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PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE
OUTCOME (CO) for UG and PG Courses.

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FACULTY OF ARTS

B.A. (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 1

English: - Through this course content Students will improve their speaking ability in English both in terms of fluency and Comprehensibility. The course content assists a student to become a more competent, efficient, and perceptive academic reader who is able to communicate to others through writing and speaking the contents and main ideas of what is read and understood from a critical perspective.

Hindi: -

खंड (क): - मध्यकालीन काव्य कुंज में कबीर आदि सात कवियों ने भक्ति के माध्यम से छात्रों को सामाजिक संस्कारों के प्रति गहरी प्रतिबद्धता को बताया है। भक्ति की व्यापकता और प्रतिष्ठा के साथ जीवन की समस्याओं का हल भी मध्यकालीन काव्य कुंज में विद्यार्थियों को स्पष्ट रूप से लाभान्वित करता है।

खंड (ख): - हिंदी साहित्य के आदिकाल में इतिहास संबंधी जानकारी और वीर रस की रचनाओं की अहमियत विद्यार्थियों को उत्साह प्रदान करती है और हिंदी भाषा के शैशवरुचि का ज्ञान भी देती है।

खंड (ग): - भारतीय काव्यशास्त्र में विद्यार्थियों को गद्य पद्य, नाटक आदि का ज्ञान एवं काव्य के व्यापक अर्थ और रागात्मक भावनाओं का परिचय लेकर विद्यार्थी वशिष्ठ

रूप से लाभान्वित होते हैं। रस छंद, अलंकार काव्य के सौंदर्य को किस प्रकार बढ़ाते हैं इसका ज्ञान भी विद्यार्थियों के लिए विशेष रूप से लाभदायक है।

Political Science: - Understand the making of Indian constitution along with the debate of constituent assembly, Comprehend the functioning of legislature, Executive & judiciary.

History: - The study of ancient Indian History is important to those who want to understand the true nature of the past. Students of History can achieve knowledge regarding pre and proto History of our country. They learn about sources of History, primitive Civilization like Harappa and Vedic Age emergence and growth of earlier dynasties like Maury and Gupta.

Health & Physical Education: - Understanding concepts of Physical Education, Health & Hygiene, Basic concepts of yoga and basics of Human Anatomy and Physiology. The concept of Physical Education is generally understood as organization of some games, sports or physical education activities in schools. There are schools where specific periods are allocated for this subject in the time table. It has been noticed that during such periods, most of the students are either left on their own to play the games in a way they like or they are taken to the field where they engage themselves in different sports without the guidance.

Economics: - The course offered and taught at B.A. Part 1 is concerned with the basic and popular branch of Economics known as Micro Economics or Price Theory. The students in the beginning know about the various definitions of the subject. They learn about how Economics being a social science is different from other Physical Sciences. What is the nature and scope of the Economics? The students get an idea of different economic systems like capitalism, socialism and mixed economy. Their knowledge about the fundamental problems of an economy is enhanced. They study two important approaches related with maximization of utility or consumer's satisfaction. The Approaches are known as Cardinal Utility Analysis and

Ordinal Utility analysis. The students get sufficient knowledge about the laws and concepts related with the theories of production, cost, consumer's behaviour etc. The students in semester 2 study Theory of Factor Pricing or Theory of Distribution. They learn popular doctrines about rent, interest, profit and wages. They are imparted knowledge about price and output determination under different market structures like Monopoly, Monopolistic Competition, and Oligopoly etc.

Punjabi: - Students who have opted for Punjabi as an elective subject in B.A. Semester 1 will be able to analyze and interpret literary texts. Reading Literature and literary works would inculcate a sense of creative imagination among students. It would also assist the students to gain a grasp of idioms and phrases used in routine to get a hold of the fundamental of Punjabi Language. Practicing error correction would result in the development of extensive vocabulary. Reading long texts such as novels highlighting social and moral values evokes students in a solemn manner. Practicing formal letter writing with an organized plan can evidently improve writing skills.

Mathematics: -

Algebra: - Understanding the concepts of Matrix, Rank of a Matrix, Different types of Matrices, Characteristics of a Matrix and application of matrices to a system of linear equations. Learn about bilinear and Quadratic forms, Relation between the roots and coefficients of an equation, Transformation of an equation and Descartes' rule of signs.

Calculus: - Understanding the concepts of limits, continuity derivability, successive differentiations, expansions, asymptotes, curative and singular points. Know about curve tracing, Rectification, quadrature, area under curve, Volume and surfaces of solids of revolution and reduction formulae.

Solid Geometry: - Understanding the concepts of Conics, System of Conics, Confocal Conics, How to trace Conics and polar equations of conic. Learn

about properties of sphere, cone, cylinder, conicoid, generating lines and confocal conicoid. Know about how to reduce the second degree equations.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

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SEMESTER - 2

English: - The course seeks to develop the students' abilities in grammar, oral skills, reading, writing and study skills. Students will heighten their awareness of correct usage of English in writing and speaking. Students will develop skills that enable them to communicate effectively in writing. They will learn to present ideas clearly and logically to achieve a specific purpose and to be appropriate for an intended audience.

Hindi: -

खंड (क): - महाकवि जयशंकर प्रसाद द्वारा रचित ध्रुवस्वामिनी नाटक में इतिहास और कल्पना का सम्मिश्रण विद्यार्थियों को रोचकता प्रदान करता है एवं जीवन के संघर्ष विसंगतियों और विकृतियों से निपटने की राह भी दिखाता है।

खंड (ख): - हिंदी साहित्य का भक्ति काल पढ़कर मध्य कालीन कवियों के जीवन की व्यापकता की जानकारी विद्यार्थियों को लाभवन्तिकरती है एवं जीवन की पवित्रता, शोभयता, सरलता, सादगी को भी सिखाता है।

खंड (ग): - भाषा के विविध रूप में राज्य भाषा, राष्ट्रीय भाषा आदि को पढ़कर भी विद्यार्थी विशेष रूप से लाभान्वित होते हैं।

Political Science: -

- Political Science is the study of the political world in a comparative sense, including the behavior, organizations, institutions and philosophical foundations of political life from the level of individuals to the international setting in both contemporary and historical contexts. The programme makes students understand and analyze the operation of power politics at state, national, regional and global levels.
- The students shall acquire the capacity to observe the politics through various perspectives. The programme gives to the student's career options in higher studies in field related to public policy, international politics, gender studies, development studies and law.
- The programme prepares the students the undertake research projects.
- Formulate socially relevant research proposals and presentations.
- The programme opens opportunities to undergo various competitive exams of administrative service law and public policy.

Develop a deeper understanding of centre – State relations. Understand the working of election commission, electoral process and voting – behavior. Analyze the role of Caste, Religion and Region in Indian Politics and understanding of the Party Systems and Pressure Groups in India.

History: - History students will acquire knowledge about historiography of ancient India. The Socio, political, economics, religious and cultural features of early medieval India are vividly depicted in this paper. The history of Delhi Sultanate is thoroughly described in this portion. Students can gather knowledge sultanate administration, Socio-Cultural Political situation of Delhi under Sultanate.

Punjabi: - Students will be analyze and interpret literary texts in forms of Modern Poetry and extensive writings such as Dramas/Plays. The detailed focus on grammar in this semester would serve as a strong base for command

over the language. Conversion of English terminologies into Punjabi would serve as a medium for translation in daily routine, connecting younger generations to older people. Informal letters play a vital role in daily communication and practicing this format would guide students to express an emotional undertone in the form of writing. Students would gain analytical skills by understanding various values and ideas through writings and drawing conclusions regarding their impact on the society.

- Kav Naad (Modern Poetry – 8 Poets)
- Pavitar Papi (Nover Written by Nanak Singh), Muhavere, Shud-Ashudh words, Letter Official terminology.
- Letter, Sentences, Literary terminology.
- Student will be able to analyze and interpret literary texts in forms of Modern Poetry and extensive writings such as Dramas/Plays. The detailed focus on grammar in this semester would serve as a strong base for command over the language. Conversion of English terminology into Punjabi would serve as a medium for translation in daily routine, connecting younger generations to older people. Informal letter plays a vital role in daily communication and practicing this format would guide students to express an emotional undertone in the form of writing. Students would again analytical skills by understanding various values and ideas through writings and drawing conclusions regarding their impact on the society.

Health & Physical Education: - Understanding concepts of Health Education, Historical prospector physical education, basics of physical fitness and more.

