causes of Polyembryony and apomixes with its classification

CC 12: Plant Physiology

- Understand Water relation of plants with respect to various physiological processes.
- Explain chemical properties and deficiency symptoms in plants
- Classify aerobic and anaerobic respiration
- Explain the significance of Photosynthesis and respiration
- Assess dormancy and germination in plants

CC 13: Plant Metabolism

- Differentiate anabolic and catabolic pathways of metabolism
- Recognize the importance of Carbon assimilation in photorespiration
- Explain the ATP-Synthesis
- Interpret the Biological nitrogen fixation in metabolism

CC 14: Plant Biotechnology

- Understand the core concepts and fundamentals of plant biotechnology and genetic engineering
Develop their competency on different types of plant tissue culture
- Analyze the enzymes and vectors for genetic manipulations
- Examine gene cloning and evaluate different methods of gene transfer
- Critically analyze the major concerns and applications of transgenic technology

DSE 1: Plant Breeding

- Understand the methods of crop improvement, introduction selection, Hybridization.
- Get to know about inbreeding, inbreeding depression, Heterosis
- Critically analyze the role of mutation, Polyploidy, distant hybridization
- Evaluate the role of Bio-technology in Crop improvement

DSE 2: Natural Resource Management

- Understand the concept of different natural resources and their utilization
- Critically analyze the sustainable utilization land, water, forest and energy resources.
- Evaluate the management strategies of different natural resources.
- Reflect upon the different national and international efforts in resource management and their conservation

DSE 3: Environmental Education & Waste Management

- Reflect upon the different national and international efforts in resource management and their conservation
- Develop understanding on the concept and issues of global environmental change
- Analyse the causes and effects of depletion of stratospheric ozone layer
- Examine the climate change and its effect on living beings
- Understand the physical basis of natural green gashouse effect on man and materials
- Evaluate human influenced driver of our climate system and its applications

DSE 4: Industrial Environmental Microbiology

- Understand the concept and role of microbes in industry and environment
- Critically analyze the types of bioreactors and the fermentation process
- Evaluate the role of microorganisms in industry and microbes in agriculture
- Reflect upon different Landscaping practices and garden design
- Develop skills on the remediation process of contaminated soils

UG IN ZOOLOGY

Program Specific Outcome

- **Disciplinary knowledge and skills:** Capable of demonstrating (i) comprehensive knowledge and understanding of major concepts, theoretical principles and experimental findings in Zoology and its different subfields (animal diversity, principles of ecology, comparative anatomy and developmental biology of vertebrates, physiology and biochemistry, genetics and evolutionary biology, animal biotechnology, applied Zoology, aquatic biology, immunology, reproductive biology, and insect, vectors and diseases), and other related fields of study, including broader interdisciplinary subfields such as chemistry, physics and mathematics; (ii) ability to use modern instrumentation for advanced genomic and proteomic technology.
- **Skilled communicator:** Ability to impart complex technical knowledge relating to Zoology in a clear and concise manner in writing and oral skills.
- **Critical thinker and problem solver:** Ability to have critical thinking and efficient problem solving skills in the basic areas of Zoology (animal diversity, principles of ecology, comparative anatomy and developmental biology of vertebrates, physiology and biochemistry, genetics and evolutionary biology, animal biotechnology, applied Zoology, aquatic biology, immunology, reproductive biology, insect, vectors and diseases etc.).
- **Sense of inquiry:** Capability for asking relevant/appropriate questions relating to issues and problems in the field of Zoology, and planning, executing and reporting the results of an experiment or investigation.
- **Team player/worker:** Capable of working effectively in diverse teams in both classroom, laboratory and in industry and field-based situations.
- **Skilled project manager:** Capable of identifying/mobilizing appropriate resources required for a project, and manage a project to completion, while observing responsible and ethical scientific conduct; and safety and chemical hygiene regulations and practices.
- **Digitally literate:** Capable of using computers for Bioinformatics and computation and appropriate software for analysis of genomics and proteomics data, and employing modern bioinformatics search tools to locate, retrieve, and evaluate location and biological annotation genes of different species.
- **Ethical awareness/reasoning:** Capable of conducting their work with honesty and precision thus avoiding unethical behavior such as fabrication, falsification or misrepresentation of data or committing plagiarism, and appreciating environmental and sustainability issues. Research ethics committee expects them to declare any type of conflict of interest that may affect the research. Any plan to withhold information from researchers should be properly explained with justification in the application for ethical approval.
- **Lifelong learners:** Capable of self-paced and self-directed learning aimed at personal development and for improving knowledge/skill development and re-skilling.

CORE SPECIFIC OUTCOME

CC 1: Systematics and Diversity of Non Chordate:

- Develop understanding on the diversity of life with regard to protists, non chordates and chordates

- Group animals on the basis of their morphological characteristics/ structures
- Develop critical understanding how animals changed from a primitive cell to a collection of simple cells to form a complex body plan
- Examine the diversity and evolutionary history of a taxon through the construction of a basic phylogenetic/ cladistics tree
- Understand how morphological change due to change in environment helps drive evolution over a long period of time.

CC 2: Principle of Ecology:

- Know the evolutionary and functional basis of animal ecology
- Understand what makes the scientific study of animal ecology a crucial and exciting endeavour
- Engage in field-based research activities to understand well the theoretical aspects taught besides learning techniques for gathering data in the field
- Analyse a biological problem, derive testable hypotheses and then design experiments and put the tests into practice
- Solve the environmental problems involving interaction of humans and natural systems at local or global level

CC 3: Cell Biology

- Understand the functioning of nucleus and extra nuclear organelles and understand the intricate cellular mechanisms involved
- Acquire the detailed knowledge of different pathways related to cell signaling and apoptosis thus enabling them to understand the anomalies in cancer
- Develop an understanding how cells work in healthy and diseased states and to give a 'health forecast' by analyzing the genetic database and cell information
- Get new avenues of joining research in areas such as genetic engineering of cells, cloning, vaccines development, human fertility programme, organ transplant, etc.
- Understand how tissues are produced from cells in a normal course and about any malfunctioning which may lead to benign or malignant tumor.

CC 4: Diversity of Chordates

- Protochordates Character and affinities of Amphioxus Retrogressive metamorphosis in Herdmania
- General characters and classification
- Comparative account
- Respiratory organ in fishes
- Pedogenesis and neoteny with special reference to Axolotl larvae
- Origin and evolution of Amphibia
- Reptiles, Birds & Mammals
- Poisonous and Non-poisonous Snakes of India, Poison's Apparatus and mechanism of biting
- Flight Adaptation and mechanisms of flight
- Structure and Affinities of Prototheria and Metatheria
- Comparative anatomy of Heart, Integument, Aortic Arches and Kidney in vertebrates

CC 5: Mammalian Physiology

- Understand the physiology at cellular and system levels
- Understand the mechanism and regulation of breathing, oxygen consumption and determination of respiratory quotient
- Understand how mammalian body gets nutrition from different biomolecules
- Understand the process of digestion and excretion

- Understand the organization of nervous system and process of nerve conduction
- Understand the process of vision and hearing
- Understand the process of muscle contraction
- Learn the determination of hemoglobin content, blood groups and blood pressure

CC 6: Biochemistry

- Understand about the importance and scope of biochemistry
- Understand the structure and biological significance of carbohydrates, amino acids, proteins, lipids and nucleic acids
- Understand the structure and function of immunoglobulins
- Understand the concept of enzyme, its mechanism of action and regulation
- Understand the process of DNA replication, transcription and translation
- Learn the preparation of models of peptides and nucleotides
- Learn biochemical tests for amino acids, carbohydrates, proteins and nucleic acids
- Learn measurement of enzyme activity and its kinetics.

CC 7: Endocrinology

- Understand neurohormones and neurosecretions
- Learn about hypothalamo and hypophyseal axis
- Understand about different endocrine glands and their disorders
- Understand the mechanism of hormone action

CC 8: Genetics

- Develop an understanding of the fundamental molecular tools and their applications of DNA modification and cloning
- Appreciate shifting their orientation of learning from a descriptive explanation of biology to a unique style of learning through graphic designs and quantitative parameters to realize how such research and innovations have made science interdisciplinary and applied
- Develop future course of their career development in higher education and research with a sound base

CC 9: Evolution

- Acquire an in-depth knowledge on the diversity and relationships in animal world
- Develop a holistic appreciation on the phylogeny and adaptations in animals
- Enable the students to understand the evolution of universe and life
- Understanding on the process and theories in evolutionary biology
- Develop an interest in the debates and discussion taking place in the field of evolutionary biology

CC 10: Animal Behaviour

- Learn a wide range of theoretical and practical techniques used to study animal behaviour
- Develop skills, concepts and experience to understand all aspects of animal behaviour
- Objectively understand and evaluate information about animal behaviour and ecology encountered in our daily lives
- Understand and be able to objectively evaluate the role of behaviour in the protection and conservation of animals in the wild
- Consider and evaluate behaviour of all animals, including humans, in the complex ecological world, including the urban environment

CC 11: Immunology

- Identify the major cellular and tissue components which comprise the innate and adaptive immune system

- Understand how are immune responses by CD4 and CD8 T cells, and B cells, initiated and regulated
- Understand how does the immune system distinguish self from non-self
- Gain experience at reading and evaluating the scientific literature in the area.

CC 12: Developmental Biology

- Develop critical understanding how a single-celled fertilized egg becomes an embryo and then a fully formed adult by going through three important processes of cell division, cell differentiation and morphogenesis
- Understand how developmental processes and gene functions within a particular tissue or organism can provide insight into functions of other tissues and organisms
- Realize that very similar mechanisms are used in very diverse organisms; and development is controlled through molecular changes resulting in variation in the expression and function of gene networks
- Understand how the field of developmental biology has changed since the beginning of the 19th century with different phases of developmental research predominating at different times
- Examine the evolutionary history of the taxa based on developmental affinities
- Understand the relevance of developmental biology in medicine or its role in development of diseases.

DSE 1: Economic Zoology

- Understand the culture techniques of prawn, pearl and fish
- Understand silkworms rearing and their products
- Understand the Bee keeping equipments and apiary management
- Learn various concepts of lac cultivation
- Be aware of a broad array of career options and activities in human medicine, biomedical research and allied health professions.

DSE 2: Biostatistics

- Know the theory behind fundamental bioinformatics analysis methods
- Be familiar with widely used bioinformatics databases
- Know basic concepts of probability and statistics
- Describe statistical methods and probability distributions relevant for molecular biology data
- Know the applications and limitations of different bioinformatics and statistical methods
- Perform and interpret bioinformatics and statistical analyses with real molecular biology data
- Acquire knowledge of various databases of proteins, nucleic acids. Primary, secondary and composite databases.
- Make phylogenetic predictions or prediction of structure of proteins and nucleic acids
- Develop understanding in Primer designing
- Understand data mining tool and its practical application in a case study
- Apply the knowledge in future course of their career development in higher education and research.

CC 13: Molecular Biology and Biotechnology

- Develop an understanding of concepts, mechanisms and evolutionary significance and relevance of molecular biology in the current scenario

- Get well versed in recombinant DNA technology which holds application in biomedical & genomic science, agriculture, environment management, etc. Therefore, a fundamental understanding of Molecular Biology will help in career building in all these fields
- Apply their knowledge in problem solving and future course of their career development in higher education and research
- Get new avenues of joining research in related areas such as therapeutic strategies or related opportunities in industry
- Learn the construction repair and adjustment of any equipment required for a technique
- Develop an understanding of the fundamental molecular tools and their applications of DNA modification and cloning.
- Learn the accuracy of technique
- Learn the maintenance laboratory equipments/ tools, safety hazards and precautions

CC 14: Medical zoology

- Develop awareness about the causative agents and control measures of many commonly occurring diseases
- Develop understanding about the favourable breeding conditions for the vectors
- Devise strategies to manage the vectors population below threshold levels, public health importance
- Undertake measures or start awareness programmes for maintenance of hygienic conditions, avoidance of contact from vector, destruction of breeding spots in the vicinity of houses and cattle shed by public health education campaign.

DSE 3: Wild Life Conservation and Management

- Develop an understanding of how animals interact with each other and their natural environment Develop the ability to use the fundamental principles of wildlife ecology to solve local, regional and national conservation and management issues
- Develop the ability to work collaboratively on team-based projects
- Demonstrate proficiency in the writing, speaking, and critical thinking skills needed to become a wildlife technician
- Gain an appreciation for the modern scope of scientific inquiry in the field of wildlife conservation management
- Develop an ability to analyze, present and interpret wildlife conservation management information

DSE 4: Agrochemical and Pest Management

- Gain knowledge and expertise on the agrochemicals and their modes of action and their fates in the agro-ecosystem
- Have the knowledge of pesticide families and be able to differentiate among families based on their specific modes of activity
- Aware of the laws and regulations governing the proper use of pesticides
- Develop appropriate pesticide management strategies by evaluating specific pest type
- Understand the factors involved in calibrating equipment for pesticide applications
- Estimate the potential hazards to humans, wildlife, and the environment

PROGRAM SPECIFIC OUTCOME OF DOING BCOM

- Develop a basic understanding of elements of Business Environment and to encourage rational thinking and problem solving skill among the students so as to facilitate rational decision making under dynamic situations.

- Develop comprehensive knowledge of Finance, Accounting, Business Management, Taxation and Business law.
- Increase awareness among the students regarding Socio- economic policies of the Government and their impact on Indian economy.
- Enable the students to find solutions to the real life business problems through the application of theoretical principles and concepts.
- Develop professional and leadership qualities among students so as to encourage entrepreneurship
- Enable the students to become skill enriched to facilitate greater employability
- Encourage students to apply ethical practices in Business and professional environment
- Enable students for competitive exams

CORE SPECIFIC OUTCOMES

FINANCIAL ACCOUNTING I

- Able to define bookkeeping and *accounting*
- Explain the general purposes and functions of accounting
- Explain the differences between management and financial accounting
- Describe the main elements of financial accounting information – assets, liabilities, revenue and expenses
- Identify the main financial statements and their purposes

BUSINESS LAW

- Demonstrate an understanding of the Legal Environment of Business.
- Apply basic legal knowledge to business transactions.
- Communicate effectively using standard business and legal terminology

MANAGEMENT PRINCIPLES AND APPLICATION

- Provide the student with an understanding of basic management concepts, principles and practices.

CORPORATE LAWS

- Impart basic knowledge of the provisions of the Companies Act 2013 and the Depositories act, 1996.
- Case studies involving issues in corporate laws are required to be discussed.

BUSINESS STATISTICS

- Student is expected to be equipped with the tools of processing and description of statistical data.
- Student will develop competence to use computer for statistical calculations especially for comparatively large- sizes problems

FINANCIAL ACCOUNTING II

- Help students to acquire conceptual knowledge of the financial accounting and to impact skills for recording various kinds of business transactions.

INCOME TAX LAW AND PRACTICES

- Provide basic Knowledge and equip students with application of principles and provisions of Income Tax Act, 1961.

HUMAN RESOURCE MANAGEMENT

- Contribute to the development, implementation, and evaluation of employee recruitment, selection, and retention plans and processes.

- Facilitate and support effective employee and labour relations in both non-union and union environments.
- Research and support the development and communication of the organization's total compensation plan
- Facilitate and communicate the human resources component of the organization's business plan.
- Conduct research, produce reports, and recommend changes in human resources practices.

APPLIED MONEY AND BANKING

- Provide the student with knowledge of basic concepts.

E- COMMERCE

- Become familiar with mechanism for conducting business transactions through electronic means.

INDIRECT TAXES

- Provide basic knowledge and equip students with applications of principles and provisions of Service Tax, VAT, Central Excise and Customs Law

CORPORATE ACCOUNTING

- Acquire the conceptual knowledge of the corporate accounting and to learn the techniques of preparing the financial statements

COMPUER APPLICATIONS IN BUSINESS

- Provide computer skills and knowledge students and to enhance the student understands the usefulness of information technology tools for business operations.

INDIAN ECONOMY –PERFORMANCE AND POLICIES

- Comprehensive understanding of Indian Economy
- Student will be able to understand govt policies and programs

ENTREPRENEURSHIP

- Orient the learner toward entrepreneurship as a career option and creative thinking and behaviour for effectiveness at work and in life

COST AND MANGEMENT ACCOUNTING

- Acquaint the students with basic concepts management accounting and various methods involved in cost ascertainment systems

PRINCIPLES OF MARKETING

- Provide basic knowledge of concepts, principles, tools and techniques of marketing

FINANCIAL MANAGEMENT

- Familiarize the students with the principles and practices of financial management.

FINANCIAL MARKETS, INSTITUTIONS AND FINANCIAL SERVICES

- Provide the students a basic knowledge of financial markets and institutions and to familiarize them with major financial services in India

CORPORATE TAX PLANNING

- Provide basic knowledge of corporate tax planning and its impact on decision- making

ADVERTISING

- Familiarize the students with the basic concepts, tools and techniques of advertising used in marketing.

ORGANISATIONAL BEHAVIOR

- Develop a theoretical understanding among students about the structure and behaviour of organization as it develops over time.
- Capable of realizing the competitiveness of firms

AUDITING AND CORPORATE GOVERNANCE

- Provide knowledge of auditing principles, procedures and techniques in accordance with current legal equipment and professional standards.

BUSINESS RESEARCH METHOD AND PROJECT WORK

- Provide the real understanding of business research and its method
- Impart learning about how to collect, analyze present and interpret data.

INTERNATIONAL BUSINESS

- Expose students to the concept, importance and dynamics of international business and India's involvement with global business operations
- Discuss theoretical foundations of international business to the extent these are relevant to understand the mechanics of global business operations and development

FUNDAMENTALS OF INVESTMENT

- Familiarize the students with different investment alternatives, introduce them to framework of their analysis and valuation and highlight the role of investor protection

CONSUMER AFFAIRS AND CONSUMER CARE

- Understand the voluntary and legal measures to protect consumers from unethical, exploitative and unfair trade practices of business
- Understand the social, economic and legal consequences of business decisions affecting consumers

BUSINESS TAX PROCEDURE AND MANAGEMENT

- Provide basic knowledge of business tax procedures and management under different provisions of the Income Tax

INDIAN POLITY AND GOVERNANCE

- Know about the structure and working of the Indian political system and governance

PROGRAM SPECIFIC OUTCOMES (PSO): B. A. ECONOMICS

On completion of B.A (Economics), Students are able to:

1. Understand the concepts of micro and macro economics theory and its applications.
2. Ability to learn and acquire knowledge based on economic principles including market functions and structures, efficiency in manpower and resources management, need of credit/finance for initiating and accelerating projects.
3. Get knowledge of public policies and operations which involve the use of tax, expenditure, and budget policy, use of resources and distribution of Income.
4. Get knowledge on overall economic performance & be well trained about the rationale of recent changes in the export import policies of India.
5. They have knowledge in statistics & mathematical economics, it enhances them to compute and assess the real situation of the economy including the size and changes of population, income pattern, nature of unemployment, rate of development with pattern of investments and savings, economic growth & policies in relation to other countries.
6. Students have the knowledge of Financial Institutions and its function also have the idea of market structure in the economy.
7. Promoting safe learning and ability to pursue higher studies.
8. Ability to get employment in various services of Economics, Statistics and Banking.

COURSE SPECIFIC OUTCOMES (CSO): B. A. ECONOMICS

ECN – CC1: Micro Economics I

On completion of the course, students are able to

1. Understand the nature, scope & methodology of economics.
2. Understand the Basic Micro- Economic Problems of Scarcity and Choice, demand & Elasticity of demand.
3. Understand concepts of Revenues and cost of Production, Law of Variable proportions, Returns to Scale, Cobb- Douglas Production Function.
4. Get the knowledge about the theory of consumer behavior & producer behavior.

ECN – CC2: Money and Banking

On completion of the course, students are able to

1. Understand financial institutions & its services in India
2. Create the awareness among the students of Modern Banking System.
3. Knowledge of commercial banking system in India
4. Understand process of credit creation by commercial banks
5. Understand working & operation of RBI
6. Able to understand the Indian financial market system

ECN – CC3: Macro Economics I

On completion of the course, students are able to

1. Understand macro economic analysis.
2. Know about the aggregates and measurement of national income.
3. Understand classical & Keynesian theories of output and employment.
4. Know the concept of consumption & Investment function.
5. Understand the theory of demand for money and supply of money and Quantity theory of money.
6. Get the knowledge of money in modern economy, monetary aggregates, credit creation and monetary policy.

ECN – CC4 Indian Economics

On completion of the course, students are able to

1. Develop ideas of the basic characteristics of Indian economy, its potential on natural resources.

2. Get the basic knowledge about the nature, structure, basic Characteristics and major issues of Indian economy.
3. Know the concept of population, Poverty and Unemployment and their trends in Indian economy.
4. Understand role of agriculture & industrial sector in Indian economy.
5. Understand Salient Features of Economy of Jharkhand.
6. Understand Role of external sector in foreign trade and FDI.

ECN – CC5: Micro Economics II

On completion of the course, students are able to

1. Understand the Structure of perfect and imperfect market competition (monopoly, monopolistic, oligopoly & duopoly).
2. Understand the theories of Profit Maximization of the Firm & the price formation in different markets structures and the equilibrium of a firm and Industry.
3. Get the ideas of the theory of factor pricing distribution (Rent, wages, interest and Profit.)
4. Understand the meaning of economic efficiency & social welfare.

