

**Program Outcome
&
Course Outcome
(2019-2020)**

Program Name	Course Name	Course Code	Course Outcome
B.A.			The B.A. programme in the college is affiliated to Chaudhary Bansi Lal University, Bhiwani ,Haryana and follows the syllabus prescribed by the university. B.A Programme is a famous course in our University. Course allows you to study combination of subjects and is mostly opted by students. B.A Programme have subjects like English ,Hindi, Political science, Economics, History, Geography , Mathematics, Environmental Science and Computer Application . The Outcomes of the Programme are as follows:- 1. After completion of B.A. (Pass Course) students acquire knowledge in the field of Social Science , Literature and Humanities which make them sensitive and sensible enough. 2. The B.A. Graduates will be acquainted with the Social , Economical, Historical , Geographical ,Political , Ideological and Philosophical tradition and thinking. 3. The Program also empowers the Graduate to appear for various Centre and State level Competitive examinations or choose the post graduate programs of their choice. 4. The B.A. programme enables the students to acquire the knowledge with human values framing the base to deal with various problems in life with courage and humanities .
B.A.	Geography of India	101	After the completion of the course, Students will be able to 1. Identifying and explaining the Indian Geographical Environment, from global to local scales. 2. Applying geographical knowledge to everyday living. 3. Applying knowledge of global issues to a unique scientific problem. 4. Showing an awareness and responsibility for the environment and India. 5. Evaluating the impacts of human activities on natural environments special reference to India.
B.A.	physical geography 1	103	103 Physical Geography - Understand the theories and fundamental Concepts of Physical Geography. - Acquire Knowledge about earth is tectonic and structural evolution. - Gain Knowledge about earth Interior . - Develop and Idea about concepts of plate electronic and resultant landforms. - Understand the process of erosion, deposition and resulting landforms.

B.A.	Physical geography II	201	After the completion of the course, Students will be able to 1. Understand the physical basis of the natural greenhouse effect, including the meaning of the term radioactive forcing. 2. Know something of the way various human activities are increasing emissions of the natural greenhouse gases, and are also contributing to sulphate aerosols in the troposphere. 3. Demonstrate an awareness of the difficulties involved in the detection of any unusual global warming „signal“ above the „background noise“ of natural variability in the Earth's climate and of attributing (in whole or in part) any such signal to human activity. 4. Understand that although a growing scientific consensus has become established through the IPCC, the complexities and uncertainties of the science provide opportunity for climate sceptics to challenge the Panel's findings. 5. On successful completion of this course, students should be able to understand the mean global atmospheric circulations and disturbances, world climate systems, climatic variability and change.
B.A.	Physical geography II	201	103 Physical Geography - Understand the theories and fundamental Concepts of Physical Geography. - Acquire Knowledge about earth is tectonic and structural evolution. - Gain Knowledge about earth Interior . - Develop and Idea about concepts of plate electronic and resultant landforms. - Understand the process of erosion, deposition and resulting landforms.
B.A.	Human geography	203	203 Human Geography - v Gain Knowledge about Major themes of Human Geography - v Understand the approaches and process of Human Geography as well as diverse pattern of habitat and adaptation. - v Develop an idea about space and society.

B.A.	Economic geography	301	301 Economic Geography v Understand the concept of Economic activity, factors affecting location of Economic activities. v Acquire knowledge about different type of primary, secondary and tertiary activates. v Map and interpret data on production economic indices transport networks and flows.
B.A.	Introduction To Remote Sensing, GIS and Quantitative Methods	303	303 Introduction To Remote Sensing, GIS and Quantitative Methods v Have knowledge of the principles of Remote sensing, sensor resolutions and image interpretation. v Learn about geographic information system and GPS.
B.A.	English compulsory	2001101	Will compendium and appreciate prose writings in English . Will grasp and recognise phonetic symbols. Will understand the difference between Received Pronunciation and Indian English. Will have a fair knowledge of basics of grammar Will improve vocabulary. Will improve writing skills.
B.A.	English compulsory	2001103	Students will be able to appreciate various forms of poetry and literary devices used therein. Extensive study of grammar will help in correct usage of language. Will enrich the vocabulary of the students Will improve spoken English with correct pronunciation and accent

B.A.	English compulsory	2001104	Will be able to interpret and appreciate One Act Plays and their reflection on society. Will be able to understand literary devices and their applicability in literature Will improve spoken English with sufficient knowledge of stress and tone. Will improve writing skills.
B.A.	English compulsory	2001105	Will enrich the sufficient knowledge of English novel and its various forms. Will have good understanding of techniques used in novel writing Will have knowledge of Indian novelists in English. Will learn the art of precis writing. Will have improved knowledge of grammar.
B.A.	English compulsory	2001106	Will get familiar with English literature . Will learn about Shakespearean age,language and works. Will learn the art of correspondence in English through e mail and letter writing. Will improve vocabulary. Will improve comprehension and writing skills in English.
B.A.	Sanskrit Elective	2001133	CO1: Appreciate the development of Sanskrit Literature. CO2: Negotiate texts independently with grammatical analysis and poetic excellence. CO3: Acquainted with the work; Hitopadesha of the Great poet Vishnu Dutt Sharma. CO4: Know about origin and development of different types of Mahakavya and Geetikavya. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction CO7: Sangya Prakarana,Shandhi prakarna and Procedures of formation of Sanskrit words. CO8: Vagvayahara in Sanskrit

B.A.	English compulsory	2001201	Will enrich the students ' knowledge of Indian culture and traditions. Components of grammar will improve correct usage of language. Transcription of twoor three syllabi words will improve pronunciation of the students. Will improve their writing skills. Will improve their vocabulary.
B.A.	Sanskrit Elective	2001233	CO1: Appreciate the development of Sanskrit Literature. CO2: Negotiate texts independently with grammatical analysis and poetic excellence. CO3: Acquainted with the work ; Kadambari and Dootvayakama of the Great poet Banbhatt and Vyasa respectively. CO4: Know about origin and development of different types of Mahakavya and Geetikavya. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction. CO7: Formation of Sanskrit shlokas in their own emotions, Procedures of formation of Sanskrit words.
B.A.	Sanskrit Elective	2001333	CO1: Students would be able to know the origin and development of Sanskrit Prose literature. CO2: Know about the great literature of Ramayana by Maharashi Balmiki. CO3: They will be able to analysis compound formation. CO4: The course also seeks to help students negotiate texts independently. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction. CO7: Vagvayahara in Sanskrit and Samasa Prakarana , Procedures of formation of Sanskrit words.
B.A.	Sanskrit Elective	2001433	CO1: Students would be able to know the origin and development of Sanskrit Prose literature. CO2: Know about the great literature of Bhagavat Gita by Maharashi Vedvayas. CO3: They will be able to analysis compound formation. CO4: The course also seeks to help students negotiate texts independently. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction. CO7: Maheshwar Sutra and formation of rules of Ashtadhyaya in Sanskrit, Procedures of formation of Sanskrit words.

B.A.	Sanskrit Elective	2001533	CO1: Students would be able to know the origin and development of Sanskrit Prose literature. CO2: Know about the great literature of Abhigyanashakuntlam by Mahakavi Kalidasa. CO3: They will be able to analysis compound formation. CO4: The course also seeks to help students negotiate texts independently. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction. CO7: formation of words in Satripratiya in Sanskrit, Vagvayahara in Sanskrit, introduction about vedic literature and Procedures of formation of Sanskrit words.
B.A.	Sanskrit Elective	2001633	CO1: Students would be able to know the origin and development of Sanskrit Prose literature. CO2: Know about the great literature of Abhigyanashakuntlam by Mahakavi Kalidasa. CO3: They will be able to analysis compound formation. CO4: The course also seeks to help students negotiate texts independently. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction. CO7: Knowledge of Alankaras in Sanskrit, Vagvayahara in Sanskrit, introduction about classical literature and Procedures of formation of Sanskrit words.
B.A.	Algebra	BM111	This course will enable the students to: 1. Determine rank of a matrix, eigen values, eigen vectors, characteristic equation and characteristic polynomial of square matrices. Understand unitary and orthogonal matrices and to solve related problems. 2. Find solution of homogeneous and non-homogeneous system of linear equations using matrices. Determine relation between roots and coefficients of a general polynomial equation. 3. The solution of the cubic and bi-quadratic equations.
B.A.	Calculus	BM112	This course will enable the students to: 1. Calculate the limit of functions, examine the continuity of functions, understand differentiability of different type of functions, successive differentiation of functions and series expansions. 2. Understand concepts of tangents, normals, asymptotes, curvature, evolutes and involutes of a curve; the geometrical meanings of these terms and to solve related problems 3. Determine singular points of a curve and their types. To understand rectification of curves and to apply the reduction formulae. 4. Determine area bounded by curves and volumes and surface area of solids formed by revolution of curves

B.A.	Solid geometry	BM113	This course will enable the students to: 1. To classify the general equation of second degree and tracing of conics 2. Can deal with the problems related to cones, cylinders and spheres 3. Can deal with the conicoids and envelope related problems 4. Handle the problems related to the paraboloids and other sections of conicoids 5. Do the reduction of the second degree equation in 3 coordinates
B.A.	Trigonometry and Number theory	BM121	This course will enable the students to: 1. Deal with the concept of divisibility , GCD ,LCM and the concepts of congruence 2. Handle the problems related with residue system and the quadratic residue system 3. Solve the problems related De Moivre's theorems and its application 4. Understand the concepts of circular, hyperbolic , logarithmic functions of complex variables.
B.A.	Ordinary Differential Equation	BM122	This course will enable the students to: 1. Analyze real world scenarios to recognize when ordinary differential equations (ODEs) or systems of ODEs are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology, if appropriate) in order to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate the results. 2. Recognize ODEs and system of ODEs concepts that are encountered in the real world, understand and be able to communicate the underlying mathematics involved to help another person gain insight into the situation. 3. Work with ODEs and systems of ODEs in various situations and use correct mathematical terminology, notation, and symbolic processes in order to engage in work, study, and conversation on topics involving ODEs and systems of ODEs with colleagues in the field of mathematics, science or engineering.