- Regular physical activity promotes growth and development and has multiple benefits for physical, mental and psychosocial health that undoubtedly contribute to learning.
- Physical activity can improve mental health by decreasing and preventing conditions such as anxiety and depression, as well as improving mood and other aspects of well being.

- Sedentary behaviors such as sitting and television viewing contribute to health risk both because of an independently of their impact on physical activity.

Mathematics: -

Number Theory and Trigonometry: - Learn about divisibility, Euclid Method, Congruence's, Fermat's Wilson's and Chinese remainder Theorem. Know about Euler's Function, Residue Systems, and Quadratic Residues. Understanding concepts of De Moiré's Theorem and its applications, Functions of complex variable, Hyperbolic Functions and summation of series.

Ordinary Differential Equation: - Understanding concepts of degree and order of a differential equation, Non – Homogenous Linear Differential Equation with variable and constant coefficient's exact differential equations and orthogonal trajectories. Different methods of solving non-homogenous differential equations, Total Differential equations and simultaneous differential equations.

Vector Calculus: - Understanding concepts of vector, scalar and vector products, differentiation of vectors, Gradient, divergence and URL. Learn about vector integration, Green's Guass's and stokes theorem

Economics: - The course offered and taught at B.A. Part 1 is concerned with the basic and popular branch of Economics known as Micro Economics or Price Theory. The students in the beginning know about the various definitions of the subject. They learn about how Economics being a social science is different from other Physical Sciences. What is the nature and scope of the Economics? The students get an idea of different economic systems like capitalism, socialism and mixed economy. Their knowledge about the fundamental problems of an economy is enhanced. They study two important approaches related with maximization of utility or consumer's satisfaction. The Approaches are known as Cardinal Utility Analysis and Ordinal Utility analysis. The students get sufficient knowledge about the laws

and concepts related with the theories of production, cost, consumer's behaviour etc. The students in semester 2 study Theory of Factor Pricing or Theory of Distribution. They learn popular doctrines about rent, interest, profit and wages. They are imparted knowledge about price and output determination under different market structures like Monopoly, Monopolistic Competition, and Oligopoly etc.

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SEMESTER - 3

English: -

The course content will help the students develop their abilities as a critical reader and writer of English poetry. Students will paraphrase information from outside sources effectively and accurately. Students will summarize information from academic sources, distinguishing between main ideas and details. Students will strengthen their ability to write and understand using the process approach.

HINDI: -

खंड (क): - आधुनिक हिंदी कविता में संकलित सात कवि हिंदी काव्य धारा के शीर्ष कवियों की कविताओं में भारत की सामाजिक - सांस्कृतिक पृष्ठभूमि तथा विद्यार्थी में साहित्य संस्कार देकर देश के अच्छी नागरिक बनाने में योगदान देंगे तथा विद्यार्थियों के चेतना निर्माण एवं परिष्कृत करने में लाभदायक सिद्ध होगी।

खंड (ख): - हिंदी साहित्य का रीति काल में श्रृंगार के साथ भक्ति भावना का प्रवाह, संगीत और काव्य कला, हास्य और व्यंग तथा रीति काव्य की गहनता विद्यार्थियों को मुगलकालीन संस्कृति और सभ्यता से परिचित करवाकर विद्यार्थियों के ज्ञान में वृद्धि करने में सहायक सिद्ध होगी।

खंड (ग): - प्रयोजनमूलक हिंदी के द्वारा हिंदी भाषा के विविध रूप विद्यार्थियों को सभी सरकारी, गैर सरकारी, कार्यालय प्रविधि, दूरसंचार, जनसंचार के माध्यम, विविध साहित्य, बैंक, कंपनियों, पत्रकारिता आदि प्रयुक्त होने वाली शब्दावली से विद्यार्थियों को परिचित करवाती है जो विद्यार्थियों के लिए लाभदायक है।

Political Science: - Political Science is the study of the political world in a comparative sense, including the behavior, organizations, institutions and philosophical foundations of political life from the level of individuals to the international setting in both contemporary and historical contexts. The programme makes students understand and analyze the operation of power politics at state, national, regional and global levels.

- The students shall acquire the capacity to observe the politics through various perspectives. The programme gives to the student's career options in higher studies in field related to public policy, international politics, gender studies, development studies and law.
- The programme prepares the students the undertake research projects.
- Formulate socially relevant research proposals and presentations.
- The programme opens opportunities to undergo various competitive exams of administrative service law and public policy.
- Develop a comparative understanding of various Indian social reformers. Analyze the social and political thought of Raja Mohan Roy, Swami Vivekananda and Swami Dayananda.
- Comprehend the evolution of Economics Theory of Naroji. Develop a capacity to analyze the political ideas of Gokhle, Tilak, Lalalajpat Roy and Arbindo Ghosh.
- Develop a comparative understanding of various western social reformers. Analyze the social and Political thoughts of Plato, Aristotle, St. Augus Machiavelli, Thomas Hobbes, Johnlocke, J.J. Rousseau, Jermy Bentham and J.S. Mill.

- History: - The Maghal is a topic of Controversy and attraction for their purse proud to history lovers. Students will learn from this paper how did Mughal polity, economy, trade, Commerce, Society, Culture become so famous in Medieval period. They also learn the history of Mughals and Expansion of British Rule in India. Indian Awakening cultural changes and socio-religious reforms movement revolt of 1857 are described in this paper.

Punjabi: - Students who have opted for Punjabi as an elective subject in B.A. Year II will be able to analyze and interpret literary texts in forms of Medieval Poetry. The course also consists of extensive writings such as stories that focus on social evils. Analyzing such texts would make them students ponder and criticize.

Reading an overview about the historical background of Punjabi Literature would help me students understand the influence of society in framing the fundamental of the Language. This would inculcate a sense of identity among the students as they would feel more inclined towards contributing for the enriching presence of Punjabi in this modern era. “Substituting one word in place of a sentence” is another step forward regarding making the student familiar with the advanced vocabulary? Grammar practice on such topics would sharpen their skills. Essay writing would enhance writing skills of students as it involves researching, outlining, editing and revising.

- Kav Tarangan (Poetry Medienal)
- Katha Yatra (Stories Book)
- Chhand, Alaykaar, One Word, Shabad Jodhe Literary Terminology.

Health & Physical Education: -

- Understanding concepts of safety education, common disease, concept of balance, diet, anatomy and physiology of body system.

- Climate of social cohesion and peace as well as of equity protecting human rights and freedoms at the family, local, national or international level.
- The prevention and control of injuries and other consequences or harm caused by accidents.
- The respect of the values and the physical, material and psychological integrity of individuals.

Mathematics: -

Advanced Calculus: - Understanding concepts of continuous functions derivations, mean value theorems, inert medicate forms, Limit, Continuity and differentiability of functions of two variables, maximum and minimum of a function of two variable and partial differentiation. Learn about curves in space, evolutes and involutes and concepts of a surface and envelops.

Partial Differential Equation: - Learn about linear and non-linear first order PDE, PDE's with variable and coefficients, Canonical Forms, Monge's method for second order, Cauchy's Problem. Learn about wave, heat and Laplace equations in 1-D & 2-D.

Statics: - Know about parallel forces, moments, Couples, Equilibrium of coplanar forces, Friction, Centre of Gravity. Understanding concepts of virtual work, forces in 3-d, wrenches, Null Lines and Planes, Stable, Unstable and Neutral Equilibrium.

Economics: - The course offered in semester 3 is related with another important branch of Economics popularly known as Macro economics or Theory of Income and Employment. The students are taught a critical analysis of classical Theory of Income and employment. A detailed explanation of Keynesian Economics is also there. This economics emerged as a criticism of Classical Economics after the Great Depression of the World in 1929. The various dimensions of Macro Economics like trade cycles, Investment, Banking, economic development, inflation, money etc. are also covered. The

study of this branch of economics is significant for students in the sense that they not only get theoretical knowledge of different concepts but know their practical utility also from policy implications point of view. No one can deny the role and relevance of Monetary Policy, Fiscal Policy, Taxation Policy, Foreign Trade policy etc. where the aggregates and averages are utilized and analyzed.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

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SEMESTER - 4

Punjabi: - Students who have opted for Punjabi as an elective subject in B.A. Year II will be able to analyze and interpret literary texts in forms of Medieval Poetry. The course also consists of extensive writings such as stories that focus on social evils. Analyzing such texts would make them students ponder and criticize.