ECN – CC6: Statistical Methods in Economics

On completion of the course, students will know about

1. Role of quantitative techniques in economics.
2. The basic concepts of statistics and graphical presentation of data.
3. The measures of central tendency, Dispersion, Skewness and kurtosis of statistical data.
4. Idea how to analysis correlation and regression coefficients.
5. The concepts and rules of probability.
6. Calculation and analysis the Time Series data and application of Index Numbers.

ECN – CC7: Macro Economics II

On completion of the course, students are able to

1. Understand macro economic analysis.
2. Get the knowledge of national income & social accounting.
3. Understand classical & Keynesian theories of output and employment.
4. Understand effective demand, consumption & Investment function
5. Recognize the theory of multiplier and acceleration theory.

6. Understand different phases of trade cycle & have knowledge in various trade cycle theories.
7. Illustrate the meaning, causes and effects of inflation on different sectors in the economy & describe measures to control inflation.

ECN – CC8: Mathematical Methods for Economics

This paper will provide

1. knowledge on applications of mathematical methods in economics
2. Basic concept of Set, functions and its operations in economics theory.
3. Get knowledge of matrix algebra and determinants.
4. Information about the use of limits, differentiation and its application in economics.
5. Knowledge of Integral calculus and its economic applications.

ECN – CC9: International Economics

Students are able to

1. Understand basic concept and scope of International Economics
2. Knowledge of International trade policies, types of exchange rates & foreign exchange theory
3. Realizing the volume, composition and direction of Balance of trade and Balance of payments.
4. Knowing the changes in the import-export policies of India.
5. Discussing the types and effects of tariffs and quotas.
6. Understand the International Financial Institutions and India.

ECN – CC10: Economic Development & Policies in India

Students are able to

1. Understand the concept of Issues in Growth, Development and Sustainability
2. Understand factors in development, relation between population and economic development.
3. Get knowledge about the occupational structure of organized and non organized sectors in India.
4. Understand Approaches of Indian economic development.

ECN – CC11: Growth and Development

After going through this course, the students will have an idea of

1. Differences between Economic growth and Development, Indicators of Economic Development.
2. Factors affecting economic growth & obstacles of development.
3. Demographic transition, capital formation and poverty line.
4. Theories of growth and development models.
5. The role of monetary and fiscal policies & external resources.

ECN – CC12: History of Economic Thought

Students are able to

1. Know about the systematic development of economic theories beginning from pre-modern and modern era.
2. Acquaintance with the economic thoughts of Classical, Nationalist and Socialist thinkers.
3. Realizing the economic concepts and theories of Neo-classical and Indian thinkers.
4. Evaluating the development of Indian economic thoughts.

ECN – CC13: Public Finance

On completion of the course, students are able to

1. Understand Meaning, Nature, and Scope & Importance's of public finance.
2. Understand functions and approaches about role of Government.
3. Get knowledge of Principle of Maximum Social Advantage.
4. Get the information about the concept of public expenditure & public revenue.
5. Understand incidence & approaches of taxation
6. Understand concept of public debt, concept of budget & deficit finance
7. Understand fiscal policy in India

ECN – CC14: Environmental

This paper gives knowledge about –

1. The environmental issues and economy.
2. Basic concepts of ecology, Public good, elementary capital, externalities and common property resources.
3. Solution to environmental problems- related to land, forest, pollution prevention and natural resources.
4. Sustainable development, environmental impact assessment
5. Environmental policies to ensure environmental protection and pollution control measures.

Discipline Specific Elective (DSE)

Students will opt for any one of the following groups as DSE Paper

(OPTIONAL PAPERS)

GROUP A: Mathematical Economics (DSE – I & III) and Econometrics (DSE – II & IV).

GROUP B: Agricultural Economics (DSE – I & III) and Demography (DSE – II & IV).

GROUP C: Industrial Economics (DSE – I & III) and Financial Institutions (DSE – II & IV).

GROUP A-: MATHEMATICAL ECONOMICS AND ECONOMETRICS

DSE I: Mathematical Economics – I

This course is to equip the students with mathematical tools for analyzing economic problems.

1. Understand the role of mathematics in economics
2. Basic concept of Set, functions and its operations in economics theory.
3. Get knowledge of functions, limits and continuity.
4. Information about the use of differentiation and its application in optimization of functions in economics theory.
5. Get knowledge of Partial Derivatives, Integral calculus and their applications in Economics.

DSE II: Econometrics – I

The aim of this course is to provide

1. Basic & foundation knowledge in econometric analysis and develop skills required for empirical research in economics.
2. Understand the importance of error term in econometrics.
3. Get knowledge of the properties of ordinary least square method.
4. Idea about Elementary probability theorems and including probability distributions.
5. Knowledge about the uses of correlation and simple regression analysis.

DSE III: Mathematical Economics – II

The students are able to

1. Get knowledge of matrix algebra and determinants.
2. Understand the uses of Game theory in economics.
3. Get knowledge of linear programming for profit maximizing and cost minimizing.
4. Understand the input output analysis to know relationship among inter industries.

DSE IV: Econometrics – II

Students are able to

1. Understand importance of Sampling distribution, & error terms in econometrics.
2. Get idea about the testing of hypothesis based on t and chi – square statistics.
3. Understand the properties of OLS Estimators & Gauss – Markov Theorem.
4. Get knowledge of the problems of PLS estimation – Multicollinearity, Auto-correlation & Heteroscedasticity.

GROUP B: AGRICULTURAL ECONOMICS AND DEMOGRAPHY

DSE I: Agricultural Economics – I

Students are able to

1. Enable the student to learn the importance of agriculture in Indian economy.
2. Provide basic knowledge about rural economy, place of agriculture, diversification of agriculture & forestry in India.
3. Enable the students to learn the rural industrialization and rural infrastructure.
4. Understand the linkages between agriculture sector and non- agricultural in India.
5. Get knowledge of land reforms in India.

DSE II: Demography - I

On completion of the course, students are able to

1. Understand Nature, Scope and Relationship between development and Population growth.
2. Get the information about various theories of Population.
3. Understand Structure and characteristics Indian population.
4. Learn and get the information of Indian population policy.

DSEIII: Agricultural Economics – II

Students will acquire

1. Knowledge on the progress of technical change in agriculture.
2. Knowledge about agriculture planning, food security & Public Distribution System in India.
3. The information and basic concept of agriculture marketing and finance in India.
4. To learn the importance of rural economy in Indian economy.
5. Knowledge about Globalization of Indian Economy and its Effects on Indian Agriculture.

DSE IV: Demography II

Students are able to

1. Understand the techniques of analysis of population demography of India.
2. Get knowledge of population projection with reference to India.
3. Understand the population policy and demographic status.
4. Learn the salient features of recent census.

GROUP C: INDUSTRIAL ECONOMICS AND FINANCIAL

INSTITUTIONS

DSE I: Industrial Economics – I

1. Provide knowledge about the industry and economic development, industry and sectoral linkages in India.
2. Understand Industrial organization and ownership Structure in India.
3. Understand Theories of Industrial Location.
4. Impart the knowledge about the composition of industrial sector.

DSE II: Financial Institutions – I

On completion of the course, students are able to

1. Get knowledge about the functions and types of money, supply of money, money market and capital market in India.

2. Understand commercial banking system in India
3. Understand process of credit creation by commercial banks
4. Create the awareness among the students in foreign exchange markets.

DSE III: Industrial Economics – II

1. To make the students aware of the basic issues such as productivity, efficiency & capacity utilization involved in the industrial development of India.
2. Understand the mode of financing to industry
3. Get knowledge of Indian industry in the international context.
4. To impart the knowledge of industrial development of India like - structure, policy, reforms, growth and pattern.
5. Understand structure and dimension of industrial labour in India.

DSE IV: Financial Institutions – II

1. Understand central banking system & instrument of credit control in India
2. This course exposes students to the theory and functioning of the monetary policy of RBI.
3. Understand the functions and growth of financial institution in India.
4. Get knowledge of growth and importance of NBFs and measures taken by RBI and SEBI to regulate working of NBFs.
5. Understand the Financial markets in India.
6. Get knowledge of SEBI and working of capital markets in India.

Program Specific Outcome of Geography

- Demonstrating the understanding of basic concepts in geography.
- Demonstrating the coherent and systematic knowledge in the discipline of geography to deal with current issues and their solution.
- Display an ability to read and understand maps and topographic sheets to look at the various aspects on the space.
- Cultivate ability to evaluate critically the wider chain of network of spatial aspects from global to local level on various time scales as well.
- Recognize the skill development in Geographical studies programme as part of career avenues in various fields like teaching, research and administration. It is also suggested that after the completion of B.A. /B.Sc. (Hons.) Programme, students should be able to demonstrate the knowledge obtained in such way so that they can explore the employability options and service to the society

Core Specific Outcome

CC 1: Introduction to Geography

- Identify broad themes within geography, the types of questions addressed by geographers, and the tools used to conduct geographic research
- Read and evaluate maps
- Apply the major theories of physical geography to understanding the natural landscape, including plate tectonics, erosional landforms, basic weather processes, the distribution of climates, and the distribution of biota and resources
- Explain the distribution of people across the Earth on the basis of population, migration, and resources
- Understand the role of culture in shaping human diversity and human impacts on their environments with respect to gender, sexuality, race and ethnicity, language, and religion

- Analyze the factors that shape human interactions across spatial distances
- Explain the processes by which humans modify the natural environment (particularly climate change and agriculture), and the ramifications of those changes for human societies
- Apply concepts of space and place to understand and identify how regions are defined and the ramifications for local and global processes.

CC 2: Geo- Tectonics and Geomorphology

- Understand the functioning of Earth systems in real time and analyze how the natural and anthropogenic operating factors affects the development of landforms
- Distinguish between the mechanisms that control these processes
- Assess the roles of structure, stage and time in shaping the landforms, interpret geo-morphological maps and apply the knowledge in geographical research.

CC 3: Contemporary Issues in Geography

- Understand the issue that is currently affecting people or places and that is unresolved
- Understand a topic, concern or problem, debate, or controversy related to a natural and/or cultural environment, which includes a spatial dimension
- Understand the nature of geographic issue and the values and perceptions that relate to the issue

CC 4: Climatology and Oceanography

- Understand the elements of weather and climate and its impacts at different scales
- Comprehend the climatic aspects and its bearing on planet earth
- Understand the oceanic process and availability of resources.

CC 5: Biogeography

- Familiarise the dynamics of climate and related theories
- Understand of Vegetation as an index of climate
- Assess of different aspects of floral and faunal provinces

CC 6: Geography of India

- Understand the physical profile of the country (drainage, climate, climatic regions, Edaphic and Biotic regions of India)
- Study the resource endowment and its spatial distribution and utilization for sustainable development, geographical problems as unreliability of rain fall, salinity and its mitigation, slum etc.
- Synthesise and develop the idea of regional dimensions

CC 7: Geography of Jharkhand

- Understand the physical profile of the Jharkhand
- Study the resource endowment and its spatial distribution and utilization for sustainable development
- Synthesise and develop the idea of regional dimensions

CC 8: Geography of Three Northern Continents

- Explain how Earth's three Northern continents evolved from Pangaea
- List and describe key geographical features of these continents of Earth
- Discuss cultural and political nuances of each continent
- Summarize the major countries that make up each continent

CC 9: Geography of Three Southern Continents

- Explain how Earth's three southern continents evolved from Pangaea
- List and describe key geographical features of these continents of Earth
- Discuss cultural and political nuances of each continent
- Summarize the major countries that make up each continent

CC 10: Geography of Travel and Tourism

- Equip with a basic understanding of nature and scope, trends and patterns of various types of tourism
- Have sound knowledge on geographical, environmental and socio-cultural aspects of tourism in India

- Apply the principles of Geo-tourism and analyse the prospects and problems associated with pilgrimage tourism.

CC 11: Human Geography

- Know the changing human and cultural landscape at different levels.
- Understand patterns and processes of population growth and its implications.
- Appreciate the nature and quality of human landscape

CC 12: Economic Geography

- Understand how in an increasingly globalized world, economic activities occur unevenly over geographical space; how local places and global economy are intertwined, and how the regime of neoliberal policies are generating uneven geography of capitalist development.
- Introduce to demographic, social and cultural attributes such as migration, social relations and cultural identity.
- Understand that human activities are subject to adaptation and change
- Understand the processes driving spatial economic differences in a global era, and the roles of key factor such as transnational firms and the state
- Abstract and utilize information on economic change from a range of different sources.

CC 13: Environmental Geography

- Understand the dynamic interactive relationship between man and environment
- Have sound understanding on distribution, utilization and proper management of natural resources at global level
- Make assessment and review of planning and policies related to environment and natural resources.

CC 14: Regional Development and Planning

- Identify notable lagging regions and solutions for their overall development
- Have comprehensive understanding regarding the different regions and application of different models and theories for integrated regional development.
- Select appropriate indicators for the measurement of socio-economic regional development

DSE 1: Population Geography

- Learn the role of demography and population studies as a distinct field of human geography
- Have sound knowledge of key concept, different components of population along with its drivers
- Examine population dynamics and characteristic with contemporary issues

DSE 2: Agricultural Geography

- Conceptualise the agriculture and its determinants
- Get the overview of Indian and World agriculture regions and systems
- Have sound knowledge of agriculture revolutions and food security

DSE 3: Social Geography

- Understand the nature, scope and relationships of geography and human wellbeing
- Acquire knowledge on spatial dimensions of social diversity components
- Appreciate the social welfare programs related to inclusive and exclusive policies in India.

DSE 4: Political Geography

- Learn the concept of nation and state and geopolitical theories
- Understand the different dimensions of electoral geography and resource conflicts
- Have sound knowledge of politics of displacement, focusing on dams and SEZ

PROGRAM SPECIFIC OUTCOME FOR HISTORY STUDENTS (PSO)

Sem -1 & 2; C.C.1 & C.C.3 - Ancient Indian History (early time to 650).

1. Students acquainted themselves with facts related to social, economical and geography of Ancient India.

2. Formation and decline of great empires Mauryas, Kushanas, Guptas and Harshwardhan. Tremendous economic development and emerging political potential trade centres.
3. Noticeable development in the field of art, culture, and literature.

Sem - 1 & 2; C.C.2 & C.C.4 - History of Modern Europe (1789-1945). (1789-1945)

1. Students knew about conservative political system.
2. Economic growth in Europe.
3. Got references to the great personalities like Napoleon Bonaparte, Metternich, Czar of Russia, Bismarck, Mazzini, Kavour.
4. They knew about two great wars and the leaders responsible for these consequences formation of UNO and beginning of Cold War.

Sem - 3, 4 & 5; C.C-5, C.C-8, C.C-11 - Medieval Indian History (650 AD-1707)

1. Disintegration of great empire. Emergence of new social and political order. Dominance of sultanate, emergence of regional powers like Bahamani and Vijay Nagar.
2. The great Mughals, their policies, and decline.
3. Arrival of European trading companies.

Sem – 3 & 4; C.C-6, C.C-9 - History of U.S.A (1776-1945)

1. Students will acquire the knowledge of American Revolution. Democratic pattern politics, and how the U.S.A developed from slavery to the super power of the World.
2. Students will have the knowledge of the socio-political and economical status of U.S.A after the consolidation of colonial power.
3. Growth of capitalism and New Deal policy of non-participation in war activities.

Sem – 3 & 4; C.C.7, C.C.10 - History of Jharkhand (1757-2000)

1. Students will learn about the environment, culture, tradition and practices of Jharkhand people after arrival of Britishers.
2. They will acquire knowledge of relationship between the British and the native states.
3. They will also have the knowledge of changing socio-cultural, economic, pattern and Jharkhand movement for the formation of new states.

Sem- 5; C-12-History of China and Japan (1839 AD -1949)

1. In this paper student will get the knowledge of Opium War, causes and impact Taiping and Boxer rebellion.
2. They will know about Dr. Sun-Yat-Sen, Chiang Kai-shek and communist movement in China.
3. Students will be gain information on opening of Japan, Meiji Restoration, modernization of Japan.
4. War with China and Russia.

Sem-6; C.C.13- Contemporary World, (1945-2014)

1. Students will have the knowledge of the U.N.O, post war social-political, and economic development as well as about Cold War, oil politics, and New Colonization.
2. Students will be acquainted with the facts related to liberation, feminist movements, and also about emerging trends in science and technology, nuclear politics and its impact on contemporary world.

Sem-6; C.C.14- History of West Asia (1908 AD to 1945)

1. Students will come to know about young turk movement and reformation of Mustafa Kamal Pasha, Raza Shah Pahalvi and Ibn Saud.
2. Mandate system in Syria and Labanon and Nationalist Movement in Arab.

Sem-5 - DSE-1 -History of Modern India (1757-1856)

1. Students will come to know about rise of British Power in Bengal through battle of Plassey and battle of Buxar.
2. Expansion of British Rule, Anglo-Maratha, Anglo-Mysore, Anglo-Awadh and Anglo-Sikh relation.
3. They got to know about growth of administration, Warren Hastings, Lord Cornwallis, Lord Walesley, reforms of William Bentig, Lord Dalhousie and Doctrine of Lapse.
4. They also gathered information about rural economy and society, land revenue systems, and their impacts, drain of wealth.

Sem-5; DSE-2- History of Freedom Movement (1857-1947)

1. Students will learn about freedom struggle in different phases and also about political ideological development.
2. Students will also have the knowledge regarding partition of Bengal, Home Rule movement and constitutional development during the period and impact of 1st World War.
3. Gandhi Ji role and ideology in the freedom movement.

Sem-6; DSE III - History of Modern India (1857-1947)

1. Students will have the knowledge of cultural changes and social and religious reforms movements.
2. Constitutional development under the tenure of different Governor Generals and Viceroy.
3. Framing of Indian Constitution and its salient features.

Sem-5; DSE-4- History of Independent India (1947AD-2014)

1. Annexation of native states into Indian republic.
2. Wars with China and Pakistan.
3. Non-alignment movement and panch sheel, economical liberalization and globalization.
4. Emergency and J.P. Movement.

Programme Specific outcome of UG in Home Science

- To understand and appreciate the role of interdisciplinary sciences in the development and well-being of individuals, families and communities
- To learn about the sciences and technologies that enhances quality the life of people
- To acquire professional and entrepreneurial skills for economic empowerment of the student in particular, and community in general
- To develop professional skills in food, nutrition, textiles, housing, product making, communication technologies and human development
- To take science from the laboratory to the people

Core Specific Outcomes

CC 1: FUNDAMENTALS OF FOOD & NUTRITION

- To understand of basic concepts of food & nutrition, role of various nutrients & their requirements, role of deficiency & excess and metabolism of nutrients.
- To learn about nutritional contributions of different foods & different methods of improving nutritional quality of food
- To understand basic knowledge of cell, tissue, blood, enzyme and hormones.

CC 2: INTRODUCTION TO HUMAN DEVELOPMENT

- To learn about basic concepts of human development and their stage & principles.
- To understand pre-natal and post-natal development of children
- To sensitize the students towards intervention in the field of human development.

CC 1 & 2 Practical

- To acquire skills in food preparation techniques.
- To use appropriate methods of cooking for preparation of specific food products.

CC 3: INTRODUCTION TO RESOURCE MANAGEMENT

- To understand about management process and family resource.
- To learn about management of money, energy and time.

CC 4: INTRODUCTION TO TEXTILE SCIENCE

- Acquaint with different textiles and their performances
- Impart knowledge on different textile

CC 5: APPLIED FOOD AND NUTRITION

- To learn about nutritional contributions of different foods & different methods of improving nutritional quality of food.

CC 6: FAMILY RELATIONSHIP

- Acquire knowledge and insight about marriage and family systems in India
- Became aware of the changing roles and relationship within family
- Understand the families in crisis.

CC 7: RESEARCH METHODOLOGY AND STATISTICS

- To acquaints students with the concept of research and statistics
- To develop an understanding of the nature and scope of research and statistics.

CC 8: NUTRITIONAL MANAGMENT

- To understand about normal diet and modified diet
- To learn about nutritional requirement during different age group

CC 9: INTRODUCTION TO EXTENSION EDUCATION

- Understand the widening concept of extension
- Be aware of the extension models in practice and their scope in facilitating development

CC 10: COMMUNICATION PROCESS IN DEVELOPMENT

- Understand the process of communication in development work
- Develop skills in the use of methods & media

CC 11: CLOTHING & TEXTILE

- To acquaint students with the different textile their processing & choice and care of fabric.
- To develop skill in clothing constriction

CC 12: HOME DECORATION

- To understand about interior decoration & different types of Flower arrangement, Furniture and Furnishing materials

CC 13: FOOD PRESERVATION AND PROCESSING

- To understand about techniques of food preservation
- To know about the role of micro-organisms in food industry and processing technology

CC 14: EARLY CHILDHOOD CARE & EDUCATION

- To understand about intelligence, early childhood education.
- To understand importance of play & family relationship

DSE 1: COMMUNITY NUTRITION

- To be familiar with community nutritional problem, cause and its eradication.
- To know common health hazards and methods of nutritional assessment

DSE 2: HUMAN PHYSIOLOGY

To become acquainted with

- An elementary idea about human physiology
- Role of enzymes & hormones in the body

DSE 3: THERAPEUTIC NUTRITION

- To gain knowledge about therapeutic diet in different disease and mode of feeding.

DSE 4: COMMUNITY NUTRITION II

- To be familiar with community nutritional problem, cause and its eradication.
- To understand about role of welfare programme and organization for community health.
- To know common health hazards and methods of nutritional assessment.