B.A.	Vector calculus	BM123	This course will enable the students to: 1. Understand and solve problems related to scalar and vector product of vectors. Learn vector differentiation and directional derivatives and their problem solving. 2. Learn gradient, divergence and curl operators. Apply knowledge and these tools in problem solving. 3. Understand vector identities, Laplacian operator. Learn vector integration and line integral. Solve problems using these concepts. 4. Learn surface and volume integral formulations and their evaluation. Prove Gauss Divergence, Green's and Stoke's theorems. Realize importance of Green, Gauss and Stokes' theorems.
B.A.	Advance Calculus	BM231	This course will enable the students to: 1. Understand and to prove Rolle's Theorem, mean value theorems and their geometrical interpretations. To determine indeterminate forms. 2. Learn conceptual variations while advancing from one variable to several variables in calculus, limit and continuity, partial differentiation of such functions. To understand composite functions, homogeneous functions and to solve related problems. 3. Understand differentiability of real valued functions of two variables and to prove associated results. To determine maximum and minimum of functions of two variables and to apply multivariable calculus in optimization problems. 4. Evaluate double and triple integrals. To learn about Dirichlet integrals, Beta and Gamma functions and to solve related problems.
B.A.	Partial Differential Equation	BM232	The course will enable the students to: 1. Apply theory of PDEs to determine integral surfaces through a given curve and to find orthogonal surfaces. To understand compatible systems and Charpit method, Jacobi method methods for solving PDEs. To learn techniques of solving second order PDEs. 2. This course will focus on the formulation of first and second order partial differential equations(PDEs) for three basic types of hyperbolic, parabolic and elliptic equations. The concentration is on concrete examples and problem solving of PDEs which include heat, wave and Laplace' s equation that arise in various physical systems 3. Learn classification of second order partial differential equations, their canonical forms, and methods of solving those. Find characteristic equations and curves. Apply this knowledge to solve problems of science and society. 4. Model physical phenomena using partial differential equations such as the Laplace, heat and wave equations and to solve these equations. Learn solving non-linear equations by Monge's method. Apply these methods as a tool for modelling and solving real world problems.

B.A.	Statics	BM233	This course will enable the students to: 1. Understand the concepts of composition and resolution of forces, parallel forces , moments and couples 2. Solve the problems based on analytical conditions of equilibrium of coplanar forces, friction and center of gravity 3. Understand the concepts of virtual work , forces in 3d and poinsotes central axis 4. Deal with wrenches, null lines and planes stable and unstable equilibrium.BM233
B.A.	Sequence and Series	BM241	This course will enable the students to: 1. Understand basic concepts of real number system and set theory. Preliminary results on neighbourhood of a point, interior and limit points, open sets, closed sets etc. 2. Learn real sequences, their limit, boundedness and convergence. To find convergence and divergence of a sequence. To understand Cauchy sequence, subsequence and to prove related theorems. 3. Understand infinite series and its basic properties. Attain skills to determine convergence of a series of real numbers by applying various tests. 4. Understand absolute and conditional convergence of alternating series and related tests. Learn the basic concepts of pointwise convergence and uniform convergence of sequence and series of functions.
B.A.	Special Function and Integral Transformation	BM242	This course will enable the students to: 1. Understand singular points of a differential equation and to solve such differential equation by power series method. Learn Hypergeometric differential equation, Hypergeometric function and its properties. 2. Know Bessel's differential equation and its solution. Understand recurrence relations, generating function and othogonality of Bessel's function. Understand Bessel integral. Attain skills to make use of Bessel functions in scientific problem solving. 3. Familiarise with Legendre's differential equation and its solution in the form of Legendre functions. Understand recurrence relations, generating function and othogonality of Legendres function, Rodrigues' formula. Apply knowledge in problem solving. 4. Know Hermite's differential equation and its solution in the form of Hermite functions. Understand recurrence relations, generating function and othogonality of Hermite function, Rodrigues' formula. Attain skill to apply these tools for investigation and solution of problems 5. Know about Laplace transforms and its properties in detail and to apply those in solving differential equations. 6. Familiarize with Fourier transforms of functions,

			properties of Fourier transform, inverse Fourier transforms and relation between Laplace and Fourier transforms. Develop skill of applying Fourier transforms to solve differential equations.
B.A.	Programming in C and Numerical Methods	BM243	This course will enable the students to: 1. Familiarize with C programming language. Learn elements of C, data types, constants and variables, operations and operators, statements and expressions. Use these tools for writing C programs. 2. Learn Input/ Output functions in C, to write reading and writing statements in C, decision making statements and structures in C. Apply this knowledge to use as tools in writing C programs. 3. Understand loops and arrays, their types, characteristics and structures. Attain the skill to write C programs which involve arrays and multiple iterations. 4. Learn strings of characters, their declaration, input/ output, operations on strings and functions which handle strings. Learn declaration, types and calling of user defined functions in C. 5. Understand errors and their types. Learn techniques to obtain numerical solutions of algebraic and transcendental equations 6. Attain numerical skills to find solutions of system of linear equations by different methods. 7. Learn different interpolation and extrapolation methods and their applications. Apply numerical methods to obtain derivatives. 8. Understand numerical methods for evaluating integrals and solving differential equations and to develop skill of applying these methods for future use in scientific problems.
B.A.	Real Analysis	BM351	This course will enable the students to: 1. Learn basic theory of Riemann integration. Learn fundamental theorem and mean value theorem of integral calculus. 2. Understand improper integrals and to have knowledge to test their convergence. Understand integral as a function of a parameter. Apply this knowledge for problem solving. 3. Understand concepts of metric spaces, sub spaces and their properties. Learn open, closed and bounded sets, interior and limit points, Cauchy sequence and completeness. 4. Learn dense sets, compact and separable metric spaces and related results. Learn important theorems viz. Baire's category theorem, Banach contraction principle, BolzanoWeierstrass property,

			HeineBorel theorem. Use this basic knowledge for life -long learning purposes.
B.A.	Groups and Rings	BM352	The course will enable the students to: 1. Recognize the mathematical objects called groups, their elementary properties, order of a group, subgroup, cyclic groups and their properties. 2. Understand the notions of cosets, normal subgroups, and quotient groups. Know homomorphisms, isomorphisms and their properties and to prove three isomorphism theorems. 3. Learn about ring, subring, integral domain, field and ideal and related results. 4. Understand quotient rings, Euclidean ring, ring homomorphisms, ring isomorphisms and fundamental isomorphism theorems.
B.A.	Dynamics	BM353	This course will enable the students to: 1. Understand the concepts of velocity and acceleration along the radial, transverse, tangential and normal directions. SHM and elastic string 2. Deal with the problems related to mass momentum and force. Newton's laws of motions and work power and energy 3. Understand the concepts of motion , projectile motion and angular velocity 4. Understand the concepts of motion of a rigid body Kepler's law , motion in 3d etc
B.A.	Real and Complex Analysis	BM361	This course will enable the students to: 1. Deal with jacobians beta and gamma function , double and triple integral dirichlet's integral and change of order in double integration 2. Understand the concepts of fourier's series half range series and change of intervals 3. Understand the extended complex plane Visualize complex numbers as points of $\mathbb{R}^2$ and stereographic projection of complex plane on the Riemann sphere. Know De Moivre's Theorem and its Applications. Learn about trigonometric, circular and hyperbolic functions and their properties Understand the significance of differentiability and analyticity of complex functions leading to the CauchyRiemann equations. Apply knowledge to solve related problems. 4. Learn the concepts of mapping by elementary functions , conformal mapping etc.

B.A.	Linear Algebra	BM362	This course will enable the students to: 1. Understand the concepts of vector spaces, subspaces, bases and their properties; linear transformations and their rank and nullity and to use those concepts for problem solving. 2. Learn to determine eigen values, eigen vectors and characteristic polynomial of linear transformations and their further use in investigation and solution of problems. 3. Have knowledge of inner product spaces, orthogonalization and diagonalization of matrices/ linear transformations and to apply that in further learning and for scientific applications. 4. Learn adjoint operation, Hermitian, unitary, normal and triangular forms of linear transformations and related problem solving.
B.A.	Numerical Analysis	BM363	This course will enable the students to: 1. Understand errors and their types. Learn techniques to obtain numerical solutions of algebraic and transcendental equations. 2. Attain numerical skills to find solutions of system of linear equations by different methods. 3. Learn different interpolation and extrapolation methods and their applications. Apply numerical methods to obtain derivatives. 4. Understand numerical methods for evaluating integrals and solving differential equations and to develop skill of applying these methods for future use in scientific problems.
B.A.	हिंदी अनिवार्य	HI-01	1. मध्यकालीन हिंदी कविता को समझ पाना। 2. कबीरदास, सूरदास, तुलसीदास, बिहारी, धनानंद जैसे महान कवियों को पढ़कर उनके काव्य सौष्ठव का ज्ञान प्राप्त होना। 3. हिंदी साहित्य के आदिकाल के नामकरण एवं परिस्थितियों को समझ पाना। 4. हिंदी साहित्येतिहास की लेखन परंपरा का ज्ञान होना। 5. काव्य- शास्त्रीय ज्ञान से परिचित होना तथा काव्य के विभिन्न तत्वों (रस, छंद, अलंकार, गुण, शब्द -शक्ति आदि)को भलीभाँति समझ पाना।
B.A.	हिंदी अनिवार्य	HI-02	1. जयशंकर प्रसाद जैसे महान नाटककार की नाट्य कला को समझ पाना। 2. भक्तिकालीन परिस्थितियों एवं काव्य प्रवृत्तियों का ज्ञान होना। 3. भाषा के विविध रूपों (बोली, मानक भाषा, राष्ट्रभाषा, राजभाषा आदि को समझ पाना और उनमें अंतर कर पाना। 4. व्यावहारिक हिंदी का ज्ञान प्राप्त होना। 5. हिंदी भाषा की वर्तनी संबंधी अशुद्धियों को समझकर उनका समाधान कर पाना। 6. मुहावरे एवं लोकोक्तियों के ज्ञान द्वारा भाषिक-भंगिमा का पैदा होना।