Reading an overview about the historical background of Punjabi Literature would help me students understand the influence of society in framing the fundamental of the Language. This would inculcate a sense of identity among the students as they would feel more inclined towards contributing for the enriching presence of Punjabi in this modern era. “Substituting one word in place of a sentence” is another step forward regarding making the student familiar with the advanced vocabulary? Grammar practice on such topics would sharpen their skills. Essay writing would enhance writing skills of students as it involves researching, outlining, editing and revising.

- Kav Tarangan (Poetry Medienal)
- Katha Yatra (Stories Book)
- Chhand, Alaykaar, One Word, Shabad Jodhe Literary Terminology.

Health & Physical Education: -

- Learn about warming up and cooling down, psychological aspects of physical education major sports events & more about anatomy and physiology of human body system.

- It is a primarily preparatory activity in which through physiological and psychological preparation, a sports man adjust himself for the full fill men to main activity. It is very essential to warm up the body before start any type of activity. Warming up is necessary for every performer who performed the performance on the stage, play ground etc. It prepares the muscles for strenuous activity or actions.

Political Science: - The course analyzes the Gandhian Movements and Ambedkar's view on social justice and the depressed classes. These courses give a transparent idea to the students about Radical Humanism of M.N. Roy. Analyses the socialistic views of Rammanohar Lohia and views on total revolution of JP Narayan. The course describes the different views of Nehru, Subhas Chandra Bose and Bhagat Singh. The course analyses the western thinker's views on social justice and they have not class struggle between capital class and Labour class. Analyze the views of different western thinkers like Hegal, Karl Marx, Lenin, Mao, GDH Cole, Laski John Rouls and Robert Nozik.

Mathematics: -

Sequences and Series: - Understand concepts of topology of real numbers, sequences, comparison tests for infinite series and different tests for positive infinite series, Alternating series, and arbitrary series.

Special Functions and Integral Transforms: - Understand concepts of power series, Bessel's equation, Legenatre's Equations, Hermite's Equations.

Programming in C & numerical Methods: - Learn about basic of C, Data types, Operators, Loops, Functions, Preprocessor, Array, String, pointers and Files in C. Know about solutions of Algebraic and transcendental equations and simultaneous Linear Algebraic equations.

Economics: - The course offered in semester 3 is related with another important branch of Economics popularly known as Macro economics or Theory of Income and Employment. The students are taught a critical analysis

of classical Theory of Income and employment. A detailed explanation of Keynesian Economics is also there. This economics emerged as a criticism of Classical Economics after the Great Depression of the World in 1929. The various dimensions of Macro Economics like trade cycles, Investment, Banking, economic development, inflation, money etc. are also covered. The study of this branch of economics is significant for students in the sense that they not only get theoretical knowledge of different concepts but know their practical utility also from policy implications point of view. No one can deny the role and relevance of Monetary Policy, Fiscal Policy, Taxation Policy, Foreign Trade policy etc. where the aggregates and averages are utilized and analyzed.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

History: - Students will gather knowledge about nationalism, genesis of congress, Moderates, Extremists, Gandhi and his movements, Subhash Chander Boss and his INA, Princely states, Integration and Foreign Policy.

English: -

Students will increase their reading speed and comprehension of academic articles. Students will improve their reading fluency skills through extensive reading and analysis of the text. Besides this Student will attain and enhance

competence in the four modes of literacy: writing, speaking, reading and listening.

HINDI: -

खंड (क): - डॉक्टर रोहिणी अग्रवाल द्वारा संपादित पुस्तक 'कथाक्रम' में संकलित सात कहानियां विद्यार्थियों को 21वीं सदी के बदलते मूल्यों, परिस्थितियों, जीवन शैली एवं आसपास के परिवेश की पहचान कैसे करनी है तथा नए समाज का सृजन किस प्रकार से होगा यह सब विद्यार्थियों को इन कहानियों को पढ़कर जानकारी मिलेगी।

खंड (ख): - हिंदी साहित्य के आधुनिक काल के गद्य भाग के द्वारा साहित्य की नवीन विधाएं जैसे उपन्यास, कहानी, नाटक आदि के द्वारा मानव जीवन चरित्र, संस्कृत और समाज से सभी भलीभांति अवगत होकर विद्यार्थी साहित्य लेखन में रुचि लेकर साहित्यिक रचनाओं को रखने के लिए उत्साहित हुए हैं।

खंड (ग): - परिभाषिक शब्दावली विद्यार्थी शब्द निर्माण की सामान्य प्रक्रिया से अवगत होते हैं लोकमानस में रचे बसे शब्दों को तकनीकी से जोड़कर कार्य करना विद्यार्थियों को रोचकता के साथ-साथ हिंदी भाषा प्रेम से भी जोड़ता है।

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PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 5

Punjabi: - Students who have opted for Punjabi as an elective subject in B.A. Year III will be able to analyze and interpret literary texts in forms of Medieval Poetry and Prose based on variety of themes. Students would practice translating English phrases to Punjabi and Vice Versa. This would serve as a great means to make contacts in the outside world. Light will be shed on the history of Punjabi literature from 1700's to 1850's that would elucidate the students about our shared past. They will be able to understand the interconnectedness among masses shaped literature.

Overall, students will be able to analyze as well as draw comparisons at times of complex situations. Gaining literary skills makes disadvantaged people living in isolated communities serve as great resources for the society. The interconnectedness with the "Real World" is established through literature as it deeply focuses on society and encourages discussions.

- Kav Jotan (Medieval Poetry)
- Gad Darpan (Prose Book)
- Translation from Hindi to Punjabi, Punjabi to Hindi Sahit Roop, Kav Roop

Health & Physical Education: -

- Understanding concepts of growth and development, concept of sports organization and administration concepts of posture, anatomy and physiology.

- Growth and development are independent, interrelated processes. For example, an infant's muscles, bones and nervous system must grow to a certain point before the infant is able to sit up or walk. Growth generally takes place during the first 20 years of life developments take place during that time and also continues after that point.

Political Science: - Political Science is the study of the political world in a comparative sense, including the behavior, organizations, institutions and philosophical foundations of political life from the level of individuals to the international setting in both contemporary and historical contexts. The programme makes students understand and analyze the operation of power politics at state, national, regional and global levels.

- The students shall acquire the capacity to observe the politics through various perspectives. The programme gives to the student's career options in higher studies in field related to public policy, international politics, gender studies, development studies and law.
- The programme prepares the students the undertake research projects.
- Formulate socially relevant research proposals and presentations.
- The programme opens opportunities to undergo various competitive exams of administrative service law and public policy.
- Comprehend the meaning and evolution of Comparative politics along with various traditional approaches to study the same.
- Develop an understanding of the concept of constitutionalism along with various forms of government.

Mathematics: -

Real Analysis: - Understanding concepts of Riemann Integral, Improper Integrals, Metric Spaces, Completeness, Continuity, Compactness and Connectedness in Metric Spaces.

Group and Rings: -Understand concepts of Groups, Cosets, Homeomorphisms, Automorphisms and Permutation Groups. Understand concepts of rings, Fields, quotient Rings, Polynomial Rings, Euclidean Rings and Homomorphism's of Rings.

Numerical Analysis: - Learn about finite difference operators, interpolation with equal and unequal intervals, Central Difference Interpolation Formulae. Know about probability distribution, Binominal Distribution, Normal Distribution and numerical Differentiation. Understand concepts of Eigen value problems, Numerical Integration and Numerical Solutions of ODE.

Economics: - A very important branch of Economics "Indian Economy" is taught at semester 5th and Semester 6th levels. The students learn to differentiate between Economic Development and Economic Growth. The various measures of economic development are studied. The developing and developed economies are compared. The diverse topics like population, agriculture, poverty, unemployment are studied in general and in Indian context also in fifth semester. Some other crucial sectors like Industry, Planning, Foreign Trade, MNC, Industrial Disputes etc are studied and analyzed in semester 6th. The international Institutions like World Bank, International Monetary Fund and World Trade Organization are taught. The study of Indian Economy is beneficial for students for their preparation of various competitive exams.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts

of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

History: - From this paper students will learn about decline of Feudalism and rise of modern era, Renaissance reformation rise of absolutist state, Glorious revolution, scientific revolution, Industrial revolution and Agriculture revolution.