Programme Learning Outcomes in B A (Honours) Philosophy

- Understand the broad ideas that are enshrined in the basic thinking of various centres of philosophy
- Develop the idea of creating new theories of metaphysics and epistemology and ethics and logic and aesthetics
- Critically analyse the hypothesis, theories, techniques and definitions offered by philosophers
- Utilize philosophy to understand social realities and problems and to come up with ideal solutions to them
- Identify how deeply philosophy is connected to other disciplines like economics and natural sciences and literature
- Understand and appreciate the foundational nature of philosophy

Core Specific Outcome**CC 1: Ancient Indian Philosophy**

- Students will understand the richness of Indian Intellectual Traditions through basic concepts such as Shruti (agama) and Smriti(Nigama), Karma, Jnana and Bhakti, Indian Idealism vs. Indian Materialism, Preyas, Shreyas and Nihisreyas etc
- Students will appreciate the Indian Metaphysics of various ancient Indian schools such as Charvaka, Buddhism, Jainism, Samkhya, Mimamsa and Vedanta. They will become aware of the Metaphysics of various schools which will help them to understand the society at large.
- students will gain familiarity with the epistemology of Jaina and Nyaya - Vaisheshika system. Epistemology of a particular school can be understood through its metaphysics and vice-versa.
- Students will learn to develop scientific, logical and rational inquiry for understanding the systems.
- Students will be able to do a comparative analysis of all systems which will further enhance their debating skills.
- Students will develop the ability to think critically and to read and analyze scientific literature.
- Students will develop strong oral and written communication skills through the effective presentation of Projects, Quiz as well as through Seminars.

CC 2: Ancient Greek Philosophy

This course facilitates a comprehension of early Greek tradition. A comprehensive understanding of it is like a foundation course in the Classics. The two great classical traditions, viz., Greek and Indian have left a rich legacy of philosophic knowledge that can be pragmatically and scholastically contextualized in the present day times. Students of Delhi University read Indian Philosophy; this course in Greek Philosophy complements it fairly well for understanding of the classics.

CC 3: Epistemology & Metaphysics (Indian)

- To cultivate in-depth knowledge of Indian Metaphysics, which contain the unique concept of the world, self and the absolute reality
- To understand the development and its conceptuality that has determine modern Indian Thought.
- Understand the sources of knowledge and also the theory of hermeneutical understanding of Indian Epistemology.

CC 4: History of Western Philosophy

- Enable students to witness how philosophers who were either predecessors or contemporaries evaluated the theories of others, thus will advise them in distinguishing good arguments from bad arguments.
- Enable students to have a better understanding of how a man thinks and what goes on into the making of human thought.
- Make students aware that there is no place for superficial approach to the complex questions in life.

CC 5: Epistemology & Metaphysics (Western)

- Define Knowledge and kinds of Knowledge, Propositional and non-propositional Knowledge, necessary and sufficient conditions of Knowledge
- Understand the theories of knowledge
- Understand theories of Truth; Nature of Metaphysics.
- Know about Substance in Western philosophy, Space & Time of Kant Causation theories: Aristotle, Mill and Hume; Mind and body relation according to Rationalists.

CC 6: Indian Logic

- Learn the classical Problem of Indian Logic.
- Understand the problems associated with the definition, nature, factors (pramā, prameya, pramatr, pramāṇa, and pramāṇaphala), and its process
- Understand the significance of classical Indian Logic.
- Explores philosophical accounts of Indian Old and New Logic

CC 7: Deductive Logic

- Provide students with the basic skills and knowhow of the discipline of Deductive Logic.
- They are expected to understand the different logical concepts and learn their application in the philosophical discourse.

CC 8: Symbolic Logic

- This course helps in learning the various principles and methods of basic as well as higher logic. Through the development of its special symbols, this course (advanced logic) helps as an instrument for analysis and deduction.
- It helps in examining more complex arguments for deriving clear rational conclusions.
- This paper helps in good score that provides better rank in form of results.
- This is an appropriate paper for applying the logical/mathematical skill and to make use of artificial intelligence effectively.

CC 9: Classical Indian Text Bhagvadgita

- Gita is the corner stone of Indian Philosophy. The course is an in-depth analysis of the basic concept of Brahman, Atman and the relationship between them and the world. Metaphysics of Gita has deep ethical significance it provides a way transcendental life. Learning of the message of Geeta is the outcome of the course.
- They will be able demonstrate their knowledge and understanding of the ethical theories in Indian Heterodox traditions, as well as of the ethics of the Bhagavad Gita

CC 10: Western Ethics

- To make students aware about the ethical issues of ethics

- The students after having run through basic ethical theories gain a better orientation from the ethical perspective.

- This course helps to understand and interpret events with a more rational basis

CC 11: Social & Political Philosophy

- To introduce the social and political theories of Indian thinkers.
- To make understand the dynamics of Indian social reality and its conceptualisation.
- To make familiarise the students the concepts such as colonialism, nationalism, rights and justice from Indian perspective.

CC 12: Indian Ethics

The students after having run through basic ethical theories gain a better orientation from the ethical perspective.

This course helps to understand and interpret events with a more rational basis

- The students will be able to demonstrate their knowledge of the broad themes and issues at work in Indian Ethics.

CC 13: Contemporary Western Philosophy

- To increase the horizon of Western Philosophical Thoughts particularly contemporary western philosophy
- To aware students to learn outstanding contemporary western thinkers particularly Wittgenstein, Husserl and Existential thinkers

CC 14: Contemporary Debates in Philosophy

- Able to recognize, express and analyze ideas and concepts

DSE 1: Contemporary Indian Philosophy/Buddhist Philosophy

- To give an in-depth knowledge of Buddhism, its logic and its practices
- To make the students familiar with the trajectory of contemporary philosophical thought.

DSE 2: Philosophy of Religion/Concept of Philosophy of Religion

- The students will acquire a general understanding of religious issues.
- They will learn to think critically about religious issues.

DSE 3: Problem of Philosophy (Indian)/Vedanta Philosophy

- To understand the problematic of Indian Epistemology which deals with Nyaya, Mimansha and Buddhist theory of Truth and the understanding the theory of errors particularly Nyaya, Mimansha, Baudha and Jaina.
- Offer students a class acquaintance with the major issues and important concepts of Indian Philosophy

DSE 4: Comparative Religion/ Analytical Philosophy of Religion

- Introducing students to the primary thinkers of one of the most important and influential school of thought in Western Philosophy.
- Acquainting students with the complex set of interconnected sub-traditions that Analytic Philosophy ramified into and which became equally influential in the twentieth century
- Inculcating young minds with the basic training associated with the tradition, such that it is prepared to engage in critical and reflective thinking
- Enabling students to reduce complex issues into simpler components that will facilitate clearer understanding

Programme Learning Outcomes of Psychology

Academic Competence

- Disciplinary knowledge and methods including data analysis.
- Basic professional skills pertaining to psychological testing, assessment and counselling.

- Ability to use skills in specific areas related to chosen specialization (e.g. cognitive, industrial-organizational, clinical, counselling, health, educational, social, community).
- Ability to relate and connect concepts with personal experiences and using critical thinking.
- Curiosity and ability to formulate psychology related problems and using appropriate concepts and methods to solve them.
- Ability to use various e-resources and social media and negotiating with technological challenges.
- Articulation of ideas, scientific writing and authentic reporting, effective presentation skills.
- Dealing with conflicting theories and approaches, learning to withstand ambiguities and understanding the limitations of the discipline.

Personal & Behavioural Competence

- Self-development, health and hygiene, self-regulation skills.
- Developing positive attributes such as empathy, compassion, social participation, and accountability.
- Developing cultural and historical sensibility particularly indigenous traditions, socio-cultural context and diversity.
- Having conversational competence including communication and effective interaction with others, listening, speaking, and observational skills.
- Appreciating and tolerating different perspectives.
- Ability to work both independently and in group and dealing effectively with clients and stakeholders, learning the art of negotiation.

Social Competence

- Collaboration, cooperation and realizing the power of groups and community.
- Analysing social problems and understanding social dynamics.
- Gender sensitization including gender respect, respect for one's own gender, dealing with gender confusion and gender identity issues.
- Ethical, social and ecological responsibility including acknowledging the dignity and presence of others, awareness of social order, learning of values and social concern reflected through activation of social participates (e.g. village surveys, visiting old age homes and spending time with elderly, orphanage community service etc).
- Moral and ethical awareness and reasoning involving objective and unbiased work attitude, avoiding unethical behaviours such as data fabrication and plagiarism, observing code of conduct, respecting intellectual property rights and being aware of the implications and ethical concerns of research studies.
- Commitment to health and wellbeing at different levels (e.g. individual, organization, community, society)

COURSE LEARNING OUTCOMES

SEM I: Foundation of Psychology:

- Understanding what psychology is all about.
- Appreciation of the scope and the field of psychology
- Developing familiarity with basic concepts related to some foundational themes of study in psychology such as learning, memory, perception, thinking, emotion, motivation and human biological system including brain
- Developing familiarity with individual level phenomenon such as intelligence, and personality.

SEM I: Statistical Method for Psychological Research

- Understanding the nature of measurement and its various levels

- Developing skills to use quantitative techniques such as measures of central tendency, variability, and correlation.
- Knowing how to use the normal probability curve as a model in scientific theory

SEM II: Bio-psychology

- Appreciating the biological bases of human behaviour including neural, biochemical, evolutionary, and genetic mechanisms.
- Developing critical thinking to use scientific techniques for biological psychology and developing an awareness of ethical issues accompanying them.
- Having basic knowledge about the structures of human brain, their functions and impact on human behaviour.
- Understanding biological mechanisms involved in psychological processes such as learning, memory, emotion, motivation, sleep and arousal.
- Inculcating an applied perspective on psychopathology including disorders such as Amnesias, Korsakoff's Psychosis, Alzheimer disease, and Anorexia.
- Realizing the complex interplay of biological factors with psychological, social and cultural in shaping human behaviour.

SEM II & SEM V: Educational Psychology

- Understanding the meaning and processes of education at individual and social plains in the Indian context.
- Demonstrating an appreciation of various theoretical perspectives on cognition and learning in educational contexts.
- Developing insights into the facilitators of learning such as intelligence, emotion, imagination, creativity and self processes.
- Understanding the social processes within the classroom and broader societal contexts that shape student's learning outcomes.

SEM II: Youth, Gender and Identity

- Understanding the transitory phase of youth, the issues surrounding it and thereby developing sensitivity to the youth of today.
- Developing an appreciation of the multiple influences that mould the identity of today's youth.

SEM III: Health Psychology

- Demonstrating knowledge of health psychology
- Demonstrating adequate knowledge about issues related to stress, stress management and coping.
- Developing adequate knowledge about the promotion of healthy behaviour

SEM III: Applied Social Psychology

- Understanding the key issues and theoretical concepts related to psychology of women and gender especially with respect to Indian context.
- Developing insights into one's own behaviours as a man (or as a woman) through self reflexivity.
- Understanding of basic terms, theories and emerging themes used to describe family systems.
- Learning to apply family systems theories and assumptions to one's own family so that it can lead to an increased awareness of one's own family processes and consequently improved family well-being.

SEM III: Psychology at Work

- Understanding the meaning and theoretical foundations of I/O Psychology
- Knowing how to apply knowledge of I/O Psychology to the real work settings

SEM IV: Social Psychology

- Understanding the basic social psychological concepts and familiarize with relevant methods.
- Understanding the applications of social psychology to social issues like gender, environment, health, intergroup conflicts, etc.
- Developing skills pertaining to mapping of social reality and understanding how people evaluate social situations.
- Familiarizing with the concepts of social affect and affective processes including people's harming and helping behaviours.
- Developing an understanding pertaining to social influence processes particularly the influence of others on individual behaviour and performance

SEM V: Organisational Psychology

- Developing a deeper understanding of conceptual and theoretical bases of motivation and employees' work attitudes and their relationship with performance and organizational outcomes.
- Understanding leadership processes from different theoretical perspectives.
- Understanding group dynamics, working through conflicts and working in teams.

SEM VI: Clinical Psychology

- Developing a foundational knowledge of Clinical Psychology, its historical development (especially w.r.t. India) and professional ethics.
- Acquiring knowledge and skills for distinguishing normal and abnormal behaviour and learn the criteria of determining abnormality.
- Developing competencies for assessing the psychological functioning of individuals through techniques such as psychological assessment, observation and interviewing.
- Developing familiarity with the current diagnostic systems (current edition of the Diagnostic and Statistical Manual of Mental Disorders and International Classification of Diseases- Mental Disorder section)
- Acquiring knowledge about Anxiety Disorders and Trauma & Stressor-related, Dissociative and Personality Disorders.
- Developing sensitivity towards individual and cultural diversity and understanding its implication in clinical work especially within the Indian context.
- Having working knowledge and understanding of the major psychological disorders and critically review their signs and symptoms (Bipolar, Depressive Disorders, Schizophrenia and Neuro developmental Disorders).
- Developing a basic knowledge of the various treatments for abnormal behaviour.

SEM VI: Human Resource Management

- Developing the ability to assist HR departments in resolving human resource problems, particularly related to recruitment, selection, performance appraisal, training and career development.
- Demonstrating skills to conduct training needs analysis using appropriate quantitative/qualitative methods.

- Developing skills to conduct job analysis that could form the basis of selection instruments as well as performance appraisal system.
- Acquiring relevant abilities to map competencies of employees of an organization.
- Demonstrating multi-cultural knowledge of HRM and sensitivity towards diversity

SEM VI: Community Psychology

- Understanding the role of Psychology in community development.
- Developing an appreciation of the core values that guide community psychology and facilitate community functions.
Developing insights with respect to health promotion programs in communities, community programme for child and maternal health, for physically challenged and elderly people in the Indian context, through case studies

SEM VI: Counselling Psychology

- Having a comprehensive understanding of the profession of counselling, particularly in the Indian context
- Acquiring basic counselling skills of problem identification, and relationship building (e.g. empathy, listening, paraphrasing, unconditional positive regard).
- Demonstrating skills of helping clients. Students may choose relaxation, reducing negative/maladaptive self-talk, and also learn skills of terminating the counselling relationship. Developing qualities of an effective counsellor including increasing self-awareness, reflexivity, self-monitoring and objectivity.
- Developing proficiencies to assist professional counsellors during intake interviews.
- Helping clients having mild concerns in life; for instance acting as peer counsellors in the college/community.

Program Specific Outcome of Sociology

- To provide competency-driven education, a core component of our growth and success.
- To provide students a well founded education in Sociology.
- To provide structured curricula which support the academic development of students
- To provide and adapt curricula that prepares our graduates for employment and further study as sociologists.
- To provide the students with the opportunity to pursue courses that emphasizes quantitative and theoretical aspects of Sociology
- To demonstrate familiarity with the “sociological imagination.”
- Students will understand sociological theory.
- Students will be able to think sociologically about the relationship between social structure, interaction, identities, and inequalities.
- Students will be able to identify and explain major sociological theories and apply them to everyday life.

Core Specific Outcomes

CC 1: Introduction to sociology

- The students learn to apply the sociological perspective in understanding how society shapes our individual lives
- It provides a foundation for the other more detailed and specialized courses in sociology
- The students also learn about the basics of doing field work and use it for doing field work based projects. They also learn to write project reports
- The students learn how to read and interpret complex ideas and texts and to present them in a cogent manner

- The students are introduced to the relationship between theory and perspectives.
- The students are introduced to sociological theories which they learn in greater detail during the later semesters.
- Provides a foundation for sociological theories that are a part of papers in the subsequent semesters.
- The students learn critical thinking skills. They learn how to read, interpret and critique original works of various thinkers.

CC 2: Society, Culture and Social Change

- Derive knowledge about the meaning, nature, forms and patterns of change.
- Get an idea about the theories that explain change and their adequacy in explaining so.
- Get an impression about the factors that propel change in the society
- provide a wholesome idea to the students about the process of social change. They can relate their experience with the theoretical explanations.

CC 3: Methods in Social Research

- Understand the Research and Social Research.
- Understand the basic knowledge of Social Research
- Development the comparative understanding of technique of research

CC 4: Foundation of Sociological Thought

- To understand the role of theory in sociology such that the student will be able to define theory, describe and illustrate its role in building sociological knowledge.
- Compare and contrast basic theoretical orientations in reference to social phenomena
- Understand and learn how theories reflect the historical and social contexts of the times and cultures in which they were developed.

CC 5: Social Problems in India

- Develop theoretical understanding to study the individual behavior and social problems.
- Students get acquainted about the various social problems like child labour and abuse, unemployment, corruption, terrorism, casteism and communalism and gender discrimination.
- Students develop conceptual understanding about poverty and unemployment and studied about the two main poverty abolishment programs in rural India like MNREGA and IRDP
- Students acquainted about affirmative action regarding backward caste and minorities

CC 6: Social Tribal System

- Basic understanding of tribal culture.
- Analyze the Economic and ceremonial exchange among tribes.
- Understand the magic religion and science among tribes

CC 7: Women and Society

- Demonstrate knowledge of social, economic, political, intellectual and cultural contributions of women past and present
- Expected to generate ideas and sensitivity about gender in a student which she can put into practice in daily life.
- Lead to change the prevalent biases and gender practices and create a gender neutral social world where both men and women can enjoy their basic rights and cherish to achieve their dreams.

CC 8: Urban Sociology

- To appreciate the significance of the city and the process of urbanisation and its consequences across the globe, through cross disciplinary texts and ethnographic studies.
- To understand the urban in the historical as well as modern contexts
- Exposing students to critical theoretical debates which help them to gain a deeper understanding of city life and urban environment
- Help them understand their own social environment better.
- To learn about key urban processes such as migration, displacement and urban slums, as well as critical contemporary issues such as resettlement and rehabilitation

- Engage in issues of public policy, urban transformation and change
- Engage in research on public policy, urban transformation and change
- To develop critical thinking and a reflective perspective through exposure to multicultural thought; to enhance disciplinary knowledge, research-related skills and develop a problem-solving competency

CC 9: Social change and development

- Derive knowledge about the meaning, nature, forms and patterns of change.
- Get an idea about the theories that explain change and their adequacy in explaining so.
- Get an impression about the factors that propel change in the society.
- Expected to provide a wholesome idea to the students about the process of social change. They can relate their experience with the theoretical explanations

CC 10: Crime and Society

- Understand about the different types of crime
- Know about conceptions and types of crimes
- Informed about changing profile of crimes and criminals in contemporary India
- Acquaint about correctional measures- Probation, Parole and open Prison

CC 11: Indian Society

- It lays the foundation of viewing images and ideas of India through a sociological lens. It further investigates sociological concepts and institutions in the Indian context
- Informed interrogation of images, ideas, concepts and institutions of India, the course contributes to the development of critical and analytical thinking
- The course, supported by an inter-disciplinary approach, facilitates learning and reflecting about the multiple – and contextual – socio-cultural registers of Indian society.

CC 12: Population studies

- Demonstrate knowledge of key concepts in and different approaches to population studies.
- Recognise the relations between population and social groups and processes by linking population size, composition, and growth with fertility, reproduction, and mortality
- Explain the dynamics between population, gender, and migration in terms of the role of institutions, policies and programmes, and social relations and groups.
- Undertake a sociological analysis of international and national population dynamics and population policies

CC 13: Rural Society: Structure and change

- The nuances of Peasant differentiation will be appreciated critically focusing rural India.
- Students will have critical understanding of social problems in rural India due to the process of depeasantization.
- Functioning of various institutions in rural India is also appreciated from sociological perspectives.
- Can join in Rural Development Organizations / Institutions as Social Worker, Community Mobilizer.
- Can set up Small Scale Industry in rural areas supported by State govt. institutions
- Can join in State /National Livelihoods Mission under Panchayati Raj Dept / Rural Development Dept. of the State / Nation as Manager or Programme Coordinator.
- Can start a Non- Governmental Organisation or Voluntary agency to serve for the welfare of the rural poor.

CC 14: Pioneers of Indian Sociology

- Know the individual contributions of the Indian sociologists
- Comprehend the theoretical basis of Indian social structure, Indian culture and the typical social institutions.
- Develop insight into the dynamics of Indian society
- To acquaint the students with the Indian sociologists, their intellectual contributions to the understanding of Indian society

DSE 1: Industrial Sociology

- Understand the nature and scope of industrial sociology as branch of Sociology.
- The developmental stages of industry.
- The organizational structure of industries and employee and employer relations in the industry

DSE 2: Population and Society

- Understanding of various linkages between population and society at various levels: national, regional, village, household and individual
- Understand the level of poverty and unemployment
- Learn about the position of India in the international politics
- Able to relate population trends and policies with society and social change

DSE 3: Sociology of Mass Media & Communication

- Define technology and describe its evolution
- Understand technological inequality and issues related to unequal access to technology
- Describe the role of planned obsolescence in technological development
- Describe the evolution and current role of different media, like newspapers, television, and new media
- Understand the function of product advertising in media
- Demonstrate awareness of the social homogenization and social fragmentation that are occurring via modern society's use of technology and media
- Explain the advantages and concerns of media globalization
- Understand the globalization of technology
- Understand and discuss how media and technology are analyzed through various sociological perspectives

DSE 4: Dissertation

- Display an ability to apply sociological methods and concepts of analysis to independently researched material;
Display in depth understanding of the field/issues which form the subject matter of the dissertation
- Display comprehensive knowledge of relevant sociological literature;
Demonstrate a general understanding of key debates in sociological theory;
Collect, analyse and present original research material with reference to appropriate sociological approaches and theories
- Select, digest and organise material collected in independent research;
Manage and organize the different phases of the research project from conception to final presentation;
Prepare a substantive written presentation of the material and arguments

VOCATIONAL COURSES

Program Specific Outcome of doing Bachelor's in Fashion Designing

- Adapt their artistic abilities to support their future design careers.
- Assess, propose, and apply various techniques related to drafting, draping, and constructing of garments.
- Develop a systematic, critical approach to problem solving at all levels of the design process.
- Relate the design process to the appropriate manufacturing process.
- Demonstrate professionalism by managing time to meet deadlines with quality work and effectively collaborating in teams.
- Research and relate fashion design to a broader socio economic, historical, and environmental context.
- Articulate design ideas verbally, visually, and digitally.