B.A.	हिंदी अनिवार्य	HI-03	1.आधुनिक हिंदी कविता की सामान्य प्रवृत्तियों को समझ पाना । 2.हिंदी साहित्य के रीतिकालीन काव्य की पृष्ठभूमि, परिस्थिति एवं नामकरण का ज्ञान होना । 3.रितिसिद्धि, रीतिबद्ध और रीतिमुक्त कवियों के काव्य वैशिष्ट्य का बोध होना । 4.रीतिकालीन काव्य की उपलब्धियों का ज्ञान होना। 5.प्रयोजनमूलक हिंदी से परिचित होना तथा आधुनिक जीवन के लिए इंटरनेट की महत्ता को समझ पाना । 6.अनुवाद की उपयोगिता को समझ पाना।
B.A.	हिंदी अनिवार्य	HI-04	1.पाठ्य पुस्तक में संकलित कहानियों के लेखकों के साहित्यिक परिचय तथा कहानियों के वस्तु पक्ष और कला पक्ष को जान लेना। 2.कहानी की रचना प्रक्रिया का ज्ञान होना। 3. हिंदी साहित्य के आधुनिक काल को समझ पाना और आधुनिक काल की परिस्थितियों का बोध होना । 4.साहित्य की विविध विधाओं (उपन्यास ,कहानी ,नाटक, निबंध आदि) की विकास यात्रा को समझ पाना। 5. पारिभाषिक शब्दावली का अध्ययन कर व्यावहारिक जीवन में उसका प्रयोग कर पाना।
B.A.	हिंदी अनिवार्य	HI-05	1.आधुनिक काल के काव्य की सामान्य प्रवृत्तियों को समझ पाना। 2.धर्मवीर भारती, अज्ञेय, नागार्जुन ,नरेश मेहता ,रघुवीर सहाय कुँवर नारायण आदि आधुनिक काल के कवियों के साहित्यिक परिचय और उनके काव्य सौष्ठव का ज्ञान होना। 3. आधुनिक काल के विविध काव्य-युगों एवं उनकी काव्य प्रवृत्तियों का ज्ञान होना। 4. पत्र लेखन की कला में निपुण होना । 5.संक्षेपण एवं पल्लवन करने में समर्थ होना।
B.A.	हिंदी अनिवार्य	HI-06	1.आचार्य रामचंद्र शुक्ल, बालमुकुंद गुप्त ,हजारी प्रसाद द्विवेदी जैसे निबंधकारों के निबंधों को पढ़कर निबंध लिख सकना । 2.महादेवी वर्मा के संस्मरणों के माध्यम से स्वानुभूति को सृजनात्मकता तक ले जाने की क्षमता का विकास होना। 3. हरिशंकर परसाई के व्यंग्य लेखों के माध्यम से समाज की अनेक विद्रूपताओं का ज्ञान होना। 4. हरियाणवी भाषा एवं साहित्य के इतिहास के माध्यम से लोक साहित्य का ज्ञान अर्जित होना । 5.हरियाणवी भाषा की प्रमुख बोलियों को समझना तथा सांग परंपरा का ज्ञान होना।

			6. हरियाणवी गद्य साहित्य के माध्यम से हरियाणवी भाषा की अच्छी समझ होना । 7. फीचर लेखन एवं शीर्षक संरचना को समझना तथा लिख पाना।
B.A.	Indian constitution (1st sem)	2001118	This paper aims to develop understanding about the basics of Indian constitution including Preamble, fundamentals rights, fundamentals duties, President, Union executive, Union legislative & Indian judiciary system. It would benefit students in knowing the Panchayati Raj institutions in detailed manner.
B.A.	Indian politics (2nd sem)	2001218	This paper will benefit students in getting knowledge of Indian politics mainly about Federalism, relations between the Union & the states, demand of state autonomy, emerging trends in Indian Federalism, election commission and many other significant topics. It is an essential paper to know the working of Indian political party system and emerging trends & challenges before political system.
B.A.	Principles of Political Science-I (3rd sem)	2001318	This paper aims to help students in understanding the basic principles of political science. The main focus would remain on learning the definition, nature & scope of political science along with knowledge of state, its elements and various theories. Students will be competent to understand the concepts of sovereignty and its various theories. The detailed study of welfare state would also be provided.

B.A.	Principles of Political Science-II	2001418	This course will benefit students in getting knowledge of principles of Political Science Including concept & theories of rights, Liberty, equality, social change & development. It is a good paper to develop the understanding of RTI& Consumer Protection Act.
B.A.	Comparative Politics (5th sem)	2001518	This paper aims to develop the understanding of students regarding various dimensions of comparative politics including its traditional & modern concerns. Various approaches to the study of comparative politics would also be learned along with constitutionalism and constitutional structure around the world from comparative perspective.
B.A.	Comparative constitution of UK & USA (6th sem)	2001618	This paper would benefit students in knowing the comparative constitutions of United Kingdom and United States of America. The main focus would remain in learning the executive, legislation & judiciary system of UK & USA along with understanding of their electoral processes, voting behaviour and recent trends of working system prevalent over there.
B.A.	Microeconomics	Paper code 2001109 and 2001209	Upon completion of this course, the students will be able to understand the fundamentals and basic terminologies of economics. Get an understanding of basic forces of demand and supply and how they effect the working of product and factor markets. Students also gets a framework of learning about consumer and producers behaviour.

B.A.	BA Hindi	अनिवार्य हिंदी	1. हिंदी भाषा एवं उसके साहित्य के मूलभूत अवधारणाओं को समझ पाना 2. हिंदी भाषा तथा उसकी गोलियों के महत्व को समझ पाना 3. हिंदी साहित्य तथा उसके विकास के विभिन्न पक्षों को समझ पाना 4. हिंदी की शब्दावली का विभिन्न क्षेत्रों में प्रयोग कर पाना 5. हिंदी साहित्य के दार्शनिक सिद्धांतों को समझ पाना 6. साहित्य और समाज के आपसी संबंधों का मूल्यांकन कर पाना
B.A.	बी ए प्रथम वर्ष प्रथम सेमेस्टर	अनिवार्य हिंदी	1. मध्यकालीन हिंदी कविता को समझ पाना 2. कबीरदास, सूरदास, तुलसीदास, बिहारी, घनानंद जैसे महान कवियों को पढ़कर उनके काव्य सौष्ठव का ज्ञान प्राप्त होना 3. हिंदी साहित्य के आदिकाल के नामकरण एवं परिस्थितियों को समझ पाना 4. हिंदी साहित्य इतिहास की लेखन परंपरा का ज्ञान होना 5. काव्य शास्त्रीय ज्ञान से परिचित होना तथा काव्य के विभिन्न तत्वों (रस, छंद, अलंकार, गुण, शब्द शक्ति आदि) को भलीभांति समझ पाना
B.A.	Macroeconomics I	Paper code 2001309	Upon completion of the course the students will be able to understand the concepts and issues of an economy at national level and associate the current economic phenomenon with existing theory and put their view on contemporary economic issues. It enhances the economic knowledge of students about various concepts like national income, consumption, investment and their importance in solving national economic issues.
B.A.	Macroeconomics II	Paper code 2001409	Upon completion of this course the students will be able to understand the basics about money, its functions and also the working of the central bank i.e RBI. They will be able to apply the principles of macroeconomics in explaining the behaviour of macroeconomic variables like inflation, unemployment, investment etc at national as well as global level. They will be able to understand the objectives and working of fiscal and monetary policies.

B.A.	Development economics	Paper code 2001509	Upon completion of this course the students will be able to understand the determining factors and barriers of growth and development . Get a better understanding of the various economic features of Indian economy. They will be able to understand the economic planning adopted by India, five year plans , NITI Aayog, new economic policy and LPG.
B.A.	International Economics	Paper code 2001609	Upon completion of this course the students will be able to describe the theories of international trade m, analyse the impact of international trade and evaluate the impact of globalisation. Students will be able to understand the relation between foreign trade and economic growth , the process of determining the exchange rate and its impact on foreign trade. Students will get insight about the international agencies like IMF, World Bank, WTO and SAARC
B.A.	History	2001232	As a history student will learn about the historiographical trends, interpretation of the historical sources of ancient India as well. They can acquire knowledge about the Vedic period and the rise of Jainism & Buddhism culture in ancient times of India. Student will learn and analyze about the transition from historic centuries to the early medieval. They'll be able to delineate changes in the realm of polity and culture; puranic religion, the growth of vernacular languages and newer forms of art and architecture.
B.A.	History	2001232	Students will be able to identify the major political developments in the history of India during the period between the twelfth and the seventeenth century. Outline the changes and continuities in the field of culture, especially with regard to art, architecture, bhakti movement and Sufi movement. Delineate the development of trade and urban complexes during this period.

B.A.	History	2001332	The student will be able to trace the British colonial expansion in the political contexts of eighteenth century India. They will learn about the changes in society, politics, religion and economy during this period. They will also acquire knowledge about the freedom struggle. India Quest for independence and nation building are interwoven script of History, debated most widely at global level with various angles. Indeed, India's national movement has vast and divergent ideological base with inner contradictions.
B.A.	History	2001432	As a history student will learn about the historiographical trends, interpretation of the historical sources of Haryana as well. They can acquire knowledge about the Vedic period and the historicity of the battle of Mahabharata. Outline the Changes and continuities in the field of culture, especially with regard to art, architecture, freedom struggle and national movement.
B.A.	History	2001532	Student will acquire knowledge about the evolution of human society, and transformation of ancient civilizations like Mesopotamia, Greece, Egyptian, Roman and medieval Europe. They can acquire knowledge about the origin, features, nature and class composition of various societies. They can compare to each and other among the several societies of the world.
B.A.	History	2001632	This course aims to provide an understanding of an era of shifting history from eurocentric to world. It discusses the turbulent times when totalitarianism rose an alternative to democratic and liberal ideal and also the growing desire for peace through formation of organizations such as United Nations.