HINDI:-

खंड (क): - साहित्य में समाज कल्याण भी भावनाओं को जोड़कर प्रयोगवादी, प्रगतिवादी कवियों की राजनीतिक, सामाजिक, धार्मिक, आर्थिक सांस्कृतिक अनुभूतियों को समझना विद्यार्थियों के लिए रुचिकर एवं कल्याणकारी है। सामाजिक संघर्षों से निपटना समकालीन हिंदी कविता विद्यार्थियों को बखूबी सिखा रही है।

खंड (ख): - आधुनिक काल के काव्य खंड में भारतेंदु से लेकर नई कविताओं तक के बदलते स्वरूप से विद्यार्थी कविता के हर रूप को, उसके नए ढंग को समझकर भावनाओं की शोभयता और पवित्रता का साक्षात्कार करके लाभान्वित होता है।

खंड (ग): - पत्रकारिता और उसके विविध आयामों की जानकारी आज के समय की आवश्यकता है जो विद्यार्थियों को समाज से बखूबी जोड़ती है एवं विद्यार्थियों की मौलिक प्रतिभा को भी उजागर करती है।

English: -

Students will strengthen their ability to read novels and summaries the contents using the process approach. Students will increase their reading speed and comprehension of academic articles. Students will improve their reading fluency skills through extensive reading of the text.

FACULTY OF ARTS

B.A. (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 6

Punjabi: - Students who have opted for Punjabi as an elective subject in B.A. Year III will be able to analyze and interpret literary texts in forms of Medieval Poetry and Prose based on variety of themes. Students would practice translating English phrases to Punjabi and Vice Versa. This would serve as a great means to make contacts in the outside world. Light will be shed on the history of Punjabi literature from 1700's to 1850's that would elucidate the students about our shared past. They will be able to understand the interconnectedness among masses shaped literature.

Overall, students will be able to analyze as well as draw comparisons at times of complex situations. Gaining literary skills makes disadvantaged people living in isolated communities serve as great resources for the society. The interconnectedness with the "Real World" is established through literature as it deeply focuses on society and encourages discussions.

- Kav Jotan (Medieval Poetry)
- Gad Darpan (Prose Book)
- Translation from Hindi to Punjabi, Punjabi to Hindi Sahit Roop, Kav Roop

Health & Physical Education: - Understanding concepts of motivation and socialization concepts of sports training and doping, concept of sports biomechanics, anatomy and physiology. The term motivation is derived from the word 'Motive'. The word "Motive" as a noun means an objective, as a

verb this word means moving are forces which induce people to act in a way. So as to ensure the fulfillment of a particular human need at a time. Behind every human action there is a motive.

Political Science: - Comprehend the process of evolution and making of American and British Constitution. Critically analyze the relation between Union legislature, Executive and Judiciary in USA and UK. Develop a deeper understanding of the Party Systems, Pressure Groups and Bureaucracy of USA and UK.

Mathematics: -

Dynamics: - Learn about motion along a curve, relative Motion, Simple harmonic Motion, elastic Strings, Newton's laws of motion, Work, Power and Energy. Understand concepts of motion of a particle on smooth and rough plane curves, Projectiles, Central Orbits, Kepler's Laws of Planetary Motion, Motion of a Particle in 3D.

Real & complex Analysis: - Understand concepts of Jacobians, Beta and Gamma Functions, Double and triple Integrals, Fourier series, and Calculus of complex function, elementary functions, Mobius transformations and Critical mappings.

Linear Algebra: - Understand the concepts of vector spaces and subspaces, homomorphism's, Dual Spaces, Linear Transformations, Rank –Nullity Theorem, Change of basic matrix.

Economics: - A very important branch of Economics "Indian Economy" is taught at semester 5th and Semester 6th levels. The students learn to differentiate between Economic Development and Economic Growth. The various measures of economic development are studied. The developing and developed economies are compared. The diverse topics like population, agriculture, poverty, unemployment are studied in general and in Indian

context also in fifth semester. Some other crucial sectors like Industry, Planning, Foreign Trade, MNC, Industrial Disputes etc are studied and analyzed in semester 6th. The international Institutions like World Bank, International Monetary Fund and World Trade Organization are taught. The study of Indian Economy is beneficial for students for their preparation of various competitive exams.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

History: - This paper focused on the great French revolution in 1789. Students come to know about the emergence of Napoleon Bonaparte in Europe and his Expansion. Consolidation, Downfall, Vienna Congress, Metternich Bismarck and his diplomacy. System of alliances, 1917 Russian revolution, Fascism, Nazism, Germany and Italian Unification, 1st world war and 2nd World war etc.

English: -

The prescribed text proposes to equip the students with Enhanced abilities in grammar, oral skills, reading, and writing and study skills besides increasing their awareness of correct usage of English grammar in writing and speaking.

HINDI:-

खंड (क): - निबंध लेखन की कला एक खूबसूरत कला है पाठ्यक्रम में लगाए गए निबंध विद्यार्थियों की विचारात्मक को पल्लवित बनाते हैं।

खंड (ख): - हरियाणवी भाषा और साहित्य की जानकारी विद्यार्थियों के लिए लाभान्वित करने वाली रही है इसी पाठ्यक्रम में हरियाणवी भाषा और साहित्य की परखता विद्यार्थियों को कुछ नई विचारवली को सोचने की और समझने की ओर ले जाती है।

खंड (ग): - पत्र लेखन, संक्षेपण विद्यार्थियों को प्रशासनिक कार्यप्रणाली से अवगत कराते हैं। आज के समय में विद्यार्थियों के लिए यह अति आवश्यक है।

FACULTY OF COMMERCE

B.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 1

- **Financial Accounting:** - To learn relevant financial accounting carrier skills, applying both quantitative and qualitative knowledge to their future carrier in business.
- **Business Communication:** - Effective business writing, Effective Business Communication, Research Approaches and Information Collection.
- **Business Mathematics:** - To assist in solving variety of formulas and calculate payroll, utilize the calculations to analyze investment, business and consumer loans.
- **Computer Application in Business:** - Demonstrate a basic understanding of computer hardware and software, Demonstrate problem solving skills.
- **Principles of Management:** - To assist in managing business, Decision Making, Planning and Controlling.
- **Micro Economics:** - To assist in budget management, Household management, helpful in marketing analysis.

FACULTY OF COMMERCE

B.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 2

- **Fundamental of Marketing:** - Determine Market segments and target customers, evaluate how marketing strategies align with corporate strategies.
- **Financial Accounting:** - To assist in doing partnership business, to know about admission and retirement of partners.
- **Business Mathematics:** - Students will be able to understand simple and compound interest and linear programming.
- **E-Commerce:** - To assist in online business, E-Commerce gives business the ability to reach more customers than traditional.
- **Macro Economics:** - Helpful for the knowledge of whole economy and assist us for solution of different kinds of problems related to inflation and deflation, unemployment and poverty.
- **Business Environment of Haryana:** - Helpful in understanding different small scale and medium scale industries, knowledge about different financial institutions of Haryana.

FACULTY OF COMMERCE

B.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 3

- **Corporate Accounting:** - To provide the students with an understanding of the concepts and standards underlying the accounting procedures used to measure business performance.
- **Business Statistics:** - To assist in using different statistical techniques, produce appropriate graphical and numerical descriptive statistics for different types of data.
- **Indian Financial System:** - Helpful in understanding different financial markets and understanding different financial institutions.
- **Rural Marketing:** - Understanding the importance of rural markets, expose the students to rural market distribution and services.
- **Business Law:** - To explain the framework within which business activities shall be carried out and to raise an issue to various legal & semi Legal authorities against the Govt. in case the legal rights of business have been violated.
- **Company Law:** - Gain knowledge about company Act, 2013, memorandum of association and articles of association, prospective, owned and debt capital.

FACULTY OF COMMERCE

B.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 4

- **Corporate Accounting:** - To provide the information to students about objectives of Corporate Accounting, Systematically record transactions, sort and analyzing them & prepare financial Statement and assessing the financial position.
- **Business Statistics:** - Apply probability rules and concepts relating to discrete and continuous random variables to answer questions with in a business context.
- **Business Law:** - Dealing with the rights and obligations of business Persons arising out of business transaction in respect of business operations or business property.
- **Company Law:** - Get knowledge about company meetings and resolutions, reconstructions directors work in the company, power & duties of directors and winding up of the company.
- **Computerized Accounting System:** - Demonstrate an understanding of accounting reports and records. Communicate effectively using standard accounting terminology.
- **Rural Marketing:** - Understand the importance of rural markets, expose the students to rural market distribution and services.