Core Specific Outcome

CC 1: Fashion Theory

- Learn basic knowledge on Fashion and Fashion terminology
- Understand the movement of fashion
- Knowledge on fashion designers
- Understand the concept of fashion as a socio-cultural phenomenon
- Understand the role of fashion in media, sports, movies and various other fields.
- Students will be able to construct a visual merchandising display with specified criteria.
- Know the basic of draping

CC 2: Sketching

- Illustrate the apparel design for elements of designs
- Select the apparel using colour harmony and types of charts
- How to Sketch the basic shadings and fashion figures
- Find the human body in proportions relevant to fashion illustration
- Classify the sketches of clothing items on the human body

CC 3, CC 6 and CC 9: Surface Ornamentation

- Identify and use embroidery tools with safety precautions
- Prepare sample basic hand stitches (Temporary & permanent stitch)
- Describe & use different types of tracing method carbon paper, tissue paper, tracing paper, water soluble pen, tracing box (light box), hot pressing and wooden block method
- Demonstrate the basic embroidery stitches flat, loop, crossed, knotted and prepare article
- Draw, create & place free hand designs with Scribble, Geometrical, Cut Paper or Signature method. State & identify the colour wheel, describe various types of colour, colour schemes & use these colour schemes in different jobs
- Demonstrate the Enlarged & Reduced forms of design
- Decorate a garment part with a suitable Embroidery design
- Develop the different design for the garment components: sleeves yokes, neck, cuffs
- Identify, operate the Zig- Zag machine embroidery parts, demonstrate set the machine for embroidery
- Decorate a cushion cover with embroidery design using Zig-Zag Machine
- Make samples with running stitch, running shade, satin, cording, back stitch. Identification and rectification of defects
- Prepare frame fitting for hand aari
- Demonstrate locking, starting and finishing of the aari chain stitch, with factual knowledge of different types of materials & stitches
- Prepare samples or coaster through straight, curved & sequence lines
- Decorate a sari by Hand aari method with sequence work
- Prepare the sample of drawn & pulled thread, Assisi, Cut, Swiss, shadow work with quality concepts. Prepare the sample of phulkari of Punjab, kantha of Bengal, kasuti of Karnataka, chikankari of Luckhnow, Kashida of Kashmir, chamba of Himachal, kutch of Karnataka with quality concepts. Prepare the sample of single and double cane weaving, fancy net with lazy daizy, cross stitch, circle and button hole network with quality concepts
- Prepare the sample of simple, cut and felt applique work with quality concepts
- Prepare Layout of frock, ladies kurta, gents kurta, toper and place them on article
- Carry out estimation and costing of garments

- Practice of different hand aari stitches
- Develop various hand aari design with the help of accessories
- Recall and prepare combination of zig-zag machine stitches and work style with the applique & satin, cording & stem, stem & satin, running & satin, shade & satin.

CC 4: Garment Construction

- Know about Garment components stitching method, garment assembly system, factory production system, Progressive bundle system, unit Production system, Modular Production system, garment finishing machine
- Understand the method of collar attachment in various garments
- Understand the various types of sleeves and its functional use
- Know about the placket and its openings
- Understand the application method of cuff in various garments.

CC 5 and CC 8: Textile Science

- Identify the basic textile fibers
- Classify the fibres and its types
- Compare to the natural and manmade fibres
- Define the methods of yarn manufacturing
- Utilize the recent techniques in processing
- Obtain basic knowledge on Textile Industry
- Familiar with the terminology used in textiles
- Understand the performance characteristics of fibre, yarn and fabrics
- Understand the process flow of Textiles from Yarn to Fabric
- Obtain knowledge on various fabric formation processes
- Develop knowledge and skills to evaluate quality in the design and construction of textile materials.
- Acquire the skills in the selection and proficiency to use of textile materials, equipment and techniques to produce quality textile
- Obtain knowledge and understanding the properties of textile material for range development. Understand the importance of care factors and ultimate use of fabrics.
- Develop an understanding of various kind dyes and printing technique

CC 7: Garment Construction

- Plan, organize and utilize acquired knowledge of construction techniques of Indian wear
- Use the appropriate seams, seam finishes, trims, fasteners as per the fabrics used in various styles of Indian wear
- Understand the making of the necessary fitting adjustments in the garment on the dress Form and the human body
- Construct and finish the garment as per industrial standards of quality
- Prepare specification sheets of the stitched garment.

CC 10: Sketching

- Demonstrate the basic understanding of line, form, shape, texture, colour
- Evaluate and apply the elements and principles of visual design in your composition
- Demonstrate correct proportions and scaling of the objects
- Illustrate and apply learning of isometric drawing and its application in design
- Create the different colour scheme & colour mediums

CC 11 and CC 13: Garment Production and Management

- Explain about the garment manufacturing unit
- Develop knowledge about Spreading, Marking and Cutting techniques
- Identify the special attachments in sewing machines
- To gain knowledge about stitching mechanism
- Analyzing the fusing and garment finishing
- Identify the quality concepts and importance of quality control in textile industry
- Explain the quality parameters of textile and clothing
- Analyze the quality specifications in textile
- Examine the quality control in finished garments, packaging and warehousing

CC 12 and CC 14: Sketching

- Reflect analytically upon understanding of form and space, surface and texture in work
- Interpret a comprehensive knowledge of space, depth and distance in composition
- Demonstrate drawing as a means of effective tool for communicating concepts and ideas
- Understand the difference between surface finishes and render (different materials) them with different medium
- Develop contours of different organic and handcrafted objects
- Apply design principles for concept generation
- Proficiently use single point two point and three point perspectives for manual sketching and rendering using different media.
- Know about male figures

DSE 1: Textile Science

- Analyse and study the archive textiles
- Develop creatively visual ideas for contemporary textiles in response to imagery, pattern, composition, structure and surface
- Explore practical, creative and decorative textile techniques
- Use an appropriate and wide range of surface and structure media and techniques to creatively develop design ideas
- Understand and apply the current trend in creative and contemporary textile to the design brief.

DSE 2: Market Survey

- Students will be able to research and name various career paths in the fashion industry.
- Students will be able to identify, analyze, and apply trends in the textile industry.
- Use basic buying management methods to meet the needs of a simulated retail market
- Evaluate relevant data in order to determine a suitable assortment of merchandise
- Analyze, critique and communicate findings
- Work effectively and productively as a team members in order to negotiate and achieve a desired outcome
- Gather, analyze and interpret data to develop fashion and related products and present to peers or potential clients

DSE 3: Project and Research and Development

- Knowledge of opportunities and problems regarding the communication of clothing and fashion. Gain colouring techniques and computer rendering
- Development of own individual style
- Adapt their artistic abilities to support their future design careers
- Demonstrate professionalism by managing time to meet deadlines with quality work and effectively collaborating teams.

DSE 4: Project and Job Training

- Show the knowledge about working environment by giving real-time exposure in the Industry Demonstrate the various opportunities in the textile field
- Students relate their theoretical knowledge with the application domain of the Textile Processing/ Weaving/ Spinning/ Knitting/ Garment industry
- Experiment with different styles of garment illustrating

PROGRAM SPECIFIC OUTCOME OF DOING CLINICAL NUTRITION AND DIETETICS

- Communicate effectively and professionally with medical team, staff members, patients/clients, and peers
- Integrate the broad aspects of food into dietetics practice. Apply all areas of the nutrition care process and model to clinical practice
- Programme will make students knowledgeable and competent to make a prospective career in Industry as well as in research in the area of Food, Nutrition & Dietetics
- Able to provide nutrition counselling and education to individuals, groups, and communities throughout the lifespan using a variety of communication strategies.
- Able to apply technical skills, knowledge of health behaviour, clinical judgment, and decision-making skills when assessing and evaluating the nutritional status of individuals and communities and their response to nutrition intervention.
- Students can implement strategies for food access, procurement, preparation, and safety for individuals, families, and communities.
- Apply food science knowledge to describe functions of ingredients in food.

CORE SPECIFIC OUTCOME

CC 1: BASIC NUTRITION

- Understand the functions and sources of nutrients, role of nutrients in maintenance of good health
- Able to identify what foods are good sources for what nutrients. Students will be familiar with factors affecting for the absorption of nutrient

CC 2: NUTRITION BIOCHEMISTRY

- Understand the biological processes and systems as applicable to human nutrition
- Students will understand the principles of biochemistry and also chemistry of major nutrient

CC 3: HUMAN PHYSIOLOGY

- Able to understand the physiological processes and functions as applicable to human nutrition
- Learn the anatomical structures and physiology of human body
- Identify and use proper terminology for describing the anatomy of the body
- Observe and examine the functions of various components of a body system under normal conditions.

CC 4: FOOD MICROBIOLOGY

- Able to understand the important pathogens and spoilage microorganisms in foods, the most likely sources of these organisms, and the conditions under which they grow, the role of beneficial microorganisms in foods and their use in fermentation processes
- To develop an understanding of the rate of micro-organism in environment, industries and in maintenance of health.

CC 5: CLINICAL NUTRITION

- Gain knowledge about aetiology, risk factors, clinical features and dietary management of cancer, genetic and mental disorders

- Students able to understand the causes, symptoms, risk factors and dietary management of different disease conditions like DM, gall bladder & pancreas, kidney and liver diseases.

CC 6: SANITATION AND HYGIENE

- Students will gain the knowledge regarding nutritional classification of food, method and media of cooking, nutritive value and processing, storage of plant based foods.

CC 7: MEAL MANAGEMENT

- Understand the nutritional requirement of adults, nutritional needs during pregnancy and lactation, physiological changes and hormones involved during pregnancy and lactation, effects of ageing and life expectancy.

CC 8: BASIC DIETETICS

- Students able to understand principles of diet therapy, modification of normal diet for therapeutic purposes and the role of dietician
- Students able to understand the causes, symptoms, risk factors and dietary management of different disease conditions like DM, gall bladder & pancreas, kidney and liver diseases

CC 9: COMMUNITY NUTRITION

- Understand the role of nutrition at community level
- Educate the community
- Alleviate the nutrition problems at national level.

CC 10: FOOD COMMODITIES

- The students will know the specifications of various products, their variation in composition basis and nutritional details after certain processing.
- Understand the composition and nutritive value of cereals, pulses, milk and milk products, vegetables, fruits, fats, oils, nuts and spices
- Enable students to determine nutrients in foods

CC 11: BOOK KEEPING AND FOOD COST ACCOUNTANCY

- Learn Costing and budgeting, pricing and accounting.
- Personnel management- Concepts, staff employment and employment benefits
- Food purchasing, Menu planning, Food production and cleaning and waste management

CC 12: FOOD SERVICE EQUIPMENT

- Gain knowledge and experience in selection and maintenance of food service equipment
- Understand the principles underlined the planning of layout for food service institutions

DSE 1: ADVANCED DIETETICS

- Gain knowledge about food pyramid, vegetarian diet, menu planning and nutritional needs during infancy to adolescents
- Understand diet under hospital conditions
- Counsel patients effectively
- Understand the correlation between diet and diseases.

DSE 2: JOB TRAINING

- Identify the different disease conditions
- Interpret the relevance of food and nutrition for the disease
- Devise an individualized diet plan for patients
- Compare and contrast the derived nutritive values
- Persuade the patients with appropriate diet counselling techniques.

CC 13: QUALITY FOOD PRODUCTION AND SERVICES

- Gain in-depth knowledge of food service industries
- Understand basic managerial skills

- Independent management of food service institutions

CC 14: NUTRACEUTICALS AND FUNCTIONAL FOODS

- Compile the updates on link between nutrition and medicine
- Assess the properties and functions of nutraceuticals
- Classify the nutraceuticals and comprehend their role in health promotion
- Describe the dietary supplements
- Determine the role of globalisation in food choices
- Gain in-depth knowledge on the relationship between nutrition and food biotechnology
- Provide a correlation between food processing and food technology

DSE 3: CATERING MANAGEMENT

- Ability to take complex decisions, not to mention teamwork and multicultural adaptation.
- Acquire the fundamental skills for the management of the departments of Food and Beverages.
- Develop and apply strategic solutions to respond to the challenges of commercial and group catering in our present times.
- Encourage initiative and entrepreneurial spirit in the field of catering.
- Present guidelines for healthy eating in the different stages and physiological situations of life, planning suitable menus to the different groups, applying appropriate rules for the proper handling of food

DSE 4: JOB TRAINING

- Positive transfer of learning to *work* situations
- Identify the different catering condition
- Interpret the relevance of catering management

PROGRAM SPECIFIC OUTCOME OF DOING BACHELOR OF CORPORATE SECRETARYSHIP

- **Academic excellence:** To enable every student to cope up with the latest developments in contemporary, national and global level through effective transaction of the curricular and co-curricular aspects
- **Professional Excellence:** To produce Bachelor in Corporate Secretaryship -(BCS) graduates who possess the skills, problem solving tools and professionalism essential for being successful
- **Value-based Development:** To impart quality and need based education. Sensitize the students for their changing roles in society through awareness raising activities
- Remove the unnatural boundaries for a student, enabling the mind to be free, and to make her to realize the innovation and newness rules the world, so that the flow of new ideas are not restrained

CORE SPECIFIC OUTCOMES

101: COMMUNICATIVE ENGLISH

- Able to develop vocabulary and improve the accuracy in grammar
- Produce words with right pronunciation.
- Improve listening, speaking, reading and writing skills and the related sub-skills

102: BASIC COMPUTER APPLICATION

- Understand the basics of computers
- Learn the usage of the computers in the modern world

103: BUSINESS PRACTICES AND MANAGEMENT

- Know the evaluation of Management
- Understand the objectives and types of decision making
- Understand the types of organisation
- Analyze the leadership and co-ordination control

104: BASIC FINANCIAL ACCOUNTING

- Know the concepts of Accounting
- Understand the trail balance
- Understand the Bills of Exchange, Single entry system
- Know and understand the hire purchase system
- Understand the depreciation accounting
- Understand the branch accounting, departmental and royalty
- Know the partnership accounting

105: MICRO ECONOMICS

- Demonstrate an understanding, usage and application of basic economic principles.
- Describe and apply the methods for analyzing consumer behavior through demand and supply, elasticity and marginal utility.
- Understand the role of alternative property rights in resource allocation
- Identify and appraise various models of how markets are organized, and the price and output decisions for maximizing profit.
- Know how markets that fail to use resources efficiently create unintended effects

201: COMPANY LAW

- Understand the characteristics of company
- Know the contents of Memorandum of association
- Understand the prospects
- Know the share capital and rights and liabilities of Members

202: ADVANCED FINANCIAL ACCOUNTING

- Know the fundamentals of financial accounting
- Know about various financial transactions and its current application
- Enable to know the Principles of Accounting in General
- Understand the System of Keeping Financial Accounting Records

203: MACRO ECONOMICS

- Understand why household, business, government and global behavior determine the aggregate demand for goods and services
- Understand why the behavior of businesses and the rest of the world determine the aggregate supply of goods and services
- Understand how aggregate demand and aggregate supply interact to drive a free market economy Understand the implications of interference in a market economy, including government policy

204: MANAGEMENT PRINCIPLES AND APPLICATION

- Understand the concepts related to Business
- Demonstrate the roles, skills and functions of management
- Analyze effective application of PPM knowledge to diagnose and solve organizational problems and develop optimal managerial decisions
- Understand the complexities associated with management of human resources in the organizations and integrate the learning in handling these complexities

205: MARKETING MANAGEMENT

- Understand the concept of marketing
- Know the product policy and product management

- Understand the pricing strategies
- Know the selection of distribution channel and sales promotion

301: BUSINESS LAW

- Enable the students to understand the concept of law, structure and format of contract, procedures for indemnity, guarantee, rescinding the contract etc.

302: COST ACCOUNTING

- Understand the elements of cost accounting
- Analyze the Inventory Control, Economic Ordering Quality
- Understand the Importance of labour cost
- Explore the Operating costing

303: INDIA AND GLOBAL ECONOMY

- Sharpen the analytical thinking of the student
- Highlight an integrated approach to the functioning aspects of the Indian and global economy, keeping in view the scope for alternative approaches.

304: ENTREPRENEURSHIP

- Enrich the students towards the knowledge of entrepreneurial skills
- Make the students understand the approaches to attain the goals of the business

305: PAYROLL MANAGEMENT

- Demonstrate an understanding of the basic payroll accounting function and tasks.
- Prepare payroll reports containing gross taxable compensations, common withholdings, net pay amounts, and do the related accounting for an unsophisticated employer
- Prepare many routine reports and forms.
- Determine the employer's taxes to be paid and understand how payments are made

401: BUSINESS STATISTICS

- Develop an understanding of various statistical data in terms of their measure of central tendency Know the measure of dispersion
- Understand Types of correlation and index number

402: CORPORATE ACCOUNTING

- Know the amalgamation and absorption
- Understand the accounts of holding company
- Recognize the liquidator's final statement of account
- Know the accounts of insurance company
- Understand the types of shares
- Know the Redemption of Preference Shares
- Understand the alteration of share capital
- Know the company final account and valuation of shares

403: SIX SIGMA

- Explains the concepts, strategies, tools, and techniques needed
- Able to collect relevant data's to define the process.
- Have a basic knowledge required to determine when and how to utilize the system to achieve faster results.
- Have the skills required to use Lean tools and data to decrease expenses, reduce cycle times, increase volume, and improve efficiency in Service, Operations, Supply Chain, and Manufacturing sectors

404: STRATEGIC MANAGEMENT

- Understand the strategic decisions that organisations make and have an ability to engage in strategic planning
- Explain the basic concepts, principles and practices associated with strategy formulation and implementation.
- Integrate and apply knowledge gained in basic courses to the formulation and implementation of strategy from holistic and multi-functional perspectives

- Analyze and evaluate critically real life company situations and develop creative solutions, using a strategic management perspective
- Conduct and present a credible business analysis in a team setting
- Understand the crucially important role that the HRM function plays in the setting and implementation of an organisation's strategy

405: TAX PLANNING AND MANAGEMENT

- Understand the concept of income tax
- Understand the income from salary
- Understand the income from business and profession
- Know the income from other sources and gross total income
- Know the Computation of Tax Liability
- Understand the Procedure for Assessment
- Understand the Collection of Tax and Clubbing of Income
- Know the Income Tax Authorities

501: OPERATION RESEARCH

- Impart knowledge in concepts and tools of Operations Research
- Understand mathematical models used in Operations Research
- Apply these techniques constructively to make effective business decisions
- Solve Linear Programming Problems
- Solve Transportation and Assignment Problems
- Understand the usage of game theory and Simulation for Solving Business Problems

502: CAPITAL MARKET LAWS

- Explain how the capital markets operate
- Identify the main participants
- Discuss the impact the economy and interest rates have on asset values
- Distinguish between the various cash instruments
- Explain and demonstrate the use of derivatives
- Differentiate between exchange traded and over the counter markets

503: TRAINING AND DEVELOPMENT

- Explain the role of training and development in human resources management
- Describe the psychology of the learning process on which training is based.
- Analyze the training needs of an organization.
- Assess, design, access and implement various methods, techniques and sources of training.
- Evaluate the value of the training once completed from the individual employee and the organization's viewpoint.

504: OPERATION MANAGEMENT

- Define 'operations' and 'operations management
- Identify the roles and responsibilities of operations managers in different organisational contexts.
- Apply the 'transformation model' to identify the inputs, transformation processes and outputs of an organisation.
- Identify operational and administrative processes

505: ADVERTISEMENT MANAGEMENT

- Determine, analyze and respond to clients' advertising by applying principles of marketing and communications.
- Perform a market segmentation analysis, determine the organization's target market/audience and define the consumer behaviour of each segment.
- Develop an integrated advertising and marketing communications plan and persuasively present and defend it.
- Evaluate the effectiveness of integrated advertising initiatives.

- Develop marketing communications material in compliance with current Canadian legislation, industry standards and business practices.
- Develop creative solutions to address advertising challenges.
- Plan, implement, monitor and evaluate projects by applying principles of project management.
- Complete all work in a professional, ethical and timely manner

601: BUSINESS COMMUNICATION

- Become skilled at the basic theories in business communication
- Aware of the various communication models and tools required to run a business
- Facilitate the students to understand the concept of Communication
- Know the Basic Techniques of the Modern forms of Communication.

602: ADVANCED MICROSOFT EXCEL

- Create pivot tables and charts.
- Learn to trace precedents and dependents.
- Convert text and validate and consolidate data.
- Collaborate with others by protecting worksheets and workbooks.
- Create, use, edit, and manage macros.
- Import and export data.

603: ADVANCED POWERPOINT

- Identify the names and functions of the PowerPoint interface.
- Create, edit, save, and print presentations.
- Format presentations.
- Add a graphic to a presentation.
- Create and manipulate simple slide shows with outlines and notes.
- Create slide presentations that include text, graphics, animation, and transitions.
- Use design layouts and templates for presentations.
- Create a PowerPoint presentation.