Program Name	Course Name	Course Code	Course Outcome
B.Com.			After completing three years for Bachelors in Commerce (B.Com) program, students would gain a thorough grounding in the fundamentals of Commerce and Finance. The commerce and finance focused curriculum offers a number of specializations and practical exposures which would equip the student to face the modern-day challenges in commerce and business. The all-inclusive outlook of the course offer a number of value based and job oriented courses ensures that students are trained into up-to-date. In advanced accounting courses beyond the introductory level, affective development will also progress to the valuing and organization levels
B.Com.	हिंदी अनिवार्य	HI-01	1. पत्र, प्रतिवेदन, प्रारूपण, टिप्पण के लेखन आदि को समझ पाना। 2. पत्राचार के सिद्धांत के व्यावहारिक पक्षों से अवगत होना । - अनुवाद की परिभाषा, प्रवृत्ति एवं महत्व को समझ पाना। 3. मुहावरे एवं लोकोक्तियां का प्रयोग कर भाषा को प्रभावी बना पाना । 4. मानक भाषा के महत्व को समझ पाना। 5. समानार्थी, विलोम, अनेकार्थी, वाक्यांश के लिए एक शब्द का उचित प्रयोग कर पाना। 6. प्रभावी संप्रेषण कौशल का विकास कर पाना।
B.Com.	Hobby Club	G.E.	Engaging in a hobby leads to acquiring substantial skills, knowledge and experience. The objective of the Hobby Clubs is to inspire students to pursue a hobby and explore their potential in areas like dance, music, theatre, photography, painting, gardening, etc
B.Com.	SPSS	19BC-407	• Students will be comfortable using SPSS as a data analysis tool • Understand how to learn to use new features of SPSS • Understand how to acquire samples • Understand how to enter and recognize information within SPSS • Students will be able to choose charts to successfully highlight their research results

B.Com.	Business Statistics	19BC-404	This paper explains the features and methods of statistics, to apply the appropriate sampling survey method and collect data. It calculates an appropriate measure of central tendency, measure of dispersion. It provides exposure on calculation of measures of Correlation, calculation of Regression. It does acquaint students with the concept of index number; introduce the students about the concept of probability and knowledge about time series analysis
B.Com.	Marketing Management	19BC-403	• To understand the marketing concepts and marketing environment. • To acquire knowledge on product planning and product life cycle. • To gain knowledge on choice of distribution channels and pricing strategies. • To understand the various methods of promotion. • To understand the peculiarities of marketing, marketing of agricultural products and functions of commodity market
B.Com.	Corporate Law	19BC-402	This paper is beneficial for students to understand the provisions of Company Act 2013 .It familiarize the students on capital structure and the procedure of share allotment, to attain knowledge on rights and duties of shareholders, members and types of meetings in the companies. It makes familiar with rules and regulations relating to company's all aspects. It acquires the knowledge on modes and procedure of winding up of companies.
B.Com.	Corporate Accounting-2	19BC-401	• To compute the final accounts for a corporate group like banking companies. • To compute the final accounts for insurance companies. • To give a detailed idea about internal reorganization of companies. • To apply the knowledge gained in preparation of final accounts of amalgamated companies. • To study the procedure followed for the liquidation of companies.
B.Com.	Computer Accounting System(CAS)	19BC-306	Computer Accounting System is very important for the students of commerce as it contains all the practical knowledge of accounting software, which is must in the current environment. At the end of this course the student will be able to : • Understand the Computerized Accounting, its advantages and disadvantages. • Explain about various accounting softwares available and considerations before sourcing accounting software. • Create computerized accounts of any organization into Tally, Students will have all the practical knowledge how to configure a new company, how to create ledgers, how to post business transactions. • Print reports and final accounts in the accounting software. The learner will get all the practical

			knowledge of the software, which is required to get the job in the market.
B.Com.	Environmental Science	19BC-304	• To give the students an understanding of natural resources and ecosystems • To create awareness among students about the importance of biodiversity and its conservation. • To create awareness among students about the consequences of pollution and possible solutions to avoid pollution • To familiarize students with human rights • To examine the application of Human rights in the field
B.Com.	Human Resource Management	19BC-303	This paper is aiming the importance of human resources managers, HR practices and its influencing factors. It provides students an understanding of a range of pay practices and row and when each of these can influence employee behavior and human capital to affect organizational performance. This paper helps to improve the quality of work, provides the opportunities for personal development healthy relationship between employee and employer, promoting teamwork and development of human capital.
B.Com.	Corporate Accounting-1	19BC-301	• To make the students familiarize with the rules relating to issues of shares and debentures. • To make the students familiarize with the rules relating to underwriting of shares. • To familiar with computation of the financial results of companies. • To familiar with preparation of Investments account. • To familiar with computation of Insurance claims.

B.Com.	Business Mathematics	19BC-203	This course will enable the students to: 1. Understand the concepts of matrices , determinants and the inverse of matrices 2. Understand the concepts of compound interest and annuities 3. Understand the concepts of differentiation , maxima and minima 4. Understand the concepts of permutations and combinations and sequence and series.
B.Com.	Financial Accounting-2	19BC-201	• To gain knowledge on preparation of accounts in Hire purchase and Installment. • To acquire the skill to prepare different types of branch accounts. • To transform the accounting knowledge in preparing departmental accounting. • To familiar with the procedure involved in the dissolution of partnership firms. • To familiarize students with the application of important accounting standard.
B.Com.	Fundamentals of Computer	19BC-105	At the end of this course the student will be able to : • Understand the basic terminology of hardware and software components of a computer system and • Understand the working of input/output device and storage devices also the anatomy of the digital computer. • Understand the Operating System, its types and functions. • Use DOS internal & external commands. • Use MS-Word & MS-Excel practically. • understand data communication and basic terminology along with its hardware components. • understand and characterize various types of computer networks along with an overview of the standard OSI and TCP/IP reference models that illustrates the network architecture
B.Com.	Business Management	19BC-102	The syllabus of this paper includes a number of topics like business ethics, market operations research, organizational behavior, strategic management etc. This paper also imparts knowledge that helps students develop managerial skills and leadership qualities. This subject makes a base for the students which are beneficial for them at the time of internship and management training.

B.Com.	Financial Accounting-1	19BC-101	• To equip the students with the skill of preparing accounts and financial statement for various types of business units other than corporate undertakings. • To introduce single entry system of accounts. • To enable students with the skills to prepare royalty accounts. • To understand the system of preparing consignment accounts. • To familiar with the procedure involved in the farm accounts.
B.Com.	English	19 BC-104	Will be able to comprehend and appreciate prose and story writing in English and culture and tradition reflected therein. Will be able to appreciate poetry and various poetic devices. Basic knowledge of grammar Will help in correct usage of English language. Will improve listening skills. Will improve communication skills.
B.Com.	Business economics	2010203	Upon completion of this course the students will be able to understand the fundamentals and basic terminology of economics. Get an understanding of basic forces of demand and supply and how it effect the working of product and factor markets. Also get a framework of learning about consumer and producers behaviour. The basis of allocation of resources and taxes
B.Com.	Indian Economy and Business Environment	2010203	Upon completion of this course the students will be able to evaluate the legal, social and economic environments of business. Students will demonstrate sensitivity towards ethical and moral issues and have ability to address them. After studying the structural aspects of Indian economy students will be exposed to economic reforms in India at its problems. Better understanding of fiscal and monetary policies and New economic policies
B.Com.	Banking	405	(1) To familiarize the students with the basic concepts and practice of banking. (2) To provide the students an understanding about recent trends and innovation in banking sector (3) To provide basic awareness to student about various types of risks in banking sector. (4) Gain knowledge on various kind of benefits in banking sector.

B.Com.	E-commerce	305	(1) Understanding electronic payment system and its environment. (2) Make ethical decisions related to e-commerce based on laws, privacy and security. (3) Analyze the steps, tools and security considerations needed create an E-commerce websites. (4) Recognize the impact of ICT on the internet in business operations. (5) Acquire knowledge in identifying the main business and marketplace models for electronic communication & Trading.
B.Com.	BRF	302	(1) To understand the rules governing Indian Contract Act. (2) To familiarize the rights and discharges of duties by parties in Indemnity, Gurantee, Bailment and pledge. (3) To acquire knowledge of rules governs setting up of agency and termination of agency. (4) To understand the legal provisions of sales of Goods Act. (5) To know the legal provisions of laws relating to business.
B.Com.	Business Ethics	302	(1) To know role of ethics in corporate governance. (2) To create knowledge about ethics and its application in functional areas of business. (3) To create knowledge about ethics and corporate social responsibility. (4) To bring up Value system in an organisation based on ethics and provide knowledge about ethical decision making. (5) To recollect concept on ethical management practices in business and appreciate the value system of ancient time.
B.Com.	Business communication	205	1)Apply business communication strategies and principles to exchange information. (2) learn to write business letters. (3) Attain oral communication skill for effective oral presentation. (4) Acquire skills to prepare reports. (5) To enrich written communication skill for employability.
B.Com.	International Marketing	6.06	(1) To understand the marketing concepts and marketing environment at international level. (2) To acquire knowledge on product planning and product life cycle. (3) To gain knowledge on choice of distribution channel and pricing strategies at international level. (4) To understand various method of promotion. (5) To understand marketing concept on globalization level.

B.Com.	GST	6.05	1) To provide knowledge about goods-service tax. (2) To create employability to the students in commercial tax practices. (3) To understand the procedure for registration, payment and refund of G.S.T. (4) To know tax related with movement of goods. (5) To understand the appeals, offences and penalties with respect to G.S.T.
B.Com.	Auditing	6.04	The syllabus of this paper introduced the students about the concepts and principles of auditing, auditing process and the objectives of auditing. It familiarize with basic terms used in auditing. Students know more about internal control and internal check system and to understand the duties and liabilities of a company auditor. It provides the knowledge about the preparation of audit report. Students understand more about government audit, audit of charitable and educational organizations, hospitals, clubs etc.
B.Com.	Financial Management	6.03	• To learn the theoretical foundations of financial management and Financial management decisions. • To familiarize the theories of capital structure and the concept of cost of capital • To evaluate feasibility of various investment options • To provide basic knowledge about working capital management . • To understand the factors determining dividend policy adopted by companies.
B.Com.	Cost Accounting-2	6.02	• To enable the students to understand about job costing, batch costing and contract costing. • To understand the students the different operating methods to central and reduce cost of rendering services. • To inform the students about the methods of costing and also used to ascertain the cost at each stage of manufacturing. • To aware the students to analyse the behavior of cost in relation to changes in volume of output.