FACULTY OF COMMERCE

B.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 5

- **Cost Accounting:** - Students will be able to report, analyze and lead to the improvement of internal cost control and efficiency.
- **Financial Management:** - Students will be able to learn how to manage finance for business and how to procure funds for business in what quantity and from which source.
- **Goods & Service Tax:** - Understand the concepts of GST, Principle of GST and relevant rules circumstances in which corporate get registered and liable to pay GST, Offences and Penalties.
- **Income Tax:** - Knowledge of salary, heads of income, how to calculate tax on income.
- **Auditing:** - Understand the concepts of Auditing, Importance and types of audit, Demonstrate awareness, Knowledge and appreciation in application of auditing principles and practices.
- **Supply Chain Management:** - Understand the principles of supply chain management and its Importance in Business Management.

FACULTY OF COMMERCE

B.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 6

- **Management Accounting:** - Demonstrate mastery of costing systems, cost management, Budgeting system and Performance measurement system.
- **Fundamentals of Insurance:** - The outcomes of this session are to understanding of fundamentals of Insurance, the Risk management techniques, principles of Insurance contracts.
- **Human Resource Management:** - Demonstrate an understanding of key terms, theories / concepts and practices with in the field of HRM.
- **Income Tax:** - Knowledge of Income and other heads of Income, Deductions, Set off and clubbing of income.
- **Business Environment:** - Understanding Legal Environment, Geographical environment, Technological environment, Knowledge of International Concepts – Monetary Policy, Fiscal policy – Balance of Payments.
- **Retail Management:** - Enable the students to gain skills on Analysis and decision making in Retailing Management.

FACULTY OF SCIENCE

B.SC (GENERAL)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 1

Chemistry

Inorganic Chemistry: - Students will learn the rules and principles of atomic structure. They will get the knowledge of various trends in periodic table and its properties. They will learn bonding concepts of molecular and ions. Structures and defects of ionic solids will elucidate to students.

Physical Chemistry: - Students will study the laws, equations and phenomenon of gases. They will discern the structure and properties of liquids. They will learn about crystal system of solids.

Organic Chemistry: - They will gather the knowledge of structure and bonding of organic compounds. Basic concepts of stereochemistry and its configuration will be clarified to them. They will understand the mechanism of organic reactions. They will get detailed knowledge of the nomenclature and properties of alkanes and cycloalkanes.

Physics

PH-101: Classical Mechanics and theory of relativity: - Students will learn about the basic concepts of Classical Mechanics with the help of Lagrange's equations and their implications to the practical problems. Brief analysis of Theory of Relativity starting from Newtonian explanations to Einstein's explanations that enables the students to apply the concepts of special theory of relativity to different problems.

PH-102: Electricity, Magnetism and Electromagnetic theory: - Students will gain knowledge about the use of Del operator and its applications in various physical problems related to electric and magnetic fields. Hysteresis loss curves and its applications. They will learn about alternating currents, LCR circuits, resonant circuits and their practical utility.

Mathematics: -

Algebra: - Understanding the concepts of Matrix, Rank of a Matrix, Different types of Matrices, Characteristics of a Matrix and application of matrices to a system of linear equations. Learn about bilinear and Quadratic forms, Relation between the roots and coefficients of an equation, Transformation of an equation and Descartes' rule of signs.

Calculus: - Understanding the concepts of limits, continuity derivability, successive differentiations, expansions, asymptotes, curative and singular points. Know about curve tracing, Rectification, quadrature, area under curve, Volume and surfaces of solids of revolution and reduction formulae.

Solid Geometry: - Understanding the concepts of Conics, System of Conics, Confocal Conics, How to trace Conics and polar equations of conic. Learn about properties of sphere, cone, cylinder, conicoid, generating lines and confocal conicoid. Know about how to reduce the second degree equations.

Computer Science: - **Ability** to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

English: - Students will develop skills that enable them to communicate effectively in writing. They will learn to present ideas clearly and logically to achieve a specific purpose and to be appropriate for an intended audience. By engaging in work to achieve these objectives, students attain and enhance competence in the learning outcomes associated with the course content. Students will strengthen their ability to read, comprehend, and write academic papers, essays and summaries using the process approach.

FACULTY OF SCIENCE

B.SC (GENERAL)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 2

Chemistry: -

Inorganic Chemistry: - Students will get to know about the types and effects of hydrogen bonding and Vander Waal's Forces. They will be able to get the brief introduction to metallic bond and semiconductors. Gain knowledge of S-Block, P- Block elements and noble gases. They will understand the structure and properties of Boron, carbon, Nitrogen, Oxygen and halogen Families.

Physical Chemistry: -Theories of Chemical Kinetics and its Factors on chemical reactions will be studied by the students. They will come to know the basic concept of Electrochemistry and Laws of Conductance.

Organic Chemistry: - they will get knowledge of nomenclature, mechanism and reactions of alkenes, dienes, alkyne, alkyl and alkyl halides. They will be able to get detailed information about the nomenclature and aromaticity of arenes.

Physics: -

PH-201: Properties of matter and Kinetic theory of Gases: -Learn about the dynamics of rigid body, moment of inertia, coefficients of elasticity. After studying these concepts, they will be able to perform the experiments in practical classes. They will also learn about kinetic theory of gases, law of equipartition of energy, transport of energy and momentum in gases.

PH-202: Semiconductor Devices: - Students will learn in detail about the semiconductors and their types, uses in various types such as diodes (P-N Junction diode, Zener Diode), transistors, their characteristics and their uses as an amplifier, oscillators. Also C.R. O and its applications. This knowledge will help them in understanding complex electronic circuits in higher classes.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

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Mathematics: -

Number Theory and Trigonometry: - Learn about divisibility, Euclid Method, Congruence's, Fermat's Wilson's and Chinese remainder Theorem. Know about Euler's Function, Residue Systems, and Quadratic Residues. Understanding concepts of De Moiré's Theorem and its applications, Functions of complex variable, Hyperbolic Functions and summation of series.

Ordinary Differential Equation: - Understanding concepts of degree and order of a differential equation, Non – Homogenous Linear Differential Equation with variable and constant coefficient's exact differential equations and orthogonal trajectories. Different methods of solving non-homogenous differential equations, Total Differential equations and simultaneous differential equations.

Vector Calculus: - Understanding concepts of vector, scalar and vector products, differentiation of vectors, Gradient, divergence and URL. Learn about vector integration, Green's Guass's and stokes theorem

FACULTY OF SCIENCE

B.SC (GENERAL)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 3

Chemistry: -

Inorganic Chemistry: - Characteristics and properties of d-block elements will be studied by the students. They will understand the theories and isomerism in co-ordination compounds. Types, properties and reactions of non-aqueous solvents will be identified by the students.

Physical Chemistry: - the deep knowledge of thermodynamic properties of real and ideal gases will be gained by the students. They will come to know about the laws and equations of chemical equilibrium and its constants.

Organic Chemistry: - they will get detailed knowledge of nomenclature, synthesis and chemical reactions of alcohols, phenols, epoxides, carboxylic acids and its derivatives. They will analyze the UV spectra of simple organic compounds.

Physics: -

PH-301: Computer Programming and thermodynamics: - Students will learn about FORTRAN preliminaries, FORTRAN language. After this they will be able to write algorithm, flow -chart and FORTRAN programs for various problems. They will get knowledge of laws of thermodynamics, limitations, and applications. After understanding the concepts of Entropy , Clausius – Clapeyron equation , Maxwell's relations , they will be able to understand Physics behind the various phenomenon occurring in nature .

PH-302: Wave and Optics-I: - By understanding the phenomenon of Interference and diffraction, the concept of wave like nature of light will be cleared to the students. Students will be able to understand practical implications of these two phenomenon.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

Mathematics: -

Advanced Calculus: - Understanding concepts of continuous functions derivations, mean value theorems, inert medicate forms, Limit, Continuity and differentiability of functions of two variables, maximum and minimum of a function of two variable and partial differentiation. Learn about curves in space, evolutes and involutes and concepts of a surface and envelops.

Partial Differential Equation: - Learn about linear and non-linear first order PDE, PDE's with variable and coefficients, Canonical Forms, Monge's method for second order, Cauchy's Problem. Learn about wave, heat and Laplace equations in 1-D & 2-D.

Statics: - Know about parallel forces, moments, Couples, Equilibrium of coplanar forces, Friction, Centre of Gravity. Understanding concepts of virtual work, forces in 3-d, wrenches, Null Lines and Planes, Stable, Unstable and Neutral Equilibrium.