604: INDUSTRY TRAINING AND PROJECT

- Able to obtain and apply important principles of science and engineering.
- Able to communicate excellently.
- Able to recognize, express and model problems and find engineering solution based on a systems tactic.
- Able to conduct research in the selected fields of engineering.
- Understand the significance of sustainability and cost-effectiveness in design and improvements of engineering solution.
- Awareness of the social, cultural, global and environmental responsibility
- Capability and zest for self-improvement through constant professional development and life-long learning

605: CORPORATE SECRETARIAL PRACTICES

- Know the Types of company secretaries, rights, liabilities and Powers
- Understand the Promotion and Incorporation
- Understand the Commencement of Business
- Know the working of Stock Exchange UNIT-I Secretary – Definition, Qualification, appoint
- Understand the Rights and liabilities of members
- Understand the Requisites of board meeting
- Analyze the Statutory Reports and different Kinds of Meetings

PROGRAM SPECIFIC OUTCOME OF DOING BACHELOR IN COMPUTER APPLICATION (BCA)

- Demonstrate the aptitude of Computer Programming and Computer based problem solving skills. Display the knowledge of appropriate theory, practices and tools for the specification, design, implementation
- Ability to learn and acquire knowledge through online courses available at different MOOC Providers.
- Ability to link knowledge of Computer Science with other two chosen auxiliary disciplines of study.
- Display ethical code of conduct in usage of Internet and Cyber systems.
- Ability to pursue higher studies of specialization and to take up technical employment.
- Ability to formulate, to model, to design solutions, procedure and to use software tools to solve real world problems and evaluate
- Ability to operate, manages, deploy, configure computer network, hardware, software operation of an organization.
- Ability to present result using different presentation tools.
- Ability to appreciate emerging technologies and tools

CORE SPECIFIC OUTCOMES

BCA F1001: BUSINESS COMMUNICATIONS

- To develop effective business communication skills among the students.

BCAF1002: BASIC MATHEMATICS I

BCA F2001: BASIC MATHEMATICS II

- Understand the basic concepts of Sets, Relations Functions, Matrices, Mathematical logic, and Group theory.
- Develop analytical ability to solve real-world problems using these methodologies

BCAF1003: BUSINESS PRACTICES AND MANAGEMENT

- The students understand the basics of principles of management.

BCAF1004: INTRODUCTION TO COMPUTER SCIENCE

- A broad and robust understanding of computer science and programming
- How to think algorithmically and solve programming problems efficiently
- Concepts like abstraction, algorithms, data structures, encapsulation, resource management, security, software engineering, and web development
- Familiarity in a number of languages, including C++, Java and HTML
- How to engage with a vibrant community of like-minded learners from all levels of experience
- How to develop and present a final programming project to your peers

BCAF1005: PROBLEM SOLVING AND PROGRAMMING IN C

- Understand the basic terminology used in computer programming
- Write, compile and debug programs in C language
- Use different data types in a computer program
- Design programs involving decision structures, loops and functions
- Explain the difference between call by value and call by reference
- Understand the dynamics of memory by the use of pointers and Structures
- Use different data structures and create/update basic data files.

BCAF2002: ENVIRONMENTAL SCIENCE

- Know the importance of environmental studies and methods of conservation of natural resources. Describe the structure and function of an ecosystem
- Identity the values and conservation of bio-diversity
- Explain the causes, effects and control measures of various types of pollutions
- Select the appropriate methods for waste management
- Get knowledge about various disaster management methods
- Recall social issues and legal provision

BCAF2003: DATABASE MANAGEMENT SYSTEM

- Gain knowledge of database systems and database management systems software
- Ability to model data in applications using conceptual modelling tools
- Formulate, using SQL, solutions to a broad range of query and data update problems
- Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database
- Be acquainted with the basics of transaction processing and concurrency control
- Familiarity with database storage structures and access techniques
- Compare, contrast and analyse the various emerging technologies for database systems
- Analyse strengths and weaknesses of the applications of database technologies to various subject areas.

BCAF2004: OBJECT ORIENTED PROGRAMMING USING C++

- Gain the basic knowledge on Object Oriented concepts
- Able to develop applications using Object Oriented Programming Concepts
- Demonstrate the differences between traditional imperative design and object-oriented Design Explain class structures as fundamental, modular building blocks
- Understand the role of inheritance, polymorphism, dynamic binding and generic structures in building reusable code
- Write small/medium scale C++ programs with simple graphical user interface Understand the file handling and error handling mechanisms in C++

BCAF2005: LOGIC DESIGN

- Understand the basic organization of the circuitry of a digital computer
- They can build complex electronic components that use both electronical and computational characteristics.
- Learn working of hardware, such as generated circuit boards and microchip processors

BCAF3001: DATA STRUCTURE USING C

- Familiar with fundamental data structures and with the manner in which these data structures can best be implemented
- Accustomed to the description of algorithms in both functional and procedural styles
- Knowledge of complexity of basic operations like insert, delete, search on these data structures Ability to choose a data structure to suitably model any data used in computer applications
- Design programs using various data structures including hash tables, Binary and general search trees, heaps, graphs etc. Able to assess efficiency tradeoffs among different data structure implementations
- Implement and know the applications of algorithms for sorting, pattern matching etc

BCAF3002: JAVA PROGRAMMING

- Understanding of the principles and practice of object oriented analysis and design in the construction of robust, maintainable programs which satisfy their requirements
- Ability to implement, compile, test and run Java programs comprising more than one class, to address a particular software problem
- Demonstrate the principles of object oriented programming
- Demonstrate the ability to use simple data structures like arrays in a Java program
- Understand the concept of package, interface, multithreading and File handling in java

BCAF3003: COMPUTER ARCHITECTURE

- To make students understand the basic structure, operation and characteristics of digital computer
- To familiarize the students with arithmetic and logic unit as well as the concept of the concept of pipelining
- To familiarize the students with hierarchical memory system including cache memories and virtual memory
- To make students know the different ways of communicating with I/O devices and standard I/O interfaces, as well as all the peripherals of digital computers.

BCAF3004: SYSTEM ANALYSIS AND DESIGN

- Understand the steps in software development and system development
- Know the tools for System Analysis and design

BCAF3005: PROBABILITY AND STATISTICS

- Learn about sampling theory
- Learn to draw Graphs and Diagrams
- Understand basic Idea of Permutations and Combinations and Probability concepts
- Familiarity with Measures of Central tendency and Measures of Dispersion
- Analyse data using correlation and regression concepts
- Evaluate the Probabilities and Conditional probabilities
- Learn about random variables and its types
- Evaluate expectations of random variables

BCAF4001: MULTIMEDIA

- Define the concepts and definition of the communication systems
- Differentiate between several types of information system
- Identify the threats to information security
- Show how to protect information recourses
- Differentiate between transaction processing system and functional area information system

BCAF4002: OPERATING SYSTEM

- Learn different types of operating systems along with concept of file systems and CPU scheduling algorithms used in operating system
- Provide students knowledge of memory management and deadlock handling algorithms
- Implement various algorithms required for management, scheduling, allocation and communication of data used in Operating System.

BCAF4003: HTML

- Understand the terms related to the Internet and how the Internet is changing the world
- Understand how computers are connected to the Internet and demonstrate the ability to use the World Wide Web
- Demonstrate an understanding of and the ability to use electronic mail and other internet based services

- Understand the design principles of Web pages and how they are created
- Develop an ability to create basic Web pages with HTML

BCAF4004: VISUAL PROGRAMMING

- Design, create, build, and debug Visual Basic applications
- Explore Visual Basic's Integrated Development Environment (IDE)
- Implement syntax rules in Visual Basic programs
- Explain variables and data types used in program development
- Apply arithmetic operations for displaying numeric output
- Write and apply decision structures for determining different operations
- Write and apply loop structures to perform repetitive tasks
- Write and apply procedures, sub-procedures, and functions to create manageable code

BCAF4005: COMPUTER NETWORKS

- Understand the structure of Data Communications System and its components.
- Familiarize with different network terminologies
- Familiarize with contemporary issues in network technologies
- Know the layered model approach explained in OSI and TCP/IP network models
- Identify different types of network devices and their functions within a network
- Learn basic routing mechanisms, IP addressing scheme and internetworking concepts
- Familiarize with IP and TCP protocols
- To understand major concepts involved in design of WAN, LAN and wireless networks
- Learn basics of network configuration and maintenance
- Know the fundamentals of network security issues

BCAF5001: INTERNET CONCEPTS AND WEB DESIGN

- Understand the terms related to the Internet and how the Internet is changing the world
- Understand how computers are connected to the Internet and demonstrate the ability to use the World Wide Web
- Demonstrate an understanding of and the ability to use electronic mail and other internet based service
- Understand the design principles of Web pages and how they are created
- Develop an ability to create basic Web pages with HTML.

BCAF5002: DESIGN AND ANALYSIS OF ALGORITHMS

- Design and analyze the time and space efficiency of the data structure
- Design an algorithm by selecting appropriate design strategies
- Identify the appropriate data structure for given problem
- Have practical knowledge on the application of data structures
- Apply graph and tree traverse technique to various applications
- Implement algorithm, binary trees, travelling Sales person Problem.

BCAF5003: LINUX PROGRAMMING

- Know the basic concepts and services of Linux Operating System
- Familiar with Linux commands
- Understand shell programming
- Familiar with system administration
- Understand various types of servers

BCAF5004: COMPUTER ORIENTED NUMERICAL METHODS

- Be aware of the use of numerical methods in modern scientific computing
- Be familiar with finite precision computation
- Be familiar with calculation and interpretation of errors in numerical methods

BCAF6001: OPTIMIZATION TECHNIQUES

- Formulate a real-world problem as a mathematical programming model
- Understand the theoretical workings of the simple method for linear programming and perform iterations of it by hand
- Understand the relationship between a linear program and its dual, including strong duality and complementary slackness
- Perform sensitivity analysis to determine the direction and magnitude of change of a model's optimal solution as the data change
- Solve specialized linear programming problems like the transportation and assignment problems Solve network models like the shortest path, minimum spanning tree, and maximum flow problems

BCAF6002: PRINCIPLE OF MANAGEMENT

- Understand the role of management and its limitations
- Prepare financial statements in accordance with Generally Accepted Management Principles
- Demonstrate knowledge of each step in the Management cycle

BCAF6003: ACCOUNTING AND FINANCIAL MANAGEMENT

- The objective of this course is to help students understand the conceptual framework of financial management.
- Understand the basics of accounting
- Know how to record financial business accounts

BCAF6004: NETWORK SECURITY

- Develop an understanding of information assurance as practiced in computer operating systems, distributed systems, networks and representative applications
- Gain familiarity with prevalent network and distributed system attacks, defences against them, and forensics to investigate the aftermath
- Develop a basic understanding of cryptography, how it has evolved, and some key encryption techniques used today
- Develop an understanding of security policies (such as authentication, integrity and confidentiality), as well as protocols to implement such policies in the form of message exchanges.

PROGRAMME OUTCOME: B.A. HINDI CORE

हिन्दी

निज भाषा उन्नति अहै, सब उन्नति का मूल।
बिन निज भाषा ज्ञान के, मिटै न हिम का मूल ॥

— भारतेन्दु हरिश्चन्द्र

भाषा भावाभिधायिता का सशक्त माध्यम है। हम अपने भावों की अभिव्यक्ति जितने अच्छे से अपनी भाषा में कर सकते हैं उतने अच्छे से अन्य भाषाओं में नहीं कर सकते। हिन्दी हमारे देश की जनभाषा, राजभाषा एवं राष्ट्रभाषा है। यह भारतीय भाषाओं में सबसे अधिक बोली एवं प्रयोग की जानेवाली भाषा है। इसका प्रयोग देश-विदेश दोनों जगहों पर होता है। यह उच्च, मध्य, निम्न, शिक्षित, अशिक्षित सभी वर्गों की भाषा है। हिन्दी भाषा का अपना व्याकरण है, शब्दकोष है एवं औपचारिक शिक्षण के रूप में है। यह एक विकसित भाषा की भाँती सभी प्रकारों को पूरा करने में सक्षम है। यही कारण है कि हिन्दी भाषा ने स्वतंत्रता आन्दोलन के समय सफ़र उत्तर से लेकर दक्षिण तक और पूर्व से लेकर पश्चिम तक सारे भारतवर्ष को एकसूत्र में पिरोने का काम किया। धीरे-धीरे इसने प्रशासकीय क्षेत्रों में भी अपना सिक्का जमाना शुरू कर दिया। अब इस क्षेत्र में भी इसकी जड़ गहरी हो चुकी है। वर्तमान समय में हिन्दी की प्रयोजनीयता में कई जीवोपयोगी क्षेत्रों में अपनी उपस्थिति दर्ज करा ली है। आज कार्यलय विज्ञान संचार पत्रकारिता आदि विभिन्न क्षेत्रों में हिन्दी का प्रयोग हो रहा है। साहित्यिक विषयों की भाषा ज्यादा वैचारिक, विश्लेषणात्मक तथा सूचनात्मक होती है। इसमें मानवीय मूल्यों की दरज़र नहीं होती किन्तु साहित्यिक भाषा मानवीय मूल्यों, संवेदनाओं के साथ-साथ बान का विशाल भंडार होता है। विज्ञान एवं तकनीकी प्रदान शिक्षा के इस युग में जहाँ मानवीय संवेदनाएँ भरती जा रही हैं, मानवमूल्य विनष्ट होते जा रहे हैं वहाँ साहित्य की हिन्दी बोलचाल की हिन्दी मानवमूल्यों के टूटन एवं भरती हुई संवेदनाओं को किनारे होने से बचाने का काम कर रही है। कार्यलयों में प्रयुक्त हिन्दी देश की व्यवस्था में बहुमूल्य योगदान दे रही है। इस प्रकार हिन्दी भाषा व्यक्तिके सर्वांगीण विकास में सहायक है। यह केवल राष्ट्रीय गुणवत्ता और संस्कार संस्कृति की ही भाषा नहीं है वरन् विश्वज्ञान की महती शैलगशिन्मुख भाषा भी है। हिन्दी भाषा के अध्ययन से विद्यार्थियों को निम्नवत लाभ होता है —

① बच्चों को हिन्दी के उद्भव और विकास का ज्ञान होता है।

- ② दातों में हिन्दी साहित्य के विविध-विधाओं का ज्ञान होता है।
- ③ दातों में हिन्दी भाषा साहित्य में समझने, अध्ययन, आस्वादन और मूल्यांकन की क्षमता का विकास होता है।
- ④ दातों में हिन्दी साहित्य के माध्यम से नैतिक मूल्यों, सामाजिक मूल्यों एवं राष्ट्रीय मूल्यों के प्रति आस्था निर्मित होती है।
- ⑤ दातों में हिन्दी भाषा के प्रयोग का व्यवस्थित एवं व्यवस्थित ज्ञान प्राप्त होता है।
- ⑥ दातों में हिन्दी साहित्य के माध्यम से भावात्मक एवं सौन्दर्यात्मक क्षमता की शक्ति होती है।
- ⑦ दातों में कहानी, कविता नाटक उपन्यास इत्यादि विविध-विधाओं के लेखन की क्षमता का विकास होता है।
- ⑧ हिन्दी के दात बी० एड० करके शिक्षक बन सकते हैं। महाविद्यालयों में सहायक प्राध्यापक बन सकते हैं।
- ⑨ हिन्दी के दात पत्रकार बन सकते हैं। समाचार वाचक बन सकते हैं।
- ⑩ दात अनुवादक बन सकते हैं।
- ⑪ हिन्दी पढ़कर दात पत्रकारिता लेखक, संवाद लेखक और विज्ञापन लेखक बन सकते हैं।
- ⑫ दातों में अभिलेखों में प्रयुक्त होने वाली कथालिपी हिन्दी का ज्ञान प्राप्त होता है।
- ⑬ हिन्दी के दात सिविल सेवा परीक्षा में हिन्दी का विषय एवं माध्यक बन सकते हैं।
- ⑭ हिन्दी के दात भाषा पदाधिकारी बन सकते हैं।
- ⑮ हिन्दी के दात अपने रचनात्मक लेखने के माध्यम से समाज में जागरूकता ला सकते हैं।

COURSE OUTCOME B.A. HINDI CORE

CORE I

आदिकालः इतिहास एवं साहित्य

प्रत्येक भाषा, साहित्य एवं देश का अपना इतिहास होता है। साहित्येतिहास लेखन की परम्परा एवं प्रवृत्तियाँ होती हैं। हिन्दी साहित्य का इतिहास चार भागखंडों में विभाजित है - आदिकाल, भक्तिकाल, रीतिकाल और आधुनिक काल। प्रथम पक्ष में आदिकाल का इतिहास एवं साहित्य छात्रों में पढ़ाया जाता है। आदिकालीन इतिहास एवं साहित्य के अध्ययन से छात्रों में निम्नवत् लाभ होते हैं -

- ① छात्रों में हिन्दी साहित्य के इतिहास लेखन की परम्परा का ज्ञान होता है।
- ② विभिन्न विद्वानों ने हिन्दी साहित्य के इतिहास को लिखा, इसका ज्ञान होता है।
- ③ छात्रों में हिन्दी साहित्य के भागखंडों का गहन अध्ययन एवं सीमांकन जिस आधार पर किया गया है इसका ज्ञान होता है।
- ④ छात्रों में इस बात का ज्ञान होता है कि हिन्दी साहित्य के आदिकाल की प्रवृत्तियाँ क्या थी।
- ⑤ छात्रों में इस बात का ज्ञान होता है कि हिन्दी साहित्य के आदिकाल के कवि जैन-जैन से हैं। उन्होंने जिस शहर की श्रविका हैं लिखी है।
- ⑥ छात्रों में उस समय के सम्प्रदाय एवं संस्कृति का ज्ञान होता है।

CORE II

भक्तिकालः इतिहास एवं साहित्य

भक्तिकालीन इतिहास एवं साहित्य के अध्ययन से छात्रों में निम्नवत् लाभ होते हैं -

- ① छात्रों में भक्तिपरक साहित्य की प्रवृत्तियाँ का ज्ञान होता है।
- ② छात्रों में तत्कालीन समय में चलाये गये भक्ति-आन्दोलन के बारे में गहनरी-ज्ञात होती है।
- ③ छात्रों में सगुण एवं निगुण भक्ति का ज्ञान होता है।
- ④ छात्रों में भक्ति के सगुण शारदा में प्रवाहित राम एवं कृष्ण भाव्य-धाराओं का ज्ञान होता है।
- ⑤ छात्रों में निगुण भक्ति शारदा में प्रवाहित ज्ञानाश्रयी एवं प्रेमाश्रयी शारदाओं का ज्ञान होता है।
- ⑥ भक्तिकाल के श्रवियों एवं उनकी रचनाओं का ज्ञान होता है।
- ⑦ छात्रों में भक्तिमूलक भाव्य के अध्ययन से नैतिक श्रव्यों का विश्वास होता है।
- ⑧ छात्रों में रचनात्मक चैशल का विश्वास होता है।

CORE IIIरीतिकालः इतिहास एवं साहित्य

रीतिकालीन इतिहास एवं साहित्य के अध्ययन से छात्रों को निम्नवत लाभ होते हैं —

- ① छात्रों को रीतिकाल के विविध नामकरण एवं सीमांकन का ज्ञान होता है।
- ② छात्रों को इस बात का ज्ञान होता है कि तत्कालीन प्रेरक परिस्थितियाँ किस प्रकार की थीं।
- ③ छात्रों को तत्कालीन संस्कृति का ज्ञान होता है।
- ④ छात्रों को रीतिकाल में लिखे गये रीतिबद्ध, रीतिभुक्त एवं रीतिसिद्ध कव्य तथा उनके कवियों के विषय में जानकारी प्राप्त होती है।
- ⑤ छात्रों में दोहे जैसी छोटी कविता के माध्यम से बड़ी-बड़ी बातों को कहने की क्षमता का विकास होता है।

CORE IVआधुनिककाल और साहित्य

आधुनिककालीन साहित्य के अध्ययन से छात्रों को निम्नवत लाभ होते हैं —

- ① छात्रों को आधुनिकता की अवधारणा का ज्ञान होता है।
- ② छात्र हिन्दी साहित्य के विकास में आधुनिक काल के साहित्यकारों के योगदान से परिचित होते हैं।
- ③ छात्रों को आधुनिक काल में लिखे गये राष्ट्रीय काव्यधारा का ज्ञान होता है।
- ④ छात्र आधुनिक काल के कवियों के जीवन एवं कविता से परिचित होते हैं।
- ⑤ छात्रों में राष्ट्रीय काव्यधारा के माध्यम से राष्ट्रीय चेतना के भाव उत्पन्न होते हैं।
- ⑥ छात्रों को कविता लिखने की प्रेरणा मिलती है।
- ⑦ छात्रों में रचनात्मक कौशल का विकास होता है।

आधुनिक काल और साहित्य

आधुनिक हिन्दी साहित्य में द्विवेदी युग के पश्चात दायवाद, प्रगतिवाद, प्रयोगवाद तथा नई कविता का दौर आया। दायवाद, प्रगतिवाद, प्रयोगवाद और नई कविता के अध्ययन से छात्रों को निम्नवत लाभ होते हैं—