B.Com.	International Business Environment	5.06	This paper plays a significant role in the development of students. It gives the students an understanding of the different business management practices found all over the world and prepare them for graduate careers working abroad or in organization that are engaged in business on a global scale. It focuses on key business disciplines with in an international context introducing the foundations of finance, marketing, supply chains, human resources and operations. The world's economy is increasingly global. Studying international business environment will provide the students with insights into the global economic and business climates.
B.Com.	Entrepreneurship and small scale business	5.05	This paper plays a significant role in the overall economic development of country. Entrepreneurship education aids students from all socioeconomic backgrounds to think outside the box and nurture unconventional talents and skills. It creates opportunities, ensures social justice, instills confidence and stimulates the economy. Small scale business is important economic catalysts in a developing nation. The industry provides employment and earning opportunities, which contribute to economic growth and increase in the standard of living of the population.
B.Com.	F.M.O	5.04	(1) To introduce the operations of Indian financial system to the students. (2) To create awareness regarding the operations of primary market in India. (3) To understand the role of secondary market in financial market operations. (4) To gain knowledge about the mutual funds, its operations, advantages and disadvantages. (5) To acquire knowledge about the various derivative instruments deal in Indian financial market.
B.Com.	A.F.M	5.03	• To understand the basic concepts of management accounting • To understand the analysis of financial statements by using various methods • To enable the students to understand different ratios used for analyzing financial Statements • To helps the students to prepare fund flow statement for the business organization • To helps the students to prepare the cash flow statement required for the business

B.Com.	Cost Accounting-1	5.02	• To understand the concept of costing and related terms. • To familiarity with the estimation and controlling of material cost • To understand the estimation and controlling of labour cost • To familiarity with the estimation of overhead cost • To able to prepare cost sheet
B.Com.	Taxation Law-1	5.01	• To collect the basic concepts and definitions of Income Tax Act 1961 • To know the residential status of assessee and incomes exempted from tax • To familiar with the computation of income from salary • To familiar with the computation of income from house property • To familiar with the computation of income from business and profession
B.Com.	Taxation Law-2	5.01	• To familiar with the computation of capital gain • To familiar with the computation of income from other sources • To know about the aggregation of income and deduction u/s 80C to 80U • To know about the assessment of individuals • To aware about the income tax authorities and their powers and duties.
Program Name	Course Name	Course Code	Course Outcome
B.Sc. Medical			Program Outcomes After completion of graduation in B.Sc Medical the student will be able to: - Develop the basis of Science for coherent understanding of academic field to pursue multi & interdisciplinary Science careers in future. - Plan and execute experiments or investigations ,analyse & interpret data information collected using appropriate methods. - Develop Scientific temper and this can prove to be more beneficial for the society as the Scientific developments can make a nation or society to grow at a rapid pace through research. - Think critically ,follow innovations & developments in Science and Technology.

			-Apply knowledge and skills that are necessary for participating in learning activities throughout the life. -Various activities like field survey, project work, short trip, help in shaping their personality and do innovation which will be beneficial for the country as well. Skill Enhancement Programme - Helps to get an exposure and also provides the knowledge to pursue their goals, in Agro based small scale industries and other industries as well. - Prepares the students to become competent professionals in laboratory science and technology. - Practical work make the students skilful and this help them to solve common problem in their daily life.
B.Sc. Medical	Life & Diversity from Protozoa to Helminthes	1.1	The student will be able to: • Get aware with unique characters and classification of different Phyla (Protozoa to Helminthes). • Understand the type study of different animals related to different Phyla. • Recognise the biodiversity and economic importance of different Phyla. • Develop understanding about the parasitic adaptations of Protozoa and Helminthes parasites and diseases caused by them. • Learn about the polymorphism in order Siphonophora of Coelenterata Phylum and Canal system and Spicules of Porifera Phylum.
B.Sc. Medical	Life & Diversity from Annelida to Hemichordata	2.1	The student will be able to : • Get aware with unique ,general characters &classification up to order level and type study of differentPhyla(Annelida to Hemichordata). • Develop understanding to recognise the biodiversity and economic importance of different Phyla. • Have knowledge about affinities and evolutionary significance of Trochophore larva.
B.Sc. Medical	Mammalian Physiology-1	3.2	The learner will be able to: •Understand the type,structural chemistry& role of different biomolecules (Carbohydrate, Protein and Lipids). • Have knowledge about the different process of transport through biomembranes. • Get aware with the symbiotic digestion. • Learn about the structure and physiology of muscle. • Gain fundamental knowledge about the type, structure and growth of bone. • Learns the effect of aging on skeletal system and bone disorders.

B.Sc. Medical	Mammalian Physiology -2	4.2	The learner will be able to: • Understand the physiology at cellular and system levels. • Get aware with the role and function of different systems in detail (e.g Circulation, Respiration ,Excretion and Neural integration). • Have knowledge about the physiology of endocrine and reproductive systems to define normal and abnormal functions. •Learns the different patterns of excretory products and urea formation in liver.
B.Sc. Medical	Ecology&Evolution	5.2	The student will be able to: • Understand the relationship between the abiotic and biotic factors and their effects. • Gain knowledge about the various biological interactions. • Get aware with how the change in population affect the ecosystem. • Develop understanding about the evolutionary history of man and phylogeny of horse. • Know and understand the concept of origin of life ,organic evolution and their theories and speciation process.
B.Sc. Medical	Developmental Biology	6.2	The student will be able to: • Develop understanding about the events that led up to fertilization (spermatogenesis and oogenesis). • Understand the pattern of cell cleavage in vertebrates and invertebrates. • Have knowledge about different stages and cellular mechanism for blastulation and gastrulation. • Differentiate between determination and differentiation process. • Get aware with the structure, formation and significance of extraembryonic membrane in birds and mammals. • Gain fundamental knowledge about the concept of regeneration and competence.
B.Sc. Medical	Developmental Biology	6.2	The student will be able to: • Develop understanding about the events that lead up to fertilization. • Understand the pattern of cell cleavage in vertebrates and invertebrates. • Have knowledge about different stages and cellular mechanism for blastulation and gastrulation. • Differentiate between determination and differentiation process. • Get aware with the structure, formation and significance of extraembryonic membrane in birds and mammals. • Gain fundamental knowledge about the concept of regeneration and competence.

B.Sc. Medical	Botany	BOT.1.1	Semester-I Paper I: Diversity of Microbes Paper code: BOT.1.1 On completion of the course, students will be able to: • Understand the biological status of viruses, structure and reproduction in Bacteria • Know the systematic, morphology and structure of Algae. • Understand the life cycle pattern of Algae. • Understand the useful and harmful activities of Algae. • Understand the systematic, morphology and structure of Fungi • Know the Economic Importance of Fungi • Know the structure, economic importance of Lichens
B.Sc. Medical	Cell Biology	BOT.1.2	Semester-I Paper II: Cell Biology Paper code: BOT.1.2 On completion of the course, students will be able to: • Gain knowledge about "Cell Science". • Understand Cell wall, Plasma membrane and Cell organelles • Understand the structure and chemical composition of chromatin • Understand the concept of cell cycle and cell division. • Understand sex determination in plants • Understand the numerical and structural changes occurring in chromosomes • Understand structural organization and morphology of chromosome as well as karyotype analysis
B.Sc. Medical	Diversity of archegoniates	BOT.2.1	Semester-II Paper I: Diversity of archegoniates Paper code: BOT.2.1 On completion of the course, students will be able to: • Know the taxonomic position, occurrence, structure and reproduction of Bryophytes • Know the taxonomic position, occurrence, structure and reproduction of Pteridophytes • Understand the economic importance of Bryophytes • Understand the economic importance of Pteridophytes • Describe the stellar evolution. • Understand the concept of heterospory, apogamy and apospory

B.Sc. Medical	Genetics	BOT.2.2	Semester-II Paper II: Genetics Paper code: BOT.2.2 On completion of the course, students will be able to: • Understand the biochemical nature of nucleic acids, experimental evidences to prove DNA as a genetic and DNA replication. • To study the phenomenon of dominance, laws of segregation, independent assortment of genes. • To understand the different types of genetic interaction, incomplete dominance, codominance, inter allelic genetic interactions, multiple alleles and quantitative inheritance etc. • Students will gain knowledge about mutations and various mutagens • Learn about the extra-chromosomal inheritance in plant system. • Understand the process of transcription and translation and role of genetic code in polypeptide formation. • Understand the concept of gene regulation in prokaryotes and eukaryotes.
B.Sc. Medical	Biology And Diversity of Seed Plants-1	BOT.3.1	Semester-III Paper I: Biology and diversity of seed plants –I Paper code: BOT.3.1 • The students will learn about the structure and reproduction of certain Gymnosperms (Cycas, Pinus and Ephedra). • Understand the life cycle pattern and economic importance of Gymnosperms. • Understand origin and evolution of Gymnosperms • Understand the Phylogeny of angiosperms -A general account of the origin of Angiosperms. • Know the scope of Paleobotany, types of fossils and geological time scale • Understand the various fossil genera representing different fossil groups.
B.Sc. Medical	Plant Anatomy	BOT.3.2	Semester-III Paper II: Plant Anatomy Paper code: BOT.3.2 On completion of the course, students will be able to: • Understand the different kinds of tissues associated with plants • Classify the meristimatic tissue and permanent tissue based on origin and position • Know the internal structure of monocotyledonous and dicotyledonous plants with typical examples • Understand the normal and abnormal secondary growth and development of wood in plants • Know different types of leaves, stomatal apparatus and types, anatomy of typical monocot and dicot leaf • Understand root apical meristem and secondary growth in roots

B.Sc. Medical	Biology and Diversity of Seed Plants-2	BOT.4.1	Semester-IV Paper I: Biology and diversity of seed plants –II Paper code: BOT.4.1 On completion of the course, students will be able to: • Understand the different system of taxonomic classification of plants proposed by different renowned taxonomist • Knowledge on the principles and rules of binomial nomenclature i.e. ICBN. • Get idea of flower morphology , Inflorescence and its types of Inflorescence. • Learn about various Angiosperm families and their economic value. • Learn the taxonomic evidences from cytology, numerical and chemicals. • Gain proficiency in the use of keys and identification manuals.
B.Sc. Medical	Plant Embryology	BOT.4.2	Semester-IV Paper II: Plant Embryology Paper code: BOT.4.2 • Understand microsporogenesis and megasporogenesis • Understand the development of male and female gametophyte,double fertilization and triple fusion among the angiosperms. • Understand the different agents involved in the pollination and its significance • Know apomixis and polyembryony and their significance in the plant developmental biology • Understand of the different types of fruits and their morphology. • Get idea of seed formation and structure of monocot and dicot seed.
B.Sc. Medical	Plant Physiology	BOT.5.1	Semester-V Paper I: Plant Physiology Paper code: BOT.5.1 On completion of the course, students will be able to: • Know importance and scope of plant physiology. • Understand the plant cells in relation to water. • Learn and understand about mineral nutrition in plants. • Understand the growth and developmental processes in plants. • Understand the process of photosynthesis in higher plants with particular emphasis on light and dark reactions, C3 and C4 pathways. • Learn about the movement of sap and absorption of water in plant body • Understand the process of translocation of solutes in plants • Understand the plant movements. • Know about the Plant Growth hormones (Auxins, Gibberellins, Cytokinins, Ethylene,ABA)