FACULTY OF SCIENCE

B.SC (GENERAL)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 4

Chemistry: -

Inorganic Chemistry: - Properties and separation of Lanthanides and Actinides will be gained by the students. They will understand the theories of qualitative and quantitative analysis.

Physical Chemistry: - basic concepts of second and third law of thermodynamics will be studied. Types of electrochemical cells and reversible electrodes will be clarified to them. They will get detailed knowledge of equations in electrochemistry.

Organic Chemistry: - Principles and applications of IR spectroscopy will be clarified to the students. They will get detailed knowledge of structures, nomenclature, preparation and properties of amines, diazonium salts, aldehydes, ketones and nitro compounds.

Physics: -

PH-401: Statistical Physics: -By knowing the postulates of Statistical Physics, students will be able to implement them in macroscopic system-Classical (Ordinary gas) and Quantum mechanical system (Electron gas, Boson gas). They will also learn about different theories of specific heat of solid and will be able to understand analogy of specific heat of solid at low temperature.

PH-402: Wave and Optics II: -Phenomena of Polarization will clear the concept of transverse nature of light. Fourier theorem will help them to know

about the components of a complex wave (for example - Output of rectifier, Triangular wave, Square wave) and this knowledge will help them in other branches of Physics particularly Geophysics. Students will learn about Optical Fibres which are very much commonly used in Computer networking, Surgery and dentistry, automotive industries, lighting and decorations, communications etc these days.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

Mathematics: -

Sequences and Series: - Understand concepts of topology of real numbers, sequences, comparison tests for infinite series and different tests for positive infinite series, Alternating series, and arbitrary series.

Special Functions and Integral Transforms: - Understand concepts of power series, Bessel's equation, Legendre's Equations, Hermite's Equations.

Programming in C & numerical Methods: - Learn about basic of C, Data types, Operators, Loops, Functions, Preprocessor, Array, String, pointers and Files in C. Know about solutions of Algebraic and transcendental equations and simultaneous Linear Algebraic equations.

FACULTY OF SCIENCE

B.SC (GENERAL)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 5

Chemistry: -

Inorganic Chemistry: -they will understand the theories, factors and limitations of transitions metal complexes. The knowledge of magnetic properties and electronic spectra of transition metal complexes will be given to students.

Physical Chemistry: -the brief introduction to quantum mechanics will be clarified to the students. Brief explanation to rotational, vibrational and Raman Spectroscopy will be given to them.

Organic Chemistry: -Spectral Knowledge of NMR spectroscopy will be given to them. Students will classify the carbohydrates and organometallic compounds and learn to synthesis it.

Physics: -

PH-501: Quantum and Laser Physics: - Students will learn to find out eigen value and eigen functions and their significance through Schrodinger wave equation. Then they will be able to implement this knowledge in solving the problems like Particle in a box, Potential step, Potential barrier, Harmonic Oscillator. Students will learn what is LASER, how it is produced. They will learn Principle, constructions and working of different types of laser (He-Ne Laser, Ruby Laser, Semiconductor Laser) which are used in medical science,

Radar, Space communication, entertainment industry, research field etc . It will help them to enter in new field of innovation.

PH-502: Nuclear Physics: - Students will gain knowledge starting from structure of nucleus, nuclear properties, theories, energetic of nuclear decays, interaction of nuclear radiations with matter and their detection going up to nuclear accelerators and Nuclear reactor .It will help them to create interest in field of Nuclear Physics.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

Mathematics: -

Real Analysis: - Understanding concepts of Riemann Integral, Improper Integrals, Metric Spaces, Completeness, Continuity, Compactness and Connectedness in Metric Spaces.

Group and Rings: -Understand concepts of Groups, Cosets, Homeomorphisms, Automorphisms and Permutation Groups. Understand concepts of rings, Fields, quotient Rings, Polynomial Rings, Euclidean Rings and Homomorphism's of Rings.

Numerical Analysis: - Learn about finite difference operators, interpolation with equal and unequal intervals, Central Difference Interpolation Formulae. Know about probability distribution, Binominal Distribution, Normal

Distribution and numerical Differentiation. Understand concepts of Eigen value problems, Numerical Integration and Numerical Solutions of ODE

FACULTY OF SCIENCE

B.SC (GENERAL)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 6

Chemistry: -

Inorganic Chemistry: -They will get to know the inorganic aspects of organometallic compounds. They will learn the concepts of acids and bases. Biological role of inorganic compounds will be differentiated by the students. Detailed knowledge of preparation and properties of silicones and phosphazenes will be gained by them.

Physical Chemistry: - Introduction to statistical mechanics will be gained by them. They will get to know the laws of photo chemistry and qualitative description of various processes. Colligative properties and applications of solutions will be elucidated to students. Concepts of phase's equilibrium will be introduced to the students.

Organic Chemistry: - the study of nomenclature, synthesis and reactions of heterocyclic compounds, amino acids, peptides and protein will be explained to them. Students will get to know the synthesis of organic compound via enolates. Synthesis and mechanism of polymerizations will be introduced to them.

Physics: -

PH-601: Solid State and Nano Physics: - Students will get the knowledge about basic crystal structure of various crystals (Zinc Sulphide, Sodium Chloride, and Diamond) with the help of Bragg's law, concept of K-space, reciprocal lattice. This knowledge is necessary in Solid State Physics. By getting the knowledge of Superconductivity, they can join the field of research and advanced technology. This chapter creates interest of students in nano technology and its applications in industries, medical field etc

PH-602: Atomic and Molecular Spectroscopy: - Students will gain knowledge about basics of spectroscopy, effect of external fields on spectra of atoms (Stark effect, Zeeman Effect) and their applications in Zeeman pattern of D1 and D2 lines of Na. They will learn more about molecular spectroscopy by studying electronic, vibrational and rotational spectra which will help them in understanding the structure of molecules. This will help them a lot in research field of spectroscopy.

Computer Science: - Ability to work on computing design, evaluation and implementation. Students will familiarize with the basics of operating system, DBMS, Data Structure. Analysis impacts of computing on individual organization and society. Student will study about windows, software and various programming language. As web based and application based designer and developer. Through competitive exam like IT officers, Bank Employees in various public & Private Sector. Students will be able to solve problems using computer programming and getting familiar with the fundamentals concepts of computers. Students will be able to acquire the skills in Modular Programming, object oriented programming and web page programming.

Mathematics: -

Dynamics: - Learn about motion along a curve, relative Motion, Simple harmonic Motion, elastic Strings, Newton's laws of motion, Work, Power and

Energy. Understand concepts of motion of a particle on smooth and rough plane curves, Projectiles, Central Orbits, Kepler's Laws of Planetary Motion, Motion of a Particle in 3D.

Real & complex Analysis: - Understand concepts of Jacobians, Beta and Gamma Functions, Double and triple Integrals, Fourier series, and Calculus of complex function, elementary functions, Mobius transformations and Critical mappings.

Linear Algebra: - Understand the concepts of vector spaces and subspaces, homomorphism's, Dual Spaces, Linear Transformations, Rank –Nullity Theorem, Change of basic matrix.

FACULTY OF COMMERCE

M.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 1

- **Organizational Behavior:** - To analyze and compare different models used to explain individual behavior related to motivation and rewards.
- **Business Environment:** - Knowledge about different Govt. policies as Industrial policy, monetary policy, Fiscal Policy, Knowledge of different consumer Acts i.e. Consumer protection Act, RTI.
- **Managerial Economics:** - Knowledge about scope and nature of economics, Demand and estimation of consumer behavior knowledge of markets and inflation, deflation and trade cycle.
- **Company Law:** - Learn about Indian company Act, 2013, Memorandum of Association, Articles of Association, Prospectus, owned and debt capital, Get knowledge about company meetings and resolutions, Reconstruction and winding up of the company.
- **Accounting for managerial Decisions:** - To assist the management of a company in efficiently performing its functions: planning, organizing, directing and controlling.
- **Marketing Management:** - Critically evaluate the key Analytical Frameworks and tools used in Marketing, Apply key marketing theories, Frameworks and tools to solve marketing problems.

FACULTY OF COMMERCE

M.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 2

- **Human Resource Management:** - Explain the importance of human resources and their effective Mgt in organization and demonstrate a basic understanding of different tools used in forecasting and planning human resource needs.
- **International Business Environment:** - Knowledge of International Concepts of business environment i.e. World Bank, GATE, IMF, International risks and rates etc.
- **Strategic Marketing:** - Clearly defines the purpose of the business and establishes realistic goals and objectives consistent with that mission in a defined time frame with the organization capacity.
- **Financial Management & policy:** - Demonstrate an understanding of the overall role and importance of the financial function, understand the basic finance management concepts communicate effectively using standard business terminology.
- **Corporate Accounting:** - Students will be able to understand accounts of corporate i.e. holding of companies, liquidation of companies, Banking and Insurance.
- **Business Statistics:** - Students will be able to learn about statistical techniques used in the business.