- ① छात्रों को इस बात का ज्ञान होता है कि दायवाद, प्रगतिवाद, प्रयोगवाद और नई कविता के नामकरण का आधार क्या है तथा इनकी सीमा कब से कब तक मानी गयी है।
- ② छात्रों को तत्कालीन परिस्थितियों का ज्ञान होता है।
- ③ छात्रों को दायवाद, प्रगतिवाद, प्रयोगवाद, नई कविता की उपलब्धियों का ज्ञान होता है।
- ④ छात्रों को दायवादी, प्रगतिवादी, प्रयोगवादी कवियों के जीवन एवं साहित्यिक कृतियों का ज्ञान होता है।
- ⑤ छात्रों को दायवादी, प्रगतिवादी, प्रयोगवादी तथा नई कविता का ज्ञान होता है।
- ⑥ छात्रों में विभिन्न तरह के काव्य लिखने की रुझान का विकास होता है।

CORE VII, XIII

हिन्दी उपन्यास

उपन्यास आधुनिक हिन्दी साहित्य की प्रसिद्ध गद्य विधा है। हिन्दी उपन्यास के अध्ययन से छात्रों को निम्नवत लाभ होते हैं—

- ① छात्रों को उपन्यास के स्वरूप और विशेषताओं का ज्ञान होता है।
- ② छात्रों को उपन्यास के भेद एवं उनमें निहित तत्वों का ज्ञान होता है।
- ③ छात्रों को हिन्दी उपन्यास के उद्भव और विकास का ज्ञान होता है।
- ④ छात्रों को स्वतंत्रता के पूर्व एवं स्वतंत्रता के पश्चात लिखे गये उपन्यासों का ज्ञान होता है।
- ⑤ छात्रों को विभिन्न तरह के उपन्यास पढ़ने के अवसर प्राप्त होते हैं जिनसे उनकी ज्ञानवृद्धि एवं मनोरंजन होता है।
- ⑥ छात्रों में उपन्यास पढ़ने और लिखने की क्षमता का विकास होता है।

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CORE VIII, VIII ग्रुप:बी

हिन्दी कथानी

कथानी हिन्दी साहित्य की महत्वपूर्ण विधा है। कथानी के अध्ययन से छात्रों को निम्नवत लाभ होते हैं -

- 1) छात्रों को कथानी के स्वरूप का ज्ञान होता है।
- 2) छात्रों को कथानी के उद्भव और विकास का ज्ञान होता है।
- 3) छात्रों को स्वतंत्रता पूर्व और स्वतंत्रता के बाद लिखी गई कथानियों का ज्ञान होता है।
- 4) छात्रों को कथानियों के प्रकार एवं विशेषताओं का ज्ञान होता है।
- 5) छात्रों को कथानियों में निहित तत्व का ज्ञान होता है।
- 6) छात्रों को विभिन्न कथानियों पढ़ने का अवसर प्राप्त होता है जिन्हें उन्होंने मनीरंजन के साथ ज्ञानवर्धन किया है।
- 7) छात्रों को कथानी पढ़ने एवं लिखने का कौशल-विकास होता है।

CORE IX, XIV ग्रुप:ए

हिन्दी नाटक

हिन्दी नाटक के अध्ययन से छात्रों को निम्नवत लाभ होते हैं -

- 1) छात्रों को नाटक के स्वरूप का ज्ञान होता है।
- 2) छात्रों को नाटक के तत्व का ज्ञान होता है।
- 3) छात्रों को नाटक के भेद का ज्ञान होता है।
- 4) छात्रों को नाटक के उद्भव और विकास का ज्ञान होता है।
- 5) छात्रों को नाटक के विशेषताओं और मूल्य का ज्ञान होता है।
- 6) छात्रों को विभिन्न प्रकार के नाटक पढ़ने का अवसर प्राप्त होता है।
- 7) छात्रों को नाटक पढ़ने एवं लिखने की क्षमता का विकास होता है।

CORE X, XIV ग्रुप:बी

हिन्दी रसिकी

हिन्दी रसिकी के अध्ययन से छात्रों को निम्नवत लाभ होते हैं -

- 1) छात्रों को हिन्दी रसिकी के स्वरूप का ज्ञान होता है।
- 2) हिन्दी रसिकी के उद्भव और विकास का ज्ञान होता है।
- 3) छात्रों को रसिकी की विशेषताओं का ज्ञान होता है।
- 4) छात्रों को हिन्दी रसिकी और नाटक में क्या अंतर है इस बात का ज्ञान होता है।
- 5) छात्रों को रसिकी पढ़ने का अवसर प्राप्त होता है।
- 6) छात्रों को रसिकी के तत्व का ज्ञान होता है।
- 7) छात्रों में रसिकी पढ़ने एवं लिखने की कला का विकास होता है।

CORE XIहिन्दी आलोचना

हिन्दी आलोचना के अध्ययन से छात्रों को निम्नवत लाभ होते हैं—

- ① छात्रों को हिन्दी आलोचना के स्वरूप और महत्व का ज्ञान होता है।
- ② छात्रों को हिन्दी आलोचना के उद्भव और विकास का ज्ञान होता है।
- ③ छात्रों को आलोचना के प्रकार का ज्ञान होता है।
- ④ छात्रों को आलोचना पढ़ने का अवसर प्राप्त होता है।
- ⑤ छात्रों को ऐतिहासिक आलोचना, तुलनात्मक आलोचना, सैद्धान्तिक आलोचना और भौतिकविश्लेषणात्मक आलोचना में क्या फर्क है इसके ज्ञान होता है।
- ⑥ छात्रों को आलोचना लिखने का ज्ञान होता है।

CORE XIIकाव्यशास्त्र

काव्यशास्त्र के अध्ययन से छात्रों को निम्नवत लाभ होते हैं—

- ① छात्रों को काव्य-लक्षण का ज्ञान होता है।
- ② छात्रों को शब्दशक्ति का ज्ञान होता है।
- ③ छात्रों को रसनिष्पत्ति एवं साधारणीकरण का ज्ञान होता है।
- ④ छात्रों को दंडो - दोहा, भोरठा, चौपाई, शैला, कवित्त आदि का ज्ञान होता है।
- ⑤ छात्रों को अलंकारों - अनुप्रास, यमक, श्लेष, उपमा, अतिशयोक्ति आदि का ज्ञान होता है।
- ⑥ छात्रों को काव्यशास्त्र के अध्ययन से काव्यकला में निपुण हो जाते हैं।

CORE XIVजनसंचार

जनसंचार के अध्ययन से छात्रों को निम्नवत लाभ होते हैं—

- ① छात्रों को जनसंचार के परिभाषा एवं महत्व का ज्ञान होता है।
- ② छात्रों को जनसंचार के स्वरूप का ज्ञान होता है।
- ③ छात्रों को जनसंचार के शैक्षणिक माध्यम का ज्ञान होता है।
- ④ छात्रों को जनसंचार के नव शैक्षणिक माध्यम का ज्ञान होता है।
- ⑤ छात्रों को जनसंचार के प्रिन्ट माध्यम का ज्ञान होता है।
- ⑥ जनसंचार के अध्ययन से छात्रों में शोचनार के अवसर प्राप्त होते हैं।

CORE XVI

पल्लारिता

पल्लारिता के अध्ययन से छात्रों में निम्नवत लाभ होते हैं:-

- ① छात्रों में हिन्दी पल्लारिता के परिभाषा और स्वरूप का ज्ञान होता है।
- ② छात्रों में पल्लारिता के महत्व का ज्ञान होता है।
- ③ छात्रों में हिन्दी पल्लारिता के उद्भव और विकास का ज्ञान होता है।
- ④ छात्रों में पल्लारिता के क्षेत्र का ज्ञान होता है।
- ⑤ छात्रों में समाचार संकलन एवं सम्पादन का ज्ञान होता है।
- ⑥ छात्रों में पल्लारिता के प्रयुक्त का ज्ञान प्राप्त होता है।
- ⑦ छात्रों में शैली पल्लारिता, शैली पल्लारिता इत्यादि विभिन्न प्रकार के पल्लारिता में पढ़ने का अवसर मिलता है।
- ⑧ पल्लारिता के अध्ययन से छात्रों के ज्ञान का विकास होता है तथा उन्हें रोजगार के अवसर प्राप्त होते हैं।

CORE XVII

सूरदास

सूरदास हिन्दी साहित्य के भक्तिकाल के सुप्रसिद्ध कवि हैं। उनके अध्ययन से छात्रों में निम्नवत लाभ होते हैं:-

- ① छात्रों में सुप्रसिद्ध कवि सूरदास के जीवन और दर्शन का ज्ञान प्राप्त होता है।
- ② छात्रों में सूरदास के रचना संसार एवं उनकी विशेषताओं का ज्ञान प्राप्त होता है।
- ③ कवि सूरदास ने कृष्ण के बाललीला का आधुनिक वर्णन अपनी रचनाओं में किया है जिन्हें छात्रों में पढ़ने का अवसर प्राप्त होता है।
- ④ कवि सूरदास ने भक्तगीत में वियोग भंगार का बड़ा ही सुन्दर चित्रण किया है उन्हें छात्रों में पढ़ने का अवसर प्राप्त होता है।
- ⑤ छात्र कवि सूरदास के पद पढ़कर उनके अत्यन्त विशेषताओं से परिचित होते हैं।
- ⑥ छात्रों में रचना कौशल का विकास होता है।

CORE XVII

लुलसीदास

कवि लुलसीदास विश्वप्रसिद्ध ग्रंथ 'रामचरित मानस' के रचनामय शतकाव्य परम्परा के सुप्रसिद्ध कवि हैं। कवि लुलसीदास के अध्ययन से छात्रों को निम्नवत लाभ होते हैं -

- ① छात्रों को कवि लुलसीदास के जीवन और दर्शन का ज्ञान प्राप्त होता है।
- ② छात्रों को कवि लुलसीदास के रचनासंसार और उनकी काव्यगत विशेषताओं का ज्ञान प्राप्त होता है।
- ③ छात्रों को रामचरित मानस के पुरुषवाटिक प्रसंग को पढ़ने का अवसर प्राप्त होता है।
- ④ छात्रों को लुलसीदास द्वारा विनयपत्रिका के कुछ पद पढ़ने का अवसर प्राप्त होता है।
- ⑤ छात्रों में कवि लुलसीदास और उनकी रचनाओं को पढ़ने से मानवमूल्य का विस्तार होता है।
- ⑥ छात्रों में रचना में शैली का विकास होता है।

CORE XVIII ग्रुप - 'ख'

राष्ट्रभाषा हिन्दी

राष्ट्रभाषा हिन्दी के अध्ययन से छात्रों को निम्नवत लाभ होते हैं -

- ① छात्रों को राष्ट्रभाषा हिन्दी की स्थिति का ज्ञान होता है।
- ② छात्रों को राष्ट्रभाषा के रूप में हिन्दी की संवैधानिक स्थिति का ज्ञान होता है।
- ③ छात्रों को मातृभाषा और सम्पर्क भाषा के रूप में हिन्दी की स्थिति का ज्ञान होता है।
- ④ छात्रों को हिन्दी की लिपि - देवनागरी लिपि के उद्भव और विकास का ज्ञान होता है।
- ⑤ छात्रों को देवनागरी लिपि के गुण-दोष का ज्ञान होता है।
- ⑥ छात्रों को देवनागरी लिपि की वैज्ञानिकता और मानकीकरण का ज्ञान होता है।
- ⑦ राष्ट्रभाषा हिन्दी के अध्ययन से छात्रों में अपने राष्ट्र और राष्ट्रभाषा के प्रति प्रेम की भावना उत्पन्न होती है।
- ⑧ छात्र राष्ट्रभाषा के विकास में योगदान देते हैं।

CORE XVIII ग्रुप - बी.

कामकाजी हिन्दी

कामकाजी हिन्दी के अध्यायन से छात्रों को निम्नवत लाभ होते हैं—

- ① छात्रों को प्रयोगशूल्क हिन्दी से अभिप्राय और खेल का ज्ञान प्राप्त होता है।
- ② छात्रों से प्रयोगशूल्क हिन्दी की परिभाषाओं और शैलियों का ज्ञान होता है।
- ③ छात्रों से सामान्य हिन्दी और प्रयोगशूल्क में अन्तर का ज्ञान होता है।
- ④ कामकाजी-हिन्दी में लिखे जाने वाले टिप्पणी, पत्रलेखन आदि का ज्ञान छात्रों को होता है।
- ⑤ छात्रों को पारिभाषिक शब्दावली का ज्ञान होता है।
- ⑥ छात्रों से पारिभाषिक शब्दावली के निर्माण की प्रक्रिया का ज्ञान होता है।
- ⑦ छात्रों से पारिभाषिक शब्दावली के निर्माण में आने वाली समस्याओं का ज्ञान होता है।
- ⑧ छात्रों से आने वाली ~~समस्याओं~~ समस्याओं के समाधान का भी ज्ञान प्राप्त होता है।
- ⑨ छात्रों से कामकाजी हिन्दी पढ़ने व लिखने का अवसर प्राप्त होता है।
- ⑩ छात्रों को रोजगार के अवसर प्राप्त होते हैं।

डॉ० अनुपमा सिंह
हिन्दी विभाग
के० बी० मे० महाविद्यालय
हजारीबाग

स्नातक स्तर पर शैक्षणिक प्रक्रिया में राजनीति विज्ञान विषय के पाठ्यक्रम का महत्व/उद्देश्य

राजनीति विज्ञान विभाग,

के०बी० महिला महाविद्यालय, विभावि, हजारीबाग।

प्रत्येक समाज, राज्य अथवा राष्ट्र की अपनी कुछ मान्यताएँ होती हैं, विश्वास, आदर्श एवं महत्व होते हैं। इनकी पूर्ति के लिए राज्य के द्वारा शिक्षा की व्यवस्था किया जाता है और इसके उद्देश्य निश्चित किये जाते जाते हैं। इन उद्देश्यों की प्राप्ति के लिए जिन विषयों का ज्ञान एवं प्रशिक्षण की आवश्यकता होती है, उन्हें पाठ्यक्रम में स्थान दिया जाता है। इस प्रकार पाठ्यक्रम शिक्षक एवं शिक्षार्थी के समक्ष स्पष्ट एवं निश्चित लक्ष्य रखता है और उनकी प्राप्ति के लिए कार्य योजना भी निश्चित किया जाता है। नियोजित शिक्षण के लिए पाठ्यक्रम अतिआवश्यक है।

किसी भी समाज की शिक्षा का उद्देश्य मुख्य रूप से उसके व्यक्तियों के जीवन दर्शन पर आधारित होते हैं। समाज की विशेष संरचना, उसकी सभ्यता और संस्कृति तथा धार्मिक, राजनीतिक एवं आर्थिक स्थिति का भी शिक्षा के उद्देश्यों पर प्रभाव पड़ता है। मानव की स्वयं की प्रकृति भी शिक्षा के स्वरूप को प्रभावित करती है। वर्तमान का युग विज्ञान एवं तकनीकी का युग है। इसलिए इसका भी प्रभाव शिक्षा के उद्देश्यों पर प्रभाव पड़ता है। इस प्रकार शिक्षा के उद्देश्यों का मनुष्य के जीवन और समाज के आदर्शों से गहरा संबंध है। अतः शैक्षणिक उद्देश्यों के निर्धारण में इसका महत्वपूर्ण स्थान होता है।

राष्ट्रीय पाठ्यचर्चा की रूपरेखा 2005 के अनुसार समाज विज्ञान के अंतर्गत समाज के अनेक सरोकारों का समावेश होता है। इसकी अर्न्तवस्तु बहुत विविध है जिसमें भूगोल, राजनीति विज्ञान, अर्थशास्त्र, समाजशास्त्र तथा मानव विज्ञान जैसे विषयों से विषयवस्तु समाहित होती है। समाज विज्ञान परिप्रेक्ष्य का ज्ञान एक समतामूलक और शांतिमूलक समाज का ज्ञान आधार बनाने की दिशा में अपरिहार्य है। इसकी विषयवस्तु का उद्देश्य जानी पहचानी सामाजिक समता की समीक्षात्मक जाँच तथा उस पर प्रश्न करते हुए विद्यार्थियों की आलोचनात्मक जागरुकता का संवर्धन होना चाहिए। विद्यार्थियों के अपने जीवन के संबंध में नवीन आयाम एवं नवीन पहलूओं को स्थान प्राप्त करना महत्वपूर्ण है। एक सार्थक पाठ्यक्रम के लिए सामग्री का चयन और इसका निर्धारण ऐसे पाठ्यक्रम जो विद्यार्थियों में समाज के प्रति आलोचनात्मक समझ का करे। इस दिशा में कार्य किये जाते रहे हैं।

इस तथ्य के संदर्भ में विनोबा भावे विश्वविद्यालय द्वारा सी0बी0सी0एस0 प्रणाली के अधीन राजनीति विज्ञान का स्नातक स्तरीय पाठ्यक्रम अपने छात्रों में सम्यक् एवं आलोचनात्मक समझ विकसित करने में सक्षम है। राजनीति विज्ञान अन्य सामाजिक विज्ञानों में सर्वाधिक समसामयिक और यथार्थवादी विषय का स्वरूप ग्रहण कर लिया है। इसके पाठ्यक्रम का विश्लेषण विभिन्न समसत्र में पढ़ाए जाने वाले या विद्यार्थियों को ज्ञान देने वाली सामग्री और उनके समक्ष सामाजिक-आर्थिक लाभ के संदर्भ में देखा जा सकता है। मूल रूप से राजनीति विज्ञान विषय पढ़ाने का उद्देश्य सामाजिक संवेदनशीलता, सहकारी सोच, लोकतांत्रिक मूल्यों, देशभक्ति की भावनाओं को विकसित करना है जिसे इस प्रकार देखा जा सकता है।

प्रथम समसत्र (Semester 1)

Core 01 – राजनीतिक सिद्धांत एक परिचय(An Introduction to Political Theory)

- राजनीतिक सिद्धांत की प्रकृति, महत्व और उसके अध्ययन की परम्पराओं का परिचय प्रदान करना।
- सभ्य एवं कुशल नागरिक बनने के लिए राज्य की उत्पत्ति और विकास की उच्च स्तरीय समझ को विकसित करना।
- राज्य के अनिवार्य अंग संप्रभुता, अधिकार, स्वतंत्रता, न्याय, समानता जैसी अवधारणाओं संबंध में जानकारी प्रदान करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों का तयार करना।

Core 02 – स्थानीय स्वशासन(Local Self Government)

- स्थानीय स्वशासन को उत्पत्ति और विकास की अवधारणा की समझ विकसित करना।
- 73 वां और 74 वाँ संविधान संशोधन के विभिन्न आयामों की विस्तृत समझ प्रदान करना।
- ग्रामीण और शहरी स्थानीय संस्थाओं की संरचना और कार्य के संदर्भ में उच्च स्तरीय ज्ञान प्रदान करना।
- जन सहभागिता, स्थानीय स्वशासन में महिलाओं भूमिका का अध्ययन करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों को समझ और चिंतन काशल को विकसित करना।

GE 01 – राजनीतिक सिद्धांत एक परिचय(An Introduction to Political Theory)

- राजनीतिक सिद्धांत की प्रकृति, महत्व और उसके अध्ययन की परम्पराओं का परिचय प्रदान करना।
- सभ्य एवं कुशल नागरिक बनने के लिए राज्य की उत्पत्ति और विकास की उच्च स्तरीय समझ को विकसित करना।

- राज्य के अनिवार्य अंग संप्रभुता, अधिकार, स्वतंत्रता, न्याय, समानता जैसी अवधारणाओं संबंध में जानकारी प्रदान करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों का तयार करना।

AECC- 01 : English Communication/ MIL

- इस पत्र में विद्यार्थियों में अंग्रेजी और हिन्दी भाषा के संवाद कौशल का विकसित करने की समझ विकसित की जाती है।
- विद्यार्थी इसके माध्यम से अपने विषय के लेखन शैली में गुणात्मक परिवर्तन विकसित किया जाता है।

द्वितीय समसत्र (Semester 2)

Core 03 – भारतीय शासन एवं राजनीति (Indian Government & Politics)

- संविधान एवं संवैधानिक प्रावधानों— प्रस्तावना, मौलिक अधिकार एवं कर्तव्य, राज्य के नीति निर्देशक तत्व के संबंध में समझ विकसित करना।
- सरकार के कार्यों के संबंध में समझ विकसित करना।
- भारतीय न्यायिक प्रणाली के संबंध में समझ विकसित करना।
- मंत्रियों एवं पदाधिकारियों के कर्तव्य एवं भूमिका का अध्ययन करना।
- संसद एवं राज्य विधानसभाओं के पदाधिकारियों एवं सदस्यों की भूमिका एवं कार्यों के संबंध में जानकारी प्राप्त करना।
- संसद एवं राज्य विधानसभाओं की संसदीय प्रक्रिया को जानकारी प्राप्त करना।
- विद्यार्थियों का प्रतियोगिता परीक्षाओं की तयारी के लिए उचित मार्गदर्शन प्रदान करना।

Core 04 – भारतीय राजनीतिक चिंतक (Indian Political Thought)

- राजनीतिक विचारकों के दर्शन एवं चिंतन से विद्यार्थियों का अवगत कराना।
- भारतीय प्राचीन मूल्यों एवं मान्यताओं के संबंध में समझ विकसित करना।
- भारतीय सभ्यता और संस्कृति के बारे में जानकारी प्रदान करना।
- स्वतंत्रता प्राप्ति के लिए किये गये त्याग, समर्पण, बलिदान आदि के संबंध में जानकारी प्रदान करना।
- एक बेहतर भारत के निर्माण में हमारी भूमिका के संबंध में समझ विकसित करना।