B.Sc. Medical	Ecology	BOT.5.2	Semester-V Paper II: Ecology Paper code: BOT.5.2 On completion of the course, students will be able to: • Know the different ecological factors such as abiotic and biotic factors • Understand the adaptations of the plants to various abiotic factors • Understand the concept of ecosystem and its functioning: flow of energy in the nature through food chain, trophic level or food web • Understand the ecological succession • Know the biogeochemical cycles of carbon, nitrogen and phosphorus • Understand the community ecology through quadrates and transects • Know the phyto-geographical regions of India • Explain different types of environmental pollution and its management. • Understand Biomagnification, global warming and climate change.
B.Sc. Medical	Biochemistry and Plant Biotechnology	BOT.6.1	B.Sc.Botany, Semester-VI Paper I: Biochemistry and Plant Biotechnology Paper code: BOT.6.1 On completion of the course, students will be able to: • Know the nitrogen metabolism and its importance. • Understand the respiration in higher plants with particular emphasis on aerobic and anaerobic respiration. • Structure, general features of enzymes, concept of enzyme activity and enzyme inhibition • Gain knowledge about various lipids and their metabolism. • Understand the fundamentals of Recombinant DNA Technology. • Understand the principle and basic protocols for Plant Tissue Culture. • Understand the applications of biotechnology for human welfare • Understand the importance of Transgenic plants

B.Sc. Medical	Economic Botany	BOT.6.2	Semester-VI Paper II: Economic Botany Paper code: BOT.6.2 On completion of the course, students will be able to: • Understand the role plants in human welfare. • Know the centre of origin and domestication of crop plants • Gain knowledge about various plants of medicinal use. • Appreciate plant & plant products encountered in day to day life. • Understand the chemical contents of the plant products. • Know about the origin, distribution and utility of common food plants, oil yielding plants and spices such as ginger, turmeric, cloves and coriander • Gain knowledge about Beverages, timber yielding and fiber yielding plants
B.Sc. Medical	Sanskrit Elective,	2005301	CO1: Appreciate the development of Sanskrit Literature. CO2: Negotiate texts independently with grammatical analysis and poetic excellence. CO3: Acquainted with the work ; Hitopadesha of the Great poet Vishnu Dutt Sharma and Charak Samhita by Maharashi Charak . CO4: Know about origin and development of different types of Mahakavya and Geetikavya. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction CO7:Shabda roopa and Dhatu roopa, Procedures of formation of Sanskrit words. CO8: Translation of Hindi sentences in Sanskrit and Shandhi prakarna.
B.Sc. Medical	Sanskrit Elective,	2005410	CO1: Appreciate the development of Sanskrit Literature. CO2: Negotiate texts independently with grammatical analysis and poetic excellence. CO3: Acquainted with the work ; Hitopadesha of the Great poet Vishnu Dutt Sharma . CO4: Know about origin and development of different types of Mahakavya and Geetikavya. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction CO7:Shabda roopa and Dhatu roopa, Procedures of formation of Sanskrit words. CO8: Translation of Hindi sentences in Sanskrit .
B.Sc. Medical	Cell biology,practical,Genetics, practical, life and diversity of chordates- 1&2, practical, fish and fisheries, entomology and practicals	1.2, 2.2, P-101, 201, 3.1.4.1,P-301&401, 5.1.6.1 P-501& 601.	Students were made aware of practical utility of studying zoology.

B.Sc. Medical	Cell Biology	1.2	To apprise students about the dynamics of cell and biology of cancer Students will understand the nature and basic concept of cell biology. Students will be able to apply the knowledge of internal structure of cell and their role in many metabolic function of organism
B.Sc. Medical	Genetics	2.2	To apprise the students about various concepts of genetics and its importance in human health. Students will have acquaintance with the basic causes associated with inborn errors and other genetic disorder and will be able to give counseling to general people. Students will be able to explain the concept of gene interactions, Sex linked inheritance and their role in medical sciences.
B.Sc. Medical	Life and Diversity of Chordates-1	3.1	To make students understand the basic characters of Chordates, origin and ancestry of chordates from protochordates and about the general characters, scale and fin pattern in class Pisces. Through this core course the students will be capable of identifying different protochordate and will be capable of Imparting conceptual knowledge of protochordates, their adaptations and associations in relation to their environment.
B.Sc. Medical	Life and Diversity of Chordates- 2	4.1	Students will be able to understand evolutionary lines of vertebrate class including amphibians, reptiles, birds, and mammals. Students will be able to identify (based on morphological characters) and understand adaptations in vertebrate class including amphibians, reptiles, birds, and mammals. Students will be able to classify and identify vertebrates' species and their skeleton Learners will also realize and understand economic importance of the vertebrate species and will be aware about their conservation.
B.Sc. Medical	Fish and Fisheries:	5.1	To apprise the students with the necessary basic information about fishery and aquaculture and to provide the technical and general knowledge necessary for competent fisheries management. Students will understand concepts of fisheries, fishing tools and site selection for a fishery/aquaculture industry. Students will be capable to undertake the small Aqua culture projects and will be able to explain induced breeding and post harvesting techniques

B.Sc. Medical	Entomology	6.1	To impart knowledge for the identification of the different species of insect pests and learning of pest management techniques with the understanding of practical application of pesticides and their proper use. Students will be able to understand ecologically important and harmful insects. Will be able to recognize ecology and morphology of insect pest and the nature of damage done by them.
Program Name	Course Name	Course Code	Course Outcome
B.Sc. Non Medical			1 Disciplinary knowledge: Capable of demonstrating comprehensive knowledge and understanding of one or more other disciplines that form a part of an undergraduate programme of study 2 Critical Thinking : Take informed action after identifying the assumptions that frame our thinking. And action, checking out the degree to which these assumptions are accurate and valid, and looking at our ideas and decisions (intellectual, organizational, and personal) from different perspectives. Critically evaluate practice, policies and theories by following a scientific approach to knowledge development. 3 Communication Skills : Ability to express thoughts and ideas effectively in writing and orally; communicate with others appropriate media; confidently share one's views and express herself/himself; demonstrate the ability to listen carefully; and present complex information in a clear and concise manner to different groups. 4 Be capable of understanding the core physical laws to understand the basic concepts, latest progress and applications of certain sub-fields such as nuclear physics, spectroscopy of atoms & molecules, solid state physics, computational physics & electronics.

B.Sc. Non Medical	Computer Fundamentals & MS-Office	1.1	The course Computer Fundamentals & MS- Office is a beginner level course for the knowledge of computer. At the end of this course the student will be able to : • understand the basic terminology of computer system and its classifications. • Define Number Systems, which have been used by the computers. • understand the working of input/output and storage devices; • Define Software and its types, and also got familiar with the use of algorithms and flowcharts. • Use MS-Word, Excel and Power Point practically.
B.Sc. Non Medical	Computer Architecture	1.2	At the end of this course, the student will be able to: • Understand computer arithmetic and Boolean algebra and simplification of Boolean expressions. • Design Arithmetic and combinational circuits using logic gates. • Design sequential circuits such as registers and counters using flip-flops. • Understand Register transfer and Micro-operations, Instruction and instructions codes etc.
B.Sc. Non Medical	Practical based on Paper-1.1	1.3	After completion of practical of Computer Fundamentals & MS-Office the student will get the practical knowledge of MS-Word, Excel & Power point. Students will be able to use these tools in the real world, which is very much required current era of technology.
B.Sc. Non Medical	Programming in C	2.1	Knowledge of Programming in C is the essential for the learners who want to get the knowledge of programming. The learner of this course will be able to : • Understand basic concepts of the programming with its techniques, • Design algorithm , creation of Flow charts and able to develop sorting, searching, merging and other basic algorithms to solve problems. • Define operators with their associativity & precedence etc. that could be used in the coding using C Language. • Write programs code in C language using decisional, conditional and looping statement with proper syntax of the programming. • Understand pointers, arrays, strings
B.Sc. Non Medical	Structured Systems Analysis and Design	2.2	At the end of this course, the student will be able to: • Describe System and its development life cycle, role of system analyst during system development. • Define System structured analysis and its tools • Define steps involved in system design and its related terminology. • Define system testing, system maintenance and system documentation.