FACULTY OF COMMERCE

M.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 3

- **Advanced Financial management:** - Understand the concept of financial Management and significance, dividend and capital structure decisions. Learn about different techniques of corporate restructuring, Mergers and take over, Financial Restructuring.
- **Financial Institutions & Markets:** - Gain knowledge about financial system and its relation with financial markets. Learn about money market, capital market, Government securities market, Role of SEBI, understand the concept of developments banks, Merchant Banking and Mutual Funds and its functions.
- **Marketing Research:** - Understand basic concepts of marketing research, types of research, Methods of data collection.
- **Advertising Management:** - Demonstrate an understanding of the overall role advertising plays in the business world. Demonstrate an understanding of Advertising strategies and budgets.
- **Human Resource Development:** - To provide a comprehensive platform for the development of human resources in organization to provide a climate for employees to discover, develop and use their knowledge for betterment of organization.
- **Computer Application in Business:** - Knowledge of computer concepts in business knowledge of excels, Microsoft word, PowerPoint etc.

FACULTY OF COMMERCE

M.Com (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 4

- **Corporate Tax Planning & Management:** - Through the various tax deductions and exemptions provided under the Income Tax Act, a company can substantially reduce its tax burden in a legal way. A good tax planning results out of: Disclosing correct information to relevant IT departments.
- **Project planning & control:** - Learn about investment opportunities, Market, demand and technical analysis, Major cost components, Means of financing, understand the various schemes of financial institutions, Profitability, Gain Knowledge about methods of Network techniques and implementation.
- **Sales Management:** - Develop an effective Sales compensation Plan, evaluate the Performance of a sales person, organize sales territories to maximize selling effectiveness.
- **Service marketing:** - Understand basics of services marketing, service marketing mix, blue print of service development, distribution channels, strategies of pricing of services.
- **International Human Resource Management:** - IHRM is concerned with management of all human resource activities in global organizations without regards to geographic boundaries.
- **IT & E-Commerce:** - Knowledge of information technology and online trade of goods and service knowledge internet browsers etc.

FACULTY OF ARTS

M.A. (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 1

Paper Name 1: - 1550-1660

- Increase students familiarity with Shakespearean language and expression and they learn to identify a range of literary techniques relevant to the study of a dramatic text.
- Analyze key themes in the epic poem and get new approach to summarize the plot of paradise lost by John Milton.
- They examine the Genre –What kind of play is Doctor Faustus and also learn about blank verse.
- It helps students to explore how writers use the resources language as creativity to explore the entire range of human experience through dramas as a literary form.
- Learn about the historical, Social Political and literary features of the time.
- They will become familiar with the structure of sonnet as they read Astrophel and Stella.

Paper Name 2: - 1660-1798

- Develop their knowledge about the history, culture and politics of the Restoration age in British History.
- Become familiar with the various kinds of Satire prevalent in Restoration England.
- Acquire knowledge about the structure of allegory.

- Learn about the structure and characteristics of comedies in text.

Paper Name 3: - 1798-1914

- Students appreciate poetry as a literary art. Gain Knowledge about poetry various element such as diction, tone, Form, genre, Imagery, Figures of speech, Symbolism, theme etc.
- Students would have followed the concepts and significance of nature in romantic poetry.
- Strengthens the aesthetic sense.

Paper Name 4: - 1914-2000

- Students will become familiar with the main writers and their works of the literary period like T.S. Eliot and E.M. Forster and poetry of Philip Larkin.
- Analyze the beginning of World wars and able to feel the new changes that came as a result of the war.
- Use textual references, including quotations, to support and illustrate interpretations.
- Appreciate the depth and power of the English Literary Heritage.

Paper Name 5: - Study of a Genre Fiction

- Study will be able to define the term “Genre”.
- They will be able to interpret texts with an awareness of and curiosity for other views points.
- After reading E.M. Forster’s *Aspects of the Novel* they acquire deep knowledge about various elements of the novel.
- Learn about the techniques of “Stream of Consciousness as they read James Joyee’s – *A Portrait of the Artist as a Young Man*.

FACULTY OF ARTS

M.A. (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 2

Paper Name 1: - 1550-1660

- Students will become familiar with the structure of a tragedy as they read Shakespeare's hamlet.
- After Reading John Webster's play they will learn to identify a range of literary techniques relevant to the study of a dramatic text.
- John Donne's poetry recitations make them able to explain what being a metaphysical poet entails.
- Learn about the literary trends adopted by the prose writers like essays and periodicals.

Paper Name 2: - 1660-1798

- Become familiar with the structure of adventurous novel as they read Robinson Crusoe.
- Gain ability to distinguish between the various satirical and comedic forms.
- To make the students through with the main writers and enhance their knowledge.
- To instill in the students the ability to analyze these works from the political and sociological perspectives.

Paper Name 3: - 1798-1914

- Gain knowledge about dramatic monologue and rhyming couplet.
- Students will be able to demonstrate their understandings of important plot points, Characters and themes in *Arms and the Man* in classroom discussions, Group projects and creative assignments.
- They would have understood how to distinguish between reason and imagination and the predominance of imagination in romantic literature.

Paper Name 4: - 1914-2000

- They will become familiar with the theory of absurdum in Albert Camus, *The Stranger*.
- Interpret literary texts in English by nurturing and utilizing their ability to understand drama in skilled, Knowledgeable and ethical manner.
- Students would have got an idea to make a comparative study of traditional drama and absurd drama.

Paper Name 5: - Study of a Genre Fiction Opt (I)

- Students would have a detailed knowledge and understanding of some important genres of popular fiction and some representative examples of each genre.
- It enhances the interpretative and expressive skills of the students.
- To develop their critical thinking capabilities focused through the course as an important need.
- Conceptualize the Genre of Novel and its types viz. Allegorical, Gothic, Historical, epistolary, Picaresque and Psychological.
- They would learn the elements of fiction-Narrative technique, Setting, Point of View, Style and Detective Fiction.

FACULTY OF ARTS

M.A. (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 3

Paper Name 1: - Critical Theory

- Acquaint them with the various principles critics and trends of criticism since the ancient times to modern times.
- Acquire knowledge of practical criticism with the key concepts of contemporary criticism.
- Students will know about major critical approaches and how to apply them to literary works.
- Empower the students to describe historical and modern schools of criticism with special references to the modern trends as Formalism, Deconstruction etc.

Paper Name 2: - American Literature

- Students will become familiar with the American style of writing and philosophies and its impact on the other writers.
- Develop an understanding of social, Cultural, historical and literary elements of changing American Literature.
- Students would have understood how the great American themes of Self-relative individualism, sin and redemption were shaped through its rich and varied literature.
- Students would have learnt some aspects of American English usage and diction.

Paper Name 3: - Indian Writing in English

- They will gain knowledge about major movements and figures of Indian Literature in English through the study of selected literary texts.
- S. Radhakrishnan's The Hindu view of life develops high and moral values in students.
- Comprehend the role of English as a medium for political awakening and the use of English in India for creative writing.

Paper Name 4: -Colonialism and Post Colonialism

- They will realize the plight and exploitation of the natives during the colonized period.
- Understand the cultural legacy of colonialism and imperialism.
- Be able to compare and contrast the indigenous literature and culture with other literatures and cultures.
- Develop a broader vision of the world.
- Students would have acquainted themselves with the major theories and reputed writers who practice those theories.

Paper Name 5: -Literature and Gender

- Enhance their knowledge and ability to conduct interdisciplinary feminist analyze.
- They will get new approach after the study of feminism.
- It will equip the students to understand gender conceptualizations and carry out gender analysis of literary texts.

FACULTY OF ARTS

M.A. (General)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER - 4

Paper Name 1: - Critical Theory

- Enhances fluency of languages, presentation skills and creative writing and also widens the knowledge of literary theories and focuses on their importance.
- Students will become familiarize with I.A. Richard's ideas and also learn about Virginia Woolf's views on modern fiction.
- Encourage students to discover their own literary and critical "Theories" as they read.
- Students will get new approach of practical criticism.
- They will become familiar with linguist Ferdinand de Saussure and learn about his concepts of Sign, Signified and Signifier.