GE 02 – भारतीय शासन एवं राजनीति (Indian Government & Politics)

- संविधान एवं संवैधानिक प्रावधानों— प्रस्तावना, मौलिक अधिकार एवं कर्तव्य, राज्य के नीति निदेशक तत्व क संबंध में समझ विकसित करना।
- सरकार के कार्यों के संबंध में समझ विकसित करना।
- भारतीय न्यायिक प्रणाली के संबंध में समझ विकसित करना।
- मंत्रियों एवं पदाधिकारियों क कर्तव्य एवं भूमिका का अध्ययन करना
- संसद एवं राज्य विधानसभाओं के पदाधिकारियों एवं सदस्यों की भूमिका एवं कार्यों के संबंध में जानकारी प्राप्त करना।
- संसद एवं राज्य विधानसभाओं की संसदीय प्रक्रिया को जानकारी प्राप्त करना
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मागदर्शन प्रदान करना।

AECC- 02 : पर्यावरणोय विज्ञान (Invironmental Science)

- यह पत्र स्नातक स्तर के विद्यार्थियों में पर्यावरणीय विविधताओं के संबंध में समझ विकसित करता है।
- पर्यावरण संरक्षण के प्रति विद्यार्थियों को जागरुक करता है।
- वन एवं वन्य जीवों के संरक्षण के प्रति समझ विकसित करता है।
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मागदर्शन प्रदान करना।

तृतीय समसत्र (Semester 3)

Core 05 – लोक प्रशासन (Public Administration)

- यह पत्र छात्रों में लोक प्रशासन संबंधी विषयों में व्यापक समझ विकसित करता है।
- इसके द्वारा नीति–निर्माण, नीति–विश्लेषण, प्रशासकीय प्रबंधन के संबंध में समझ विकसित होता है।
- प्रशासनिक संगठन एवं प्रशासनिक संरचना की समझ विकसित होता है।
- प्रशासनिक कर्मचारियों की नियुक्ति प्रक्रिया, प्रशिक्षण, पदोन्नति आदि की प्रक्रिया क संबंध में समझ विकसित करना।
- बजट निर्माण की प्रक्रिया के संबंध में जानकारी प्रदान करना।
- प्रशासनिक व्यवस्था पर विधायिका एवं न्यायपालिका अपन नियंत्रण किस प्रकार रखती है इसकी जानकारी प्रदान करना।
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मागदर्शन प्रदान करना।

Core 06 – पाचीन एवं मध्यकालीन पाश्चात्य राजनीतिक विचारक (Ancient & Medieval Western Political Thought)

- जिन विचारकों के दर्शन एवं चिंतन के आधार पर राजनीतिक सिद्धांतों एवं व्यवस्थाओं की उत्पत्ति एवं विकास हुआ है, उनके संबंध में विद्यार्थियों के समझ को विकसित करना।
- राजनीतिक चिंतन के विकास की समझ को विकसित करना।
- राजनीतिक सिद्धांत को मौलिक अवधारणाओं के विकास की प्रक्रिया को जानकारी प्रदान करना।
- विभिन्न कालखण्डों में राजनीतिक सिद्धांत के विकास की अवधारणा को समझ विकसित करना।
- भविष्य के पाठ्यक्रमों के संबंध में विद्यार्थियों के चिंतन स्तर को विकसित करना।

Core 07 – झारखण्ड की राजनीति (Politics of Jharkhand)

- झारखण्ड का संक्षिप्त परिचय कराते हुए, यहाँ की जनजातीय समुदायों की जनसांख्यिकीय व्यवस्था के संबंध में जानकारी प्रदान करना।
- अलग झारखण्ड राज्य की स्थापना में किये गये आंदोलन की जानकारी प्रदान करना।
- जनजातीय समाज के विभिन्न मुद्दों के संबंध में समझ विकसित करना।
- झारखण्ड की राजनीति में विभिन्न सामाजिक-आर्थिक कारकों के संबंध में जानकारी प्रदान करना।
- झारखण्ड में नक्सलवाद की विकराल होती समस्या की ओर विद्यार्थियों का ध्यान आकृष्ट करना।
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मागदर्शन प्रदान करना।

GE 03 – लोक प्रशासन (Public Administration)

- यह पत्र छात्रों में लोक प्रशासन संबंधी विषयों में व्यापक समझ विकसित करता है।
- इसके द्वारा नीति-निर्माण, नीति-विश्लेषण, प्रशासकीय प्रबंधन के संबंध में समझ विकसित होता है।
- प्रशासनिक संगठन एवं प्रशासनिक संरचना की समझ विकसित होता है।
- प्रशासनिक कर्मचारियों की नियुक्ति प्रक्रिया, प्रशिक्षण, पदोन्नति आदि की प्रक्रिया के संबंध में समझ विकसित करना।
- बजट निर्माण की प्रक्रिया के संबंध में जानकारी प्रदान करना।
- प्रशासनिक व्यवस्था पर विधायिका एवं न्यायपालिका अपन नियंत्रण किस प्रकार रखती है इसकी जानकारी प्रदान करना।

SEC 01 – भारत का संविधान एवं मानवाधिकार (Constitution of India & Human Rights)

- विद्यार्थियों में कौशल के विकास के लिए भारतीय संविधान के संबंध में समझ को व्यापक करना।
- मानवाधिकारों की अवधारणा के संबंध में जानकारी प्रदान करना।
- मानवाधिकारों के संरक्षण के लिए अंतर्राष्ट्रीय स्तर पर किये जा रहे कार्यों के संबंध में जानकारी प्रदान करना।
- मानवाधिकारों के संरक्षण के प्रति विद्यार्थियों को प्रेरित करना।
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मागदर्शन प्रदान करना।

चतुर्थ समसत्र (Semester 4)

Core 08 – अंतर्राष्ट्रीय राजनीति(International Politics)

- विद्यार्थियों को अंतर्राष्ट्रीय राजनीति के संबंध में विस्तृत समझ विकसित करना।
- अंतर्राष्ट्रीय राजनीति के आदर्शवादी एवं यथार्थवादी सिद्धांत को जानकारी प्रदान करना।
- शक्ति आधारित राजनीति, शक्ति संतुलन और सामूहिक सुरक्षा के संबंध में समझ को विकसित करना।
- शस्त्रीकरण और निःशस्त्रीकरण के संबंध में जानकारी प्रदान करना।
- अंतर्राष्ट्रीय शांति और सुरक्षा के लिए स्थापित संयुक्त राष्ट्र संघ के संबंध में समझ विकसित करना।
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मागदर्शन प्रदान करना।

Core 09 – आधुनिक पाश्चात्य राजनीतिक विचारक (Modern Western Political Thought)

- जिन विचारकों के दर्शन एवं चिंतन के आधार पर राजनीतिक सिद्धांतों एवं व्यवस्थाओं की उत्पत्ति एवं विकास हुआ है, उनके संबंध में विद्यार्थियों के समझ को विकसित करना।
- मैकियावेली, हाब्स, लॉक, रूसो, बेंथम, मिल के विभिन्न राजनीतिक अवधारणाओं के संबंध में आलोचनात्मक मूल्यांकन की समझ विकसित करना।
- राजनीतिक सिद्धांत के आधार के संबंध में जानकारी प्रदान करना।
- राजनीतिक सिद्धांत की मौलिक विशेषताओं के संबंध में जानकारी प्रदान करना।
- विद्यार्थियों को भविष्य पाठ्यक्रमों के संबंध में शिक्षण में सहायता प्रदान करना।

Core 10 – राजनीतिक समाजशास्त्र (Political Sociology)

- राजनीतिक समाजशास्त्र की प्रकृति और क्षेत्र के संबंध में जानकारी प्रदान करना।

- विद्यार्थियों को राजनीतिक संस्कृति, राजनीतिक समाजीकरण, राजनीतिक सहभागिता, आदि के संबंध में समझ को विकसित करना।
- विद्यार्थियों को भविष्य में पढ़े जाने वाले राजनीतिक समाजशास्त्र के संबंध में एक समझ को विकसित करना।
- विद्यार्थियों के चिंतन स्तर को व्यापक करना।

GE 04 – अंतर्राष्ट्रीय राजनीति(International Politics)

- विद्यार्थियों को अंतर्राष्ट्रीय राजनीति के संबंध में विस्तृत समझ विकसित करना।
- अंतर्राष्ट्रीय राजनीति के आदर्शवादी एवं यथार्थवादी सिद्धांत को जानकारी प्रदान करना।
- शक्ति आधारित राजनीति, शक्ति संतुलन और सामूहिक सुरक्षा के संबंध में समझ को विकसित करना।
- शस्त्रीकरण और निःशस्त्रीकरण के संबंध में जानकारी प्रदान करना।
- अंतर्राष्ट्रीय शांति और सुरक्षा के लिए स्थापित संयुक्त राष्ट्र संधि के संबंध में समझ विकसित करना।
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मार्गदर्शन प्रदान करना।

SEC 2 – भारतीय इतिहास, संस्कृति एवं विविधता(Indian History Culture & Diversity)

- वर्तमान के अध्ययन का आधार अतीत को परंपराओं में निहित होता है, इतिहास राजनीति विज्ञान को व्यापक आधार प्रदान करने में मदद करना।
- इसके माध्यम से छात्र भारतीय इतिहास एवं संस्कृति की जानकारी प्रदान करना।
- भारत की विविधतापूर्ण संस्कृति के बीच एकता का समन्वय इस विषय के माध्यम से विद्यार्थियों को प्रदान करना।
- विद्यार्थियों का पतियोगिता परीक्षाओं की तयारी के लिए उचित मार्गदर्शन प्रदान करना।

पंचम समसत्र (Semester 5)

Core 11 – राजनीतिक विचारधारा (Political Ideology)

- विद्यार्थियों को विचारधारा के अर्थ तथा इसकी विषय वस्तु के संबंध में जानकारी प्रदान करना।
- विद्यार्थियों में राष्ट्रवादी विचारधारा एवं उसका प्रभाव की समझ विकसित करना।
- लोकतांत्रिक समाजवाद के विभिन्न पहलुओं की जानकारी प्रदान करना।
- उदारवाद और नव-उदारवाद की अवधारणा की समझ विकसित करना।

- मार्क्सवाद, समाजवाद, साम्यवाद की अवधारणाओं की जानकारी प्रदान करना।
- उच्च कक्षाओं में अध्ययन के लिए एक समुचित चिंतन विकसित करना।

Core 12 – तुलनात्मक शासन एवं राजनीति (Comparative Government & Politics)

- पांच प्रमुख महाशक्तियों (अमेरिका, ब्रिटेन, चीन, फ्रांस, स्वीटजरलैण्ड) की प्रशासनिक व्यवस्था की संरचना एवं क्रियाकलापों को जानकारी प्रदान करना।
- विद्यार्थियों में तुलनात्मक अध्ययन के प्रति एक समझ विकसित करना।
- विभिन्न प्रकार की शासन व्यवस्थाओं में सरकार की कार्य प्रणाली, राजनीतिक संरचना के प्रति समझ विकसित करना।
- पांचों महाशक्तियों की संवधानिक संरचना के संबंध में जानकारी प्रदान करना।
- विद्यार्थियों को स्वीटजरलैण्ड की प्रत्यक्ष लोकतंत्र को जानकारी प्रदान करना।
- उच्च कक्षाओं में अध्ययन के लिए तुलनात्मक शासन एवं राजनीति विषय के लिए विद्यार्थियों में एक समुचित चिंतन विकसित करना।

DSE 1 A – अंतर्राष्ट्रीय कानून (International Law)

- अंतर्राष्ट्रीय कानून के उत्पत्ति और विकास की अवधारणा की समझ विकसित करना।
- अंतर्राष्ट्रीय कानून के क्षेत्र में ह्यूगो ग्रोशियस के योगदानों, अंतर्राष्ट्रीय कानून के संहिताकरण, राज्यों की मान्यता, राज्यों के उत्तराधिकार के संबंध में जानकारी प्रदान करना।
- विभिन्न अंतर्राष्ट्रीय संधियों के निर्धारण और उसके अनुपालन के संबंध में समझ विकसित करना।
- राष्ट्रीय कानून और अंतर्राष्ट्रीय कानून के संबंध में जानकारी प्रदान करना।
- उच्च कक्षाओं में अध्ययन के लिए अंतर्राष्ट्रीय कानून विषय के लिए विद्यार्थियों में एक समुचित चिंतन विकसित करना।

DSE 1 B – भारतीय राजनीति में समकालीन मुद्दे (Contemporary Issues in Indian Politics)

- इस विषय में विद्यार्थियों को राष्ट्रीय एकीकरण के समक्ष आने वाली चुनातियों और उसके समाधान के संबंध में जानकारी उपलब्ध कराई जाती है।
- भारतीय राजनीति के समक्ष प्रमुख चुनातियों धर्मनिरपेक्षता एवं आरक्षण की राजनीति की समझ विकसित करना।
- भारतीय लोकतंत्र के चतुर्थ स्तंभ के रूप में विद्यमान मीडिया की भूमिका और इसकी सीमाओं की जानकारी प्रदान करना।

- भारतीय राजनीति पर जाति और धर्म के प्रभावों के संबंध में समझ विकसित करना।
- उच्च कक्षाओं में अध्ययन के लिए भारतीय समकालीन मुद्द विषय के लिए विद्यार्थियों में एक समुचित चिंतन विकसित करना।

DSE 2 A – अंतर्राष्ट्रीय संगठन (International Organization)

- इस विषय के अंतर्गत विद्यार्थियों को अंतर्राष्ट्रीय संगठन की प्रकृति और इसके विकास की प्रक्रिया के संबंध में जानकारी प्रदान करना।
- संयुक्त राष्ट्र संघ और इससे संबंधित अन्य अंतर्राष्ट्रीय संगठनों का राजनीतिक व्यवस्था पर पड़ने वाले प्रभावों के संबंध में जानकारी प्रदान करना।
- अंतर्राष्ट्रीय शांति स्थापित करने की प्रक्रिया में संयुक्त राष्ट्र की भूमिका को समझ विकसित करना।
- यूरोपियन यूनियन, सार्क जैस क्षेत्रीय संगठनों और अंतर्राष्ट्रीय राजनीति पर इसके प्रभाव के संबंध में जानकारी प्रदान करना
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों का तयार करना।

DSE 2 B – भारत में लोकतंत्र (Democracy in India)

- भारत एक लोकतांत्रिक देश है और लोकतांत्रिक प्रक्रिया के विकास क संबंध मं जानकारी उपलब्ध कराना।
- भारतीय लोकतंत्र की प्रकृति, दलीय व्यवस्था, हित समूह, संसदीय एवं अध्यक्षीय लोकतांत्रिक व्यवस्था के संबंध में विद्यार्थियों को समझ विकसित करना।
- भारतीय राजनीतिक व्यवस्था में महिलाओं की भूमिका के संबंध में जानकारी प्रदान करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों का तयार करना।

षष्ठम समसत्र (Semester 6)

Core 13 – समकालीन राजनीतिक सिद्धांत (Contemporary Political Theory)

- राजनीतिक सिद्धांत के क्षेत्र में विद्यार्थियों को उच्च स्तरीय ज्ञान प्रदान करना।
- नवीन प्रवृत्तियों के सहित व्यवहारवाद, उत्तर व्यवहारवाद, राजनीतिक सिद्धांत के पतन और पुर्नउत्थान, नागरिकता के सिद्धांत, लोकतंत्र के सिद्धांत के संबंध में उच्च स्तरीय समझ विकसित करना।
- वर्तमान की नवीन प्रवृत्तियों से अवगत कराना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों क चिंतन स्तर को विकसित करना।

Core 14 – तुलनात्मक राजनीतिक विश्लेषण (Comparative Political Analysis)

- तुलनात्मक शासन एवं सरकार के अध्ययन के लिए विद्यार्थियों का आधार प्रदान करना।
- विद्यार्थियों को संविधान और संविधानवाद, संघात्मक और एकात्मक शासन व्यवस्था, के संबंध में उच्च स्तरीय ज्ञान विकसित करना।
- ब्रिटेन, अमेरिका, फ्रांस, स्वीटजरलैण्ड और चीन की दलीय व्यवस्था, दबाव समूह, जनमत आदि के संबंध में तुलनात्मक समझ विकसित करना।
- विश्व के विभिन्न देशों में विभिन्न प्रकार को शासन व्यवस्था के संबंध में उच्च स्तरीय ज्ञान विकसित करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों के चिंतन स्तर को विकसित करना।

DSE 3 A – भारत की विदेश नीति (India's Foreign Policy)

- भारतीय विदेश नीति के प्रमुख दृष्टिकोण, लक्ष्य और सिद्धांतों के संबंध में विद्यार्थियों को उच्च स्तरीय समझ विकसित करना।
- भारतीय विदेश नीति के निर्धारक तत्वों के संबंध में जानकारी प्रदान करना।
- भारत के पड़ोसी देशों चीन, पाकिस्तान, नेपाल और श्रीलंका के संदर्भ में विदेश नीति का उच्च स्तरीय समझ विकसित करना।
- अमेरिका और रूस के संदर्भ में भारतीय विदेश नीति को जानकारी प्रदान करना।
- उच्च शिक्षण के लिए विद्यार्थियों के चिंतन स्तर को विकसित करना।

DSE 3 B – भारत में दलीय व्यवस्था (Party System in India)

- भारत की दलीय व्यवस्था के संबंध में विद्यार्थियों को उच्च स्तरीय समझ विकसित करना।
- भारतीय राष्ट्रीय कांग्रेस को स्थापना का ऐतिहासिक विवरण की जानकारी प्रदान करना।
- स्वतंत्रता प्राप्ति के पश्चात् भारत की दलीय व्यवस्था का ज्ञान प्रदान करना।
- राष्ट्रीय और राज्य स्तरीय दलों के संबंध में उच्च स्तरीय ज्ञान प्रदान करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों के चिंतन स्तर को विकसित करना।

DSE 4 A – प्रमुख शक्तियों की विदेश नीति (Foreign Policy of Major Powers)

- विदेश नीति और प्रमुख महाशक्तियों संबंधी अवधारणा एवं निर्धारक तत्वों के संबंध में उच्च स्तरीय समझ विकसित करना।

- शीतयुद्धोत्तर काल में अमेरिका, फ्रांस, रूस और चीन की विदेश नीति के प्रमुख मुद्दों के संबंध में समझ विकसित करना।
- विद्यार्थियों में अध्ययन कौशल को अंतर्राष्ट्रीय स्तर पर व्यापक करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों के चिंतन स्तर को विकसित करना।

DSE 4 B – भारत में संघवाद (Federalism in India)

- भारतीय संघात्मक व्यवस्था को प्रकृति और विकास के संबंध में जानकारी प्रदान करना।
- आपातकालीन और वित्तीय शक्तियों के संदर्भ में केन्द्र-राज्य संबंधों का समझ विकसित करना।
- राज्यों की स्वायत्तता, सरकारिया आयोग की शिफारिशें, अंतर्राज्यीय परिषद् और क्षेत्रीय दलों के भारतीय संघात्मक व्यवस्था के संदर्भ में उच्च स्तरीय चिंतन कौशल का विकास करना।
- प्रतियोगिता परीक्षाओं एवं उच्च शिक्षण के लिए विद्यार्थियों के चिंतन स्तर को विकसित करना।

राजनीति विज्ञान विषय के विद्यार्थियों के लिए कैरियर के विभिन्न क्षेत्र

राजनीति विज्ञान के विद्यार्थी निम्न क्षेत्रों में अपने कैरियर का निर्माण कर सकते हैं –

1. **सिविल सेवा** : राजनीति विज्ञान के छात्र केन्द्र एवं राज्य सिविल सेवा की परीक्षाओं में शामिल होकर एक बेहतर कैरियर का निर्माण कर सकते हैं। केन्द्र एवं राज्य सिविल सेवा की परीक्षाओं में राजनीति विज्ञान, लोक प्रशासन, अंतर्राष्ट्रीय राजनीति एवं लॉ के विकल्प काफी लोकप्रिय हैं।
2. **लॉ** : राजनीति विज्ञान में स्नातक करने के पश्चात् आप भारतीय न्यायपालिका के क्षेत्र में भी अपना एक बेहतर कैरियर का निर्माण कर सकते हैं। लॉ के लिए राजनीति विज्ञान का स्नातक अच्छा माना जाता है।
3. **शैक्षणिक क्षेत्र में** : राजनीति विज्ञान में स्नातक करने के पश्चात् यदि आप बी०एड० कर लेते हैं तो सरकारी एवं निजी विद्यालयों में अपने विषय के शिक्षक बन सकते हैं। साथ ही यदि आप इस विषय में एम०ए० के साथ नेट की परीक्षा पास करते हैं अथवा पी-एच० डी० कर लेते हैं तो आप महाविद्यालय एवं विश्वविद्यालयों में व्याख्याता, प्रोफेसर भी बन सकते हैं।