B.Sc. Non Medical	Practical & Viva-voce (Based on Paper 2.1)	2.3	Practical of C provide the practical knowledge of Programming in C in computer lab. Students learn how to write, compile and run a program code in C language compiler to solve a problem in the real world.
B.Sc. Non Medical	Data Communication and Networking	3.1	At the end of this course, the student will be able to: • Understand and characterize various types of computer networks along with an overview of the standard OSI and TCP/IP reference models that illustrates the network architecture; • Define data communication and basic terminology along with its hardware components. • conceptualize the various design issues related to data link layer and Network Layer. • Understand Transport Layer and Application Layer with their protocols.
B.Sc. Non Medical	Object-Oriented Design and C++	3.2	At the end of this course, the student will be able to: • Understand the basic concepts of Object-oriented programming system and object models • Define Object oriented features of C++, its operators, hierarchy and precedence and various control structures. • Use various object oriented features of C++ in programming. • Understand pointers, constructor and destructors in C++; • acquire the detailed knowledge of polymorphism and templates etc.
B.Sc. Non Medical	Practical based on Paper- 3.2	3.3	Practical of C++ provide the practical knowledge of Programming in C++ in computer lab. Students learn how to write, compile and run a program code in C language compiler to solve a problem in the real world using all the basic and object oriented features of C++.
B.Sc. Non Medical	Data Structures with C/C++	4.1	The subject Data structure provides the knowledge about the ways in which data could be store, manage and retrieve from the computer memory. At the end of this course, the student will be able to: • Understand basics of data structure and algorithm complexities • Implement arrays and various searching, sorting techniques • Understand the idea of implementation for stack, linked list and queue • Define tree traversal methods and graphs

B.Sc. Non Medical	Operating Systems	4.2	Knowledge of the Operating System is very much useful for the learner. At the end of this course, the student will be able to: • Understand the basic concepts of operating systems, its services, types and various functions such as Process Management, Memory Management, CPU Management, File Management etc. • Define concept of process management and scheduling. • Understand the process synchronization along with deadlock handling. • define about File management and Directory management system.
B.Sc. Non Medical	Practical & Viva-voce(Based on Paper 4.1)	4.3	Practical of Data Structure using C/ C++ provide the practical knowledge of implementation of various types of data structures(Array, Stack, Queue, Linked List etc.) in computer lab. Students learn how to write, compile and run a program code using C/C++ language for implementation of various types of data structures and various operations on them such as Insertion, Deletion, Updation, Searching, Sorting etc.
B.Sc. Non Medical	Database Management System	5.1	At the end of this course, the student will be able to: • Define basic concepts of data base along with its functions, advantages and disadvantages of DBMS. • Understand architectures to DBMS and various data models. • Understand E-R Model, E-R diagram and various Normal forms. • Use SQL commands and also will be able to create Views.
B.Sc. Non Medical	Introduction to Internet and Web Technologies	5.2	At the end of this course, the student will be able to: • Outline the idea of Internet, its benefits and its various tools. • Understand the Internet terminology, Intranet and its applications, Search engines etc. • Follow theoretical steps for developing a website and able to design simple web pages and HTML forms using HTML tags. • Use simple and animated graphics on web pages and also able to use CSS to specify style to web pages.
B.Sc. Non Medical	Practical based on Paper- 5.1 and 5.2	5.3	After completion of practical of DBMS, the learner will be able to perform various operations using SQL commands. After completion of practical of IWD, the learner will be able to develop Web pages using HTML tags and will be able to set styles using CSS.

B.Sc. Non Medical	Visual Basic Programming	6.1	The learner will get the knowledge about event driven programming with the help of this course. After completing this course the learner will be able to • The learner will be very much familiar with the environment of VB Language. • The learner will get the knowledge about various controls available in Visual Basic. • The learner also get the knowledge about the data base programming using DAO &ADO. • After completing this course the learner will be able to design and develop a standalone app that could be use in real world.
B.Sc. Non Medical	Software Engineering	6.2	The knowledge of Software Engineering is very much important for software developers. After completing the course the learner will be able to : • understand concept of Software Engineering and various steps required for the development of the computer software. • about the various SDLC Software Development Life Cycle models. • knowledge of all the essential steps that needs to be followed for successful software development. • understand the fundamentals of Software Testing and Software Maintenance.
B.Sc. Non Medical	Practical & Viva-Voce(Based on paper 6.1)	6.3	Practical of Visual Basic provide the practical knowledge of Programming in Visual Basic in computer lab. The learner becomes familiar with the controls available in VB environment. The learner get the practical knowledge about to write, compile and run a program code in VB environment to solve a problem in real world.
B.Sc. Non Medical	Sanskrit Elective	2005301	CO1: Appreciate the development of Sanskrit Literature. CO2: Negotiate texts independently with grammatical analysis and poetic excellence. CO3: Acquainted with the work ; Hitopadesha of the Great poet Vishnu Dutt Sharma and Charak Samhita by Maharashi Charak . CO4: Know about origin and development of different types of Mahakavya and Geetikavya. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction CO7:Shabda roopa and Dhatu roopa, Procedures of formation of Sanskrit words. CO8: Translation of Hindi sentences in Sanskrit and Shandhi prakarna.

B.Sc. Non Medical	Sanskrit Elective,	2005401	CO1: Appreciate the development of Sanskrit Literature. CO2: Negotiate texts independently with grammatical analysis and poetic excellence. CO3: Acquainted with the work ; Hitopadesha of the Great poet Vishnu Dutt Sharma . CO4: Know about origin and development of different types of Mahakavya and Geetikavya. CO5: The system of Traditional grammar. CO6: Sanskrit vocabulary and grammatical construction CO7:Shabda roopa and Dhatu roopa, Procedures of formation of Sanskrit words. CO8: Translation of Hindi sentences in Sanskrit .
B.Sc. Non Medical	Algebra	12BSM111	This course will enable the students to: 1. Determine rank of a matrix, eigen values, eigen vectors, characteristic equation and characteristic polynomial of square matrices. Understand unitary and orthogonal matrices and to solve related problems. 2. Find solution of homogeneous and non-homogeneous system of linear equations using matrices. Determine relation between roots and coefficients of a general polynomial equation. 3. The solution of the cubic and bi-quadratic equations.
B.Sc. Non Medical	Calculus	12BSM112	This course will enable the students to: 1. Calculate the limit of functions, examine the continuity of functions, understand differentiability of different type of functions, successive differentiation of functions and series expansions. 2. Understand concepts of tangents, normals, asymptotes, curvature, evolutes and involutes of a curve; the geometrical meanings of these terms and to solve related problems 3. Determine singular points of a curve and their types. To understand rectification of curves and to apply the reduction formulae. 4. Determine area bounded by curves and volumes and surface area of solids formed by revolution of curves
B.Sc. Non Medical	Solid geometry	12BSM113	This course will enable the students to: 1. To classify the general equation of second degree and tracing of conics 2. Can deal with the problems related to cones, cylinders and spheres 3. Can deal with the conicoids and envelope related problems 4. Handle the problems related to the paraboloids and other sections of conicoids 5. Do the reduction of the second degree equation in 3 coordinates

B.Sc. Non Medical	Trigonometry and Number theory	12BSM121	This course will enable the students to: 1. Deal with the concept of divisibility , GCD ,LCM and the concepts of congruence 2. Handle the problems related with residue system and the quadratic residue system 3. Solve the problems related De Moivre's theorems and its application 4. Understand the concepts of circular, hyperbolic , logarithmic functions of complex variables
B.Sc. Non Medical	Ordinary Differential Equation	12BSM122	This course will enable the students to: 1. Analyze real world scenarios to recognize when ordinary differential equations (ODEs) or systems of ODEs are appropriate, formulate problems about the scenarios, creatively model these scenarios (using technology, if appropriate) in order to solve the problems using multiple approaches, judge if the results are reasonable, and then interpret and clearly communicate the results. 2. Recognize ODEs and system of ODEs concepts that are encountered in the real world, understand and be able to communicate the underlying mathematics involved to help another person gain insight into the situation. 3. Work with ODEs and systems of ODEs in various situations and use correct mathematical terminology, notation, and symbolic processes in order to engage in work, study, and conversation on topics involving ODEs and systems of ODEs with colleagues in the field of mathematics, science or engineering.
B.Sc. Non Medical	Vector calculus	12BSM123	This course will enable the students to: 1. Understand and solve problems related to scalar and vector product of vectors. Learn vector differentiation and directional derivatives and their problem solving. 2. Learn gradient, divergence and curl operators. Apply knowledge and these tools in problem solving. 3. Understand vector identities, Laplacian operator. Learn vector integration and line integral. Solve problems using these concepts. 4. Learn surface and volume integral formulations and their evaluation. Prove Gauss Divergence, Green's and Stoke's theorems. Realize importance of Green, Gauss and Stokes' theorems.

B.Sc. Non Medical	Advance Calculus	12BSM231	This course will enable the students to: 1. Understand and to prove Rolle's Theorem, mean value theorems and their geometrical interpretations. To determine indeterminate forms. 2. Learn conceptual variations while advancing from one variable to several variables in calculus, limit and continuity, partial differentiation of such functions. To understand composite functions, homogeneous functions and to solve related problems. 3. Understand differentiability of real valued functions of two variables and to prove associated results. To determine maximum and minimum of functions of two variables and to apply multivariable calculus in optimization problems. 4. Evaluate double and triple integrals. To learn about Dirichlet integrals, Beta and Gamma functions and to solve related problems.
B.Sc. Non Medical	Partial Differential Equation	12BSM232	The course will enable the students to: 1. Apply theory of PDEs to determine integral surfaces through a given curve and to find orthogonal surfaces. To understand compatible systems and Charpit method, Jacobi method methods for solving PDEs. To learn techniques of solving second order PDEs. 2. This course will focus on the formulation of first and second order partial differential equations(PDEs) for three basic types of hyperbolic, parabolic and elliptic equations. The concentration is on concrete examples and problem solving of PDEs which include heat, wave and Laplace's equation that arise in various physical systems 3. Learn classification of second order partial differential equations, their canonical forms, and methods of solving those. Find characteristic equations and curves. Apply this knowledge to solve problems of science and society. 4. Model physical phenomena using partial differential equations such as the Laplace, heat and wave equations and to solve these equations. Learn solving non-linear equations by Monge's method. Apply these methods as a tool for modelling and solving real world problems.
B.Sc. Non Medical	Statics	12BSM233	This course will enable the students to: 1. Understand the concepts of composition and resolution of forces, parallel forces , moments and couples 2. Solve the problems based on analytical conditions of equilibrium of coplanar forces, friction and centre of gravity 3. Understand the concepts of virtual work , forces in 3d and poinsores central axis 4. Deal with wrenches, null lines and planes stable and unstable equilibrium.