Paper Name 2: - American Literature

- Students inculcate a rhetorical approach to the literary study of American texts and also the conceptions, generalizations, myths and beliefs about American Cultural History.
- Learn about the theory of "Carpadiem".
- It will extend an opportunity to study a brief history of American Literature – Poetry, Drama and Fiction.
- Students will get knowledge about American Dream which is clearly pervasive in Tennessee William's play A Streetcar named Desire.

Paper Name 3: - Indian Writing in English

- They will comprehend the role of English as a medium for political awakening and the use of English in India for creative Writing.
- Students would have understood the richness of Indian Literature.
- They will learn about the difference between Anglo Indian and Indo Anglo Indian and Indo Anglian Literature.
- Students would have learnt the values of spiritual refinement in human life.

Paper Name 4: - Colonialism and Post Colonialism

- Students will get acquainted with the key terms like Hybridity, other, Discourse and Writing back.
- Develop aesthetic and critical awareness of diverse cultures and literary creations.
- Students would have understood how the colonial power has provoked from the nation in their search for a literature of their own.
- They will discern the development of post colonial literature.

Paper Name 5: - Literature and Gender

- Students would have sharpened their knowledge comprehending the role of woman for the betterment of society.
- They will become familiarize with gender equality and women's rights.
- Get new approach after the study of feminism.
- Enhance their knowledge and ability to conduct interdisciplinary feminist analyze.

FACULTY OF SCIENCE

M.SC (MATHEMATICS)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 1

Advanced Abstract Algebra – I: -

- Understand the concepts of $\text{Aut}(G)$ and $\text{Inn}(G)$, Normalizer, Centralizer, Class Equation and Sylow groups.
- Learn about Ring, Prime Fields, Extensions, Simple Field and Algebraic Expressions, Splitting fields and Normal extension.
- Learn about separable elements, polynomials and extensions. Perfect fields, Galois Theory and Fundamental theorem of Algebra.
- Know about Solvable, Alternating groups, Galois Radical extension, Cyclic Extensions.

Real Analysis – I

- Understand concepts of Riemann Stieltjes Integrals, Rectifiable Curves, Sequence and Series of Functions, Construction of a real continuous now where differentiable function.
- Learn about functions of several variables, directional derivatives, Inverse Function and Implicit Function Theorem.
- Know about Power Series, Exponential, Logarithm, Trigonometric Functions and Gamma Functions.

Topology

- Learn about basics of Topological Spaces, Interior, Limit Point, Closure, Countable and separable Spaces, Lindelöf Theorem and base for topology.
- Learn about continuous functions, product spaces, separation axioms and Quotient topology.
- T spaces, embedding Theorem, T_4 Spaces, Filters, compactness, convergence of filters, Stone-Čech Compactification.

Complex Analysis

- Learn about power series, differentiation, branches and branch cuts, path, contour, Cauchy-Goursat Theorem.
- Understand the concepts of winding number, Cauchy Integral Formula, Liouville's Theorem.
- Understand the concepts of Maximum and Minimum modulus principle, Schwarz Lemma, Laurent and Taylor Series, Argument principle and Residues.
- Know about bilinear Transformation and Conformal Mapping.

Differential Equation – I

- Learn about IVP, Approximation of Solutions, Lipschitz Condition, Cauchy-Peano theorem, Extension Theorem, Linear Differential Systems, LDE of order n , Green's Formula, Maximal and minimal Solutions and Uniqueness Theorems.

FACULTY OF SCIENCE

M.SC (MATHEMATICS)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 2

Advanced Abstract Algebra – II

- Learn about commutators, P.Hall Lemma, Central series, Nilpotent Groups, Linear Transformations, Companion Matrix, and Canonical Forms.
- Understanding concepts of Modules and its properties. Artinian modules and Ring, Noetherian Modules and Ring, Hilbert Basis Theorem.

Real Analysis – II

- Understand the concepts of Lebesgue measure, Borel Sets, Algebra of Measurable sets, F & G sets.
- Functions, Egoroff & Lusin's Theorem, F-Riesz Theorem, Integral of Non-negative Functions, differentiation and integration.
- Learn about absolutely continuous functions, L^p spaces, Riesz representation theorem.

Computer programming (Theory)

- Learn about numerical constants and variables, input / Output, Conditional Flow, looping, Logical Expressions, Array, desired Array Types, Pointers, Modules, Fortran 90/95 Features.

Complex Analysis – II

- Understand concepts of spaces of analytic functions, Hurwitz's, Montel's, Riemann Mapping Theorem, Gamma Function, Riemann – zeta Function, Schwarz Reflection Principle.
- Learn about Monodnomy Theorem, Dinchlet Problem, Green's Functions, Order of entire Function, Great Picard Theorem, Bieberbach's Conjecture.

Differential Equation – II

- Learn about linear second order equations, sturm Theory, Autonomous System, Critical Points and paths of Non-Linear System, Limit Cycles, 2nd Order BVP and their applications.

FACULTY OF SCIENCE

M.SC (MATHEMATICS)

PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME (PSO) & COURSE OUTCOME (CO)

SEMESTER – 3

Functional Analysis

- Understand the concepts of Normed Linear Spaces, Banach Spaces, bounded and Continuous linear operators, Dual Spaces, Hahn-Banach Theorem and Reflexive Spaces.
- Understand concepts of strong and weak convergence, Inner product spaces, Hilbert Spaces, Hilbert adjoint Operators, Self Adjoint, Unitary Normal, Positive and projection Operators.

Analytical Mechanics and Calculus of variation

- Learn about Euler's Equations for one dependent and several dependent variables, Iso Perimetric problems, Free and constrained system, D'Alembert's principle, Potential, Gyroscopic and Dissipative Forces.
- Learn about Hamilton's Variables, Jacobi's Equations, Canonical Transformations.

Elasticity

- Understanding concepts of Tensor Algebra, Tensor Analysis, Analysis of Strain, Analysis of Stress, Stress Quadric of Cauchy, Mohr's Circle, Equation of Elasticity, Elasticity Moduli for Isotropic Media, Saint Venant's principle.

Fluid Mechanics – I

- Learn about kinematics of fluid in motion, stream, path and streak lines, Reg. holds transport theorem, velocity potential, Equation of motion, Irrotational flow, Uniqueness Theorems.
- Learn about stress components in a real fluid, Navier-Stokes equations of motion, Plane Poiseuille and Couette Flow's, Steady flow in circular pipe, Steady flow through tubes of uniform cross-section.

Integral Equations

- Understand concepts of Integral equations, inner product of function, Fredholm alternative, Method of successive approximations, Symmetric kernels, Bilinear Form, Hilbert-Schmidt Theorem, Abel Integral Equation, Cauchy's Principal value, Solution of Hilbert type, Singular Integral Equation

FACULTY OF SCIENCE

M.SC (MATHEMATICS)

**PROGRAMME OUTCOME (PO), PROGRAMME SPECIFIC OUTCOME
(PSO) & COURSE OUTCOME (CO)**

SEMESTER – 4

General Measure and Integration Theory

- Understand the concept of Measures, Outer measures, Measurable functions, Simple Functions, Measure spaces, Integration w.r.t. a measure, product measures, signed measures, integration over locally compact spaces.

Partial Differential Equations

- Learn about PDE of K^{th} order, IVPs, Transport Equations, Harmonic Functions, Mean Value Formulae's, Green's Function, Heat Equations, Wave Equation, Non-Linear First Order PDE, Conservative Laws, Representation of solutions, Fourier Transform, Laplace Transform.

Mechanics of Solid

- Understand concepts of two dimensional problems, solution of biharmonic equations, First and 2nd BVP in plane elasticity, Waves, Elastic Surface Waves, Extension, Torsion, Variational Methods.

Boundary Value Problems

- Learn about applications of ODE, IVP, BVP, Green's function, Application to PDE, Dirichlet and Neumann Problems, Poisson's Integral Formula, Integral Transform methods, Mixed BVP's, Integral Equation perturbation methods, Hydrodynamics, Stokes Flow, Oseen Flow, Theory of Diffraction.

Mathematics Aspects of Seismology

- Learn about progressive waves, Harmonic waves, Planes Waves, D'Alembert's Formula, Dispersion, P and S waves, Reflection and Refraction of plane P, SV, SH waves at an interface, Rayleigh waves, Love Waves and Stoneley waves, 2-D Lamb's Problem, 3-D Lamb's Problem, Spherical Waves, Introduction to Seismology.