4. **पत्रकारिता के क्षेत्र में** : राजनीति विज्ञान विषय में स्नातक के पश्चात् यदि आप मास कम्यूनिकेशन अथवा जर्नलिज्म का कोर्स कर लेते हैं तो आप प्रिंट एवं इलेक्ट्रॉनिक मीडिया के क्षेत्र में एक उमदा कैरियर का निर्माण कर सकते हैं।
5. **समाज सेवा के क्षेत्र में** : राजनीति विज्ञान एक ऐसा विषय है जो अपने विद्यार्थियों को समाज सेवा के लिए प्रेरित करता है। इसके माध्यम से जन प्रतिनिधि बन कर सच्चे और मजबूत लोकतंत्र के निर्माण में महत्वपूर्ण भूमिका निभा सकता है।
6. **राजनीतिक विश्लेषक** : राजनीति विज्ञान में स्नातकोत्तर की प्राप्त कर लेने के पश्चात् आप एक राजनीतिक विश्लेषक बन सकते हैं। अधिक परिश्रम के पश्चात् विद्यार्थी चुनाव विश्लेषक भी बन सकता है। इस क्षेत्र में कई राजनीतिक अनुसंधान एवं विश्लेषण संस्थानों में प्रतिष्ठित पदों पर कार्य करने का अवसर मिल सकता है।
7. **राजनीतिक सलाहकार** : राजनीति विज्ञान के विद्यार्थी राजनीतिक दलों एवं उनके उम्मीदवारों को चुनावी रणनीति तैयार करने, अपने पक्ष में जनमत का निर्माण करने, चुनाव जीतने आदि के लिए सलाहकार की के क्षेत्र में महत्वपूर्ण भूमिका निभाते हैं।
8. **अन्य क्षेत्रों में** : राजनीति विज्ञान से स्नातक करने के पश्चात् आप बैंक, विदेश सेवा, मानवधिकार, राजनयिक आदि के क्षेत्र में भी बेहतर कैरियर का निर्माण कर सकते हैं।

राजनीति विज्ञान अन्य सामाजिक विज्ञानों की तुलना में एक बहुपयोगी, बेहतर कैरियर निर्माण की दिशा में अग्रणी भूमिका निभाने वाला विषय है। यदि हम तुलनात्मक रूप से केन्द्र एवं राज्य सिविल सेवाओं की परीक्षा में सफल होने वाले अभ्यर्थियों का प्रतिशत देखें तो राजनीति विज्ञान विषय सबसे अधिक प्रभावी रहा है विशेषकर लोक प्रशासन, अंतर्राष्ट्रीय राजनीति जैसे विषय।

DEPARTMENT OF POLITICAL SCIENCE

K.B.WOMEN'S COLLEGE, HAZARIBAG

PROGRAMME SPECIFIC OUTCOMES(B.A)

1. यह विषय अपने विद्यार्थियों को एक आदर्श एवं जिम्मेदार नागरिक बनने की प्रेरणा देता है, सामाजिक एवं राजनीतिक पहलुओं संबंधी ज्ञान प्राप्त करने की क्षमता विकसित करता है।
2. भारत का संविधान, संवैधानिक संरचना, संस्थाओं, समानता, सामाजिक न्याय, और संवैधानिक प्रक्रिया आदि को समझने की क्षमता विकसित करता है।
3. प्राचीन, मध्यकालीन एवं समकालीन भारतीय तथा पाश्चात्य राजनीतिक विचारकों विचार एवं दर्शन को समझने की योग्यता विकसित करता है।
4. राष्ट्रीय-अंतर्राष्ट्रीय राजनीतिक घटनाचक्र का अध्ययन करने एवं उनके अनुरूप आलोचनात्मक मूल्यांकन की चेतना विकसित करता है।
5. विद्यार्थी अंतर्राष्ट्रीय कानून, अंतर्राष्ट्रीय संगठन, भारतीय एवं महाशक्तियों की विदेश नीति को समझने का अवसर प्रदान करता है और उनके चिंतन स्तर को व्यापक करता है।
6. विद्यार्थियों में राजनीतिक व्यवस्थाओं एवं संगठनों के तुलनात्मक अध्ययन की जानकारी प्रदान करता है।
7. विद्यार्थियों को झारखण्ड की राजनीति और स्थानीय राजनीति समझने में सहायता करता है।
8. उच्च कक्षाओं में अध्ययन एवं प्रतियोगिता परीक्षा की तैयारी संबंधी कौशल विकसित करता है।

COURSE SPECIFIC OUTCOMES(B.A)

प्रथम समसत्र (Semester 1)

- राजनीतिक सिद्धांत की प्रकृति, महत्व और उसके अध्ययन की परम्पराओं का परिचय प्रदान करना।
- स्थानीय स्वशासन की उत्पत्ति और विकास की अवधारणा की समझ विकसित करना।

द्वितीय समसत्र (Semester 2)

- संविधान एवं संवैधानिक प्रावधानों- प्रस्तावना, मौलिक अधिकार एवं कर्तव्य, राज्य के नीति निर्देशक तत्व, विधायिका, कार्यपालिका एवं न्यायपालिका के संबंध में समझ विकसित करना।
- भारतीय राजनीतिक विचारकों के दर्शन एवं चिंतन से विद्यार्थियों को अवगत कराना।

तृतीय समसत्र (Semester 3)

- लोक प्रशासन संबंधी विषयों में व्यापक समझ विकसित करता है।
- भारतीय राजनीतिक विचारकों के दर्शन एवं चिंतन से विद्यार्थियों को अवगत कराना।
- झारखण्ड की राजनीति में विभिन्न सामाजिक-आर्थिक कारकों के संबंध में जानकारी प्रदान करना।

चतुर्थ समसत्र (Semester 4)

- विद्यार्थियों को अंतर्राष्ट्रीय राजनीति के संबंध में विस्तृत समझ विकसित करना।

- मैकियावेली, हॉब्स, लॉक, रूसो, बेंथम, मिल के विभिन्न राजनीतिक अवधारणाओं के संबंध में आलोचनात्मक मूल्यांकन की समझ विकसित करना।
- राजनीतिक समाजशास्त्र की प्रकृति और क्षेत्र के संबंध में जानकारी प्रदान करना।

पंचम समसत्र (Semester 5)

- विद्यार्थियों को विचारधारा के अर्थ तथा इसकी विषय वस्तु के संबंध में जानकारी प्रदान करना।
- पांच प्रमुख महाशक्तियों की प्रशासनिक व्यवस्था की संरचना एवं क्रियाकलापों के तुलनात्मक अध्ययन के प्रति जागरूक करना।
- अंतर्राष्ट्रीय कानून के उत्पत्ति और विकास की अवधारणा की समझ विकसित करना।
- अंतर्राष्ट्रीय संगठन की प्रकृति और इसके विकास की प्रक्रिया के संबंध में जानकारी प्रदान करना।
- इस विषय में विद्यार्थियों को राष्ट्रीय एकीकरण के समक्ष आने वाली चुनौतियों और उसके समाधान के संबंध में जानकारी उपलब्ध कराई जाती है।
- भारत एक लोकतांत्रिक देश है इसलिए लोकतांत्रिक प्रक्रिया के विकास के संबंध में जानकारी उपलब्ध कराना।

षष्ठम् समसत्र (Semester 6)

- राजनीतिक सिद्धांत की नवीन प्रवृत्तियों के सहित व्यवहारवाद, उत्तर व्यवहारवाद, राजनीतिक सिद्धांत के पतन और पुर्नउत्थान, नागरिकता के सिद्धांत, लोकतंत्र के सिद्धांत के संबंध में उच्च स्तरीय समझ विकसित करना।
- विश्व के विभिन्न देशों में विभिन्न प्रकार की शासन व्यवस्था के तुलनात्मक अध्ययन संबंध में उच्च स्तरीय ज्ञान विकसित करना।
- भारतीय विदेश नीति के प्रमुख दृष्टिकोण, लक्ष्य और सिद्धांतों के संबंध में विद्यार्थियों को उच्च स्तरीय समझ विकसित करना।
- विदेश नीति और प्रमुख महाशक्तियों संबंधी अवधारणा एवं निर्धारक तत्वों के संबंध में उच्च स्तरीय समझ विकसित करना।
- भारत की दलीय व्यवस्था के संबंध में विद्यार्थियों को उच्च स्तरीय समझ विकसित करना।
- भारतीय संघात्मक व्यवस्था की प्रकृति और विकास के संबंध में जानकारी प्रदान करना।

राजनीति विज्ञान विषय के विद्यार्थियों के लिए कैरियर के विभिन्न क्षेत्र

राजनीति विज्ञान के विद्यार्थी निम्न क्षेत्रों में अपने कैरियर का निर्माण कर सकते हैं –

1. **सिविल सेवा** : राजनीति विज्ञान के छात्र केन्द्र एवं राज्य सिविल सेवा की परीक्षाओं में शामिल होकर एक बेहतर कैरियर का निर्माण कर सकते हैं। केन्द्र एवं राज्य सिविल सेवा की परीक्षाओं में राजनीति विज्ञान, लोक प्रशासन, अंतर्राष्ट्रीय राजनीति एवं लॉ के विकल्प काफी लोकप्रिय हैं।
2. **लॉ** : राजनीति विज्ञान में स्नातक करने के पश्चात् आप भारतीय न्यायपालिका के क्षेत्र में भी अपना एक बेहतर कैरियर का निर्माण कर सकते हैं। लॉ के लिए राजनीति विज्ञान का स्नातक अच्छा माना जाता है।
3. **शैक्षणिक क्षेत्र में** : राजनीति विज्ञान में स्नातक करने के पश्चात् यदि आप बी०एड० कर लेते हैं तो सरकारी एवं निजी विद्यालयों में अपने विषय के शिक्षक बन सकते हैं। साथ ही यदि आप इस विषय में एम०ए० के साथ नेट

की परीक्षा पास करते हैं अथवा पी-एच0 डी0 कर लेते हैं तो आप महाविद्यालय एवं विश्वविद्यालयों में व्याख्याता, प्रोफेसर भी बन सकते हैं।

4. **पत्रकारिता के क्षेत्र में** : राजनीति विज्ञान विषय में स्नातक के पश्चात् यदि आप मास कम्यूनिकेशन अथवा जर्नलिज्म का कोर्स कर लेते हैं तो आप प्रिंट एवं इलेक्ट्रॉनिक मीडिया के क्षेत्र में एक उमदा कैरियर का निर्माण कर सकते हैं।
5. **समाज सेवा के क्षेत्र में** : राजनीति विज्ञान एक ऐसा विषय है जो अपने विद्यार्थियों को समाज सेवा के लिए प्रेरित करता है। इसके माध्यम से जन प्रतिनिधि बन कर सच्चे और मजबूत लोकतंत्र के निर्माण में महत्वपूर्ण भूमिका निभा सकता है।
6. **राजनीतिक विश्लेषक** : राजनीति विज्ञान में स्नातकोत्तर की प्राप्ति कर लेने के पश्चात् आप एक राजनीतिक विश्लेषक बन सकते हैं। अधिक परिश्रम के पश्चात् विद्यार्थी चुनाव विश्लेषक भी बन सकता है। इस क्षेत्र में कई राजनीतिक अनुसंधान एवं विश्लेषण संस्थानों में प्रतिष्ठित पदों पर कार्य करने का अवसर मिल सकता है।
7. **राजनीतिक सलाहकार** : राजनीति विज्ञान के विद्यार्थी राजनीतिक दलों एवं उनके उम्मीदवारों को चुनावी रणनीति तैयार करने, अपने पक्ष में जनमत का निर्माण करने, चुनाव जीतने आदि के लिए सलाहकार की के क्षेत्र में महत्वपूर्ण भूमिका निभाते हैं।
8. **अन्य क्षेत्रों में** : राजनीति विज्ञान से स्नातक करने के पश्चात् आप बैंक, विदेश सेवा, मानवधिकार, राजनयिक आदि के क्षेत्र में भी बेहतर कैरियर का निर्माण कर सकते हैं।

राजनीति विज्ञान अन्य सामाजिक विज्ञानों की तुलना में एक बहुपयोगी, बेहतर कैरियर निर्माण की दिशा में अग्रणी भूमिका निभाने वाला विषय है। यदि हम तुलनात्मक रूप से केन्द्र एवं राज्य सिविल सेवाओं की परीक्षा में सफल होने वाले अभ्यर्थियों का प्रतिशत देखें तो राजनीति विज्ञान विषय सबसे अधिक प्रभावी रहा है विशेषकर लोक प्रशासन, अंतर्राष्ट्रीय राजनीति जैसे विषय।

POST GRADUATE DIPLOMA IN HOSPITAL MANAGEMENT

Program Specific Outcome of PGDHM

- Growth of administrative skills
- Improve communication skills
- Good knowledge of healthcare industry

Core Specific Outcome Sem I

Paper (101): Principals and practices of management & organizational Behaviour

- Development of managerial skills like planning, organizing, directing, controlling & co. Ordination.
- Importance of teamwork, meaning and understanding of personality and attitudes & need of decision making.

Paper (102): Managerial Accounting & Financial Management.

- Meaning & Importance of Accounting.
- Understanding of principle rules & advantages of accounting.
- Knowledge of basic accounting like Journal, Ledger & Trail balance.
- Preparation of Final Account.

Paper (103): Hospital Planning and Project Management

- Improving Patient care.
- It is important to design the treatment rooms in such a way that it look spacious and could store all the instruments required for treatment.
A hospital should always look organized.
- Understand different requirements while planning, different departments like OPD, Emergency & Accident, and indoor accommodation & ward design.

Paper (104): Medical Terminology & Procedures

- Basic knowledge of human anatomy & physiology.
- Know about common disease related to gastro Intestinal, Respiratory, circulatory, renal, reproductive (male & female), Nervous, endocrine & blood group and ophthalmic diseases etc.

Paper (105): Hospital Administration

- Detailed study of hospital & different departments of the hospital.
- Briefly understanding role responsibilities of hospital administrator and marketing of the hospital.
- Understanding of hospital waste management & methods of infection control.

Paper (106): Job training

- 15 day training related all the main departments of hospital along with its location, space, requirements, equipment, need, manpower, functions etc.

Sem-II

Paper (201): Human resource management

- Understand what are HRM and its effective management of people in an organisation.
- Bridge the gap between employee's performance and the organisations strategic objective. Also need and process of selection and recruitment, promotion and transfer.
- Development of employees through training, higher courses, specialized training and discipline.

Paper (202): Law related to hospital medical services

- Understand basic terms related to law
- Help to ensure that health medical care accountable to the public.
- Ethical standards in medical care promote other important moral and social values such as social responsibility, human rights, patient's welfare, compliance with the law, like laws related to medical procedures, laws applicable to a hospital, medical negligence & compensation & all important law.

Paper (203): Material management and Inventory management

- A major part of materials management is ensuring material going into production is correct and of high value. This helps to keep production running smoothly and improves overall finished good quality.
- Every organisation uses a no. Of materials. It is necessary that these materials are properly purchased, stored and user by using technique of purchase management & procedure, store management and inventory control.

Paper (204): Management of healthcare and hospital services

- Managers can greatly impact a health care facility by delivering reliable services.
- They must be able to understand as well as co. Ordinate and direct the various departments. Doctors, insurance companies and even technology distributions all have a vested interest in hospital operations.
- Also understand health care delivery system, national health policy and national health programmer. Maintenance of quality management in health care and working of insurance companies and TPA'S in health care sector.

Paper (206): Computer fundamental & software related to hospital

- Basic knowledge of computer.
- Definition of computer & working on office automation software like Ms-Word, MS – EXCEL, Ms-Access, Data base management software, Ms PowerPoint & other application.
- Introduction to the software related to the hospital management like payroll system, Accounting system, inventory control system & other computer application in hospital.

Bachelor of Medical Laboratory Technology (BMLT)

PROGRAM OUTCOMES – BMLT is a career oriented course.

- Professionals are involved in the practical & technical work for proper diagnosis & effective functioning of biochemical laboratories.
- Scope in private & government hospitals, nursing homes, blood banks, pathology laboratories etc.
- A BMLT graduate can find jobs in various research sectors such as pharmacy & other R & D sectors.
- Job opportunities after the BMLT graduation course are lab technician- pathology, R & D lab assistant Junior technical executive, lab medicine technician, X-ray technician, blood bank technician, biochemistry technician, microbiology technician, chief medical health officer, cardiac technician, phlebotomist etc.

CORE SPECIFIC OUTCOME:-

BMLT 101- General Human Anatomy & Physiology-I

- Understand structure and function of human body.
- Mist logical studies related to health sciences
- Anatomy studies microscopic structures of the body organs & organ systems.
- Human physiology focuses on function or how structure of organs at different levels work.

BMLT 102- Routine & Special Laboratory Technique-I

- Acquaint with basic knowledge of laboratory equipments, its uses maintenance & care.
- Build a solid foundation of lab skills for special investigation during routine tests.
- Know about the human healthcare & safety regulation in laboratory.

BMLT 103- Bio molecules

- Understand structure, function & classification of all the nutrients & nucleic acid of human body.
- Learn about the building blocks of life & perform important function in living organisms.
- Acquaint with energy storage catalyzing the biochemical reactions and also the related disorders & deficiencies.

BMLT 104- Fundamentals of Microbiology

- Understand basic structure & morphology of microorganisms.
- Get to know about morphology of fungi & viruses.
- Acquaint with different viral diseases for diagnosis purposes.
- Know about recombinant DNA technology; generate engineering & gene cloning in micro organisms.

BMLT 105- Communication skills

- Develop Communication Skills which is the key for any business to succeed as no project can survive without effective communication.

- Helps to build a team, increases customer satisfaction & improves productivity.
- Learn basic business correspondence & writing skills.

BMLT 201- General Human Anatomy & Physiology-II

- Understand the human anatomy & physiology of vital organs.
- Benefit for understanding fundamental of any career as health professional & also benefit for their health.
- Know about cell, tissues, glands, brain, heart etc.

BMLT 202- Routine & Special Laboratory Technology-II

- Study various laboratory investigations of urine, blood, semen, sputum.
- Introduction to serology
- Learn about different staining techniques for bacteria.

BMLT 203- Basic of Computer Science

- Study basic knowledge about parts of computer & different operating systems
- Learn about Microsoft word, PPT, internet, E-mail etc.
- Get introduced to the hospital information system.

BMLT 204- Microbial Physiology- Metabolism

- Get expertise in microbial nutrition, cultivation & microbial metabolism
- Study microbial cell structures, growth & measurement
- Get information on sources of energy as ATP & its utilization by micro organisms.
- Know about enzymes, their nomenclature & mechanism of action.

BMLT 301- Haematology & Blood Banking –I

- Develop skills in haematological tests & lab finding to gain knowledge of blood banking regarding blood transfusion
- Know the method of objection of ABO blood group system which is used to denote the presence or absence of antigen on RBC.
- Laboratory diagnosis of bleeding.

BMLT 302- Micro biology and serology

- Assist in the diagnosis of infectious disease.
- Detect antigens associated with a pathogen in a person's sample
- Check by microscopic examination of sample to determine whether or not the infection is due to fungus.
- Perform fungus culture test to diagnose fungal infection.

BMLT 303- Clinical Pathology & Biochemistry

- Investigate body fluids such as blood, urine & CSF
- Analyse the changes in body's chemistry to diagnose diseases.
- It helps to generate the information about a series of chemical reactions that occur within cells of living organism to sustain life.

BMLT 304- Pathogenic Microbiology

- Analyse the study on the microorganism pathogen.
- Understand how the pathogenic bacteria act in the different environment.
- Study of antimicrobial drugs that suppress the growth or destroy micro organisms.

BMLT 401- clinical biochemistry and microbiology-I

- Perform diagnostic analysis of body fluids & about microorganisms.
- Learn the clinical endocrinology, its role & related diseases or abnormalities to patient care.
- Learn specimen processing for biochemical analysis.

BMLT 402- Histology- cytology- I

- Know tissue processing which are derived from various organs of human body.
- Prepare tissue for diagnosis using histological techniques.

BMLT 403- Parasitology and blood cell disorders-I

- Know about parasite, their hosts & the relationship between them.
- Acquaint with parasites which infect humans, diseases caused by them, clinical picture & response produced by human against them.
- Understand blood cell disorders.

BMLT 404- Job training & project report

- Learn new techniques, new skill & approaches and prepare a project report.
- Get practical knowledge and experiences.

BMLT 501- Medical genetics and microbiology-II

- Know application of genetics to medical care, research on the causes of genetic disorders & theirs diagnosis.
- Understand immune system & study of viruses.

BMLT 502- Histology- cytology-II

- Describe RBC abnormalities.
- Prepare specimens for cytological investigations
- Learn staining techniques.
- Understand characteristics of benign & malignant cell for diagnosis purposes.

BMLT 503- Parasitology & blood cell

- Study disorders related to RBC & WBC.
- Tell effects of parasites to the living organisms.
- Diagnose various abnormalities related to blood cells.
- Learn counting of blood cells.

BMLT 504- Pathogenic microbiology

- Understand the habitat of most pathogenic microbes, its diagnosis, prevention & control.

- Know about the human mitotic infection, parasitic infections, diagnosis & prevention.
- Understand viral diseases.

BMLT 601-clinical laboratory operations & management

- Learn management skills & optimize management style for each lab member.
- Plan the entire laboratory operations well and monitor the operation.
- Knowledge of documentations required for the laboratory of the time need.

BMLT 602- Professional training

- Become expert in handling complex & heavy machinery.
- Learn new technology, computer competency, comfortable with using digested equipment.

BMLT 603- Biomedical imaging devices and concept

- Know about the principle & clinical application of heavy machineries. Like X-ray, ultrasound, CT machine, MRI, endoscopy.
- Know how X-ray image which help physicians diagnose & then treat the illness or injuries the patient.
- Know how Images of internal organs of patient help in the diagnosis of medical issues & help in treating them with great accuracy.
- Can expertise in handling.