B.Sc. Non Medical	Sequence and Series	12BSM241	This course will enable the students to: 1. Understand basic concepts of real number system and set theory. Preliminary results on neighbourhood of a point, interior and limit points, open sets, closed sets etc. 2. Learn real sequences, their limit, boundedness and convergence. To find convergence and divergence of a sequence. To understand Cauchy sequence, subsequence and to prove related theorems. 3. Understand infinite series and its basic properties. Attain skills to determine convergence of a series of real numbers by applying various tests. 4. Understand absolute and conditional convergence of alternating series and related tests. Learn the basic concepts of pointwise convergence and uniform convergence of sequence and series of functions.
B.Sc. Non Medical	Special Function and Integral Transformation	12BSM242	This course will enable the students to: 1. Understand singular points of a differential equation and to solve such differential equation by power series method. Learn Hypergeometric differential equation, Hypergeometric function and its properties. 2. Know Bessel's differential equation and its solution. Understand recurrence relations, generating function and orthogonality of Bessel's function. Understand Bessel integral. Attain skills to make use of Bessel functions in scientific problem solving. 3. Familiarise with Legendre's differential equation and its solution in the form of Legendre functions. Understand recurrence relations, generating function and orthogonality of Legendre's function, Rodrigues' formula. Apply knowledge in problem solving. 4. Know Hermite's differential equation and its solution in the form of Hermite functions. Understand recurrence relations, generating function and orthogonality of Hermite function, Rodrigues' formula. Attain skill to apply these tools for investigation and solution of problems 5. Know about Laplace transforms and its properties in detail and to apply those in solving differential equations. 6. Familiarize with Fourier transforms of functions, properties of Fourier transform, inverse Fourier transforms and relation between Laplace and Fourier transforms. Develop skill of applying Fourier transforms to solve differential equations.

B.Sc. Non Medical	Programming in C and Numerical Methods	12BSM243	This course will enable the students to: 1. Familiarize with C programming language. Learn elements of C, data types, constants and variables, operations and operators, statements and expressions. Use these tools for writing C programs. 2. Learn Input/ Output functions in C, to write reading and writing statements in C, decision making statements and structures in C. Apply this knowledge to use as tools in writing C programs. 3. Understand loops and arrays, their types, characteristics and structures. Attain the skill to write C programs which involve arrays and multiple iterations. 4. Learn strings of characters, their declaration, input/ output, operations on strings and functions which handle strings. Learn declaration, types and calling of user defined functions in C. 5. Understand errors and their types. Learn techniques to obtain numerical solutions of algebraic and transcendental equations 6. Attain numerical skills to find solutions of system of linear equations by different methods. 7. Learn different interpolation and extrapolation methods and their applications. Apply numerical methods to obtain derivatives. 8. Understand numerical methods for evaluating integrals and solving differential equations and to develop skill of applying these methods for future use in scientific problems.
B.Sc. Non Medical	Real Analysis	12BSM351	This course will enable the students to: 1. Learn basic theory of Riemann integration. Learn fundamental theorem and mean value theorem of integral calculus. 2. Understand improper integrals and to have knowledge to test their convergence. Understand integral as a function of a parameter. Apply this knowledge for problem solving. 3. Understand concepts of metric spaces, sub spaces and their properties. Learn open, closed and bounded sets, interior and limit points , Cauchy sequence and completeness. 4. Learn dense sets, compact and separable metric spaces and related results. Learn important theorems viz. Baire's category theorem, Banach contraction principle, BolzanoWeierstrass property, HeineBorel theorem. Use this basic knowledge for life -long learning purposes.

B.Sc. Non Medical	Groups and Rings	12BSM352	The course will enable the students to: 1. Recognize the mathematical objects called groups, their elementary properties, order of a group, subgroup, cyclic groups and their properties. 2. Understand the notions of cosets, normal subgroups, and quotient groups. Know homomorphisms, isomorphisms and their properties and to prove three isomorphism theorems. 3. Learn about ring, subring, integral domain, field and ideal and related results. 4. Understand quotient rings, Euclidean ring, ring of polynomials, ring homomorphisms, ring isomorphisms and fundamental isomorphism theorems.
B.Sc. Non Medical	Dynamics	12BSM353	This course will enable the students to: 1. Understand the concepts of velocity and acceleration along the radial, transverse, tangential and normal directions. SHM and elastic string 2. Deal with the problems related to mass momentum and force. Newton's laws of motions and work power and energy 3. Understand the concepts of motion , projectile motion and angular velocity 4. Understand the concepts of motion of a rigid body Kepler's law , motion in 3d etc
B.Sc. Non Medical	Real and Complex Analysis	12BSM361	This course will enable the students to: 1. Deal with jacobians beta and gamma function , double and triple integral dirichlet's integral and change of order in double integration 2. Understand the concepts of fourier's series half range series and change of intervals 3. Understand the extended complex plane Visualize complex numbers as points of $\mathbb{R}^2$ and stereographic projection of complex plane on the Riemann sphere. Know De Moivre's Theorem and its Applications. Learn about trigonometric, circular and hyperbolic functions and their properties Understand the significance of differentiability and analyticity of complex functions leading to the CauchyRiemann equations. Apply knowledge to solve related problems. 4. Learn the concepts of mapping by elementary functions , conformal mapping etc.

B.Sc. Non Medical	Linear Algebra	12BSM362	This course will enable the students to: 1. Understand the concepts of vector spaces, subspaces, bases and their properties; linear transformations and their rank and nullity and to use those concepts for problem solving. 2. Learn to determine eigen values, eigen vectors and characteristic polynomial of linear transformations and their further use in investigation and solution of problems. 3. Have knowledge of inner product spaces, orthogonalization and diagonalization of matrices/ linear transformations and to apply that in further learning and for scientific applications. 4. Learn adjoint operation, Hermitian, unitary, normal and triangular forms of linear transformations and related problem solving.
B.Sc. Non Medical	Numerical Analysis	12BSM363	This course will enable the students to: 1. Understand errors and their types. Learn techniques to obtain numerical solutions of algebraic and transcendental equations. 2. Attain numerical skills to find solutions of system of linear equations by different methods. 3. Learn different interpolation and extrapolation methods and their applications. Apply numerical methods to obtain derivatives. 4. Understand numerical methods for evaluating integrals and solving differential equations and to develop skill of applying these methods for future use in scientific problems.
B.Sc. Non Medical	Atomic and molecular Spectroscopy	20PHY-602A	Course learning outcomes: Students after the course will be able to: 1. describe the atomic spectra of one and two valance electron atoms. 2. explain the change in behavior of atoms in external applied electric and magnetic field. 3. explain rotational, vibrational, electronic and Raman spectra of molecules. 4. Describe electron spin and nuclear magnetic resonance spectroscopy and their applications. 5. explain operational principles and construction of lasers. 6. give an account of technological issues behind laser construction. 7. relate the laser operation principles to atom and molecular physics, solid state physics, quantum mechanics and physical optics.

B.Sc. Non Medical	Mechanics I	20UPHY	Learning outcomes: Students will be able to articulate and describe: 1 Relative motion. Inertial and non inertial reference frames. 2 Parameters defining the motion of mechanical systems and their degrees of freedom. 3 Study of the interaction of forces between solids in mechanical systems. 4 Centre of mass and inertia tensor of mechanical systems. 5 Application of the vector theorems of mechanics and interpretation of their results. 6 Newton's laws of motion and conservation principles. 7 Introduction to analytical mechanics as a systematic tool for problem solving.
B.Sc. Non Medical	BSc 1Sem Physics: Electrostatic and Magnetism	20UPHY-102	Intended Outcomes for the course After completion of above course, students will 1) Apply knowledge of electricity and magnetism to explain natural physical processes and related technological advances. 2) Use an understanding of calculus along with physical principles to effectively solve problems encountered in everyday life, further study in science, and in the professional world. 3) Design experiments and acquire data in order to explore physical principles, effectively communicate results, and critically evaluate related scientific studies. 4) Assess the contributions of physics to our evolving understanding of global change and sustainability while placing the development of physics in its historical and cultural context. 5) Electromagnetism serves as a basic principle of working for many of the home appliances in household applications. These applications include lighting, kitchen appliances, air conditioning systems, etc. The most dominant use of power in homes as well as commercial buildings is lighting systems.
B.Sc. Non Medical	Inorganic chemistry	CH-101	* Apply the fundamental principle of measurement matter, Atomic theory, chemical periodicity, chemical bonding, general chemical reactivity and solution chemistry to subsequent course in science *To learn depth knowledge about ionic solids and covalent compounds
B.Sc. Non Medical	Physical chemistry	CH-102	*Explain the difference between liquids and gases, how real gases are different from ideal gases at different temperature and pressure. *Explain methods of liquefaction and discuss intermolecular forces & structural differences between solids, liquids and gases. *To learn depth knowledge about liquid state and solid state

B.Sc. Non Medical	Organic chemistry	CH-103	*Discuss the stereochemistry of organic compounds structural and stereoisomerism ,optical,conformational and geometrical isomerism *concept of Mechanism of organic reaction * Discuss the preparations , reactivity & stereochemistry of SN1 &SN2 reactions *. Type of organic reaction and Alkane
B.Sc. Non Medical	Inorganic chemistry	CH-201	*The fundamental of the chemistry of the main group element (representative elements)and importance real world application of many of these species * The bonding models, structure, reactivity, and applicationof hydrogen peroxide, ozone and hydride *Skill in handling and measurement of radioactive materials *Basic knowledge of nuclear structure, stable and unstable nuclei,nuclear reaction and different mode of radioactive decay and also method for measurement of radioactivity *The fundamental of radiochemistry,isotopic chemistry,radiation chemistry and application of these in measuring technology,kinetics,radical chemistry,biotechnology and material and process technology
B.Sc. Non Medical	Physical chemistry	CH-202	*The application of mathematical toolto calculate kinetics *The derivation of rate equation from mechanistic data *The use of simple models for predictive understanding of physical phenomena associated to kinetics *The limitation and use of models for the solution of applied problems involving kinetics * Students learn depth concept about electrochemistry
B.Sc. Non Medical	Organic chemistry	CH-203	* Discuss Preparations & reactivity of alkanes ,alkenes & alkynes by applying saytzeff rule * Explain Aromaticity of benzenoids & non-benzenoids, the preparation ,reactivity & structure of aromatic compounds *students learn depth concept about dienes, alkyl halide and aryl halides
B.Sc. Non Medical	Inorganic chemistry	CH-301	* Discuss the classification & characteristics of solvents and explain the reactions in solvents like liquid NH₃ and HF * Describe Werner's theory, valence bond theory, Valence bond theory of coordination compounds and explain isomerism in coordination compounds. *Chemistry of d block elements

B.Sc. Non Medical	Physical chemistry	CH-302	*The application of mathematical tool to calculate thermodynamics *The relationship between microscopic properties of molecules with macroscopic thermodynamic observables *State and apply the law of thermodynamic, perform calculation with ideal and real gas, design practical engine by using thermodynamic cycles, predict chemical equilibrium and spontaneity of reaction by using thermodynamic principles *To learn depth knowledge about Distribution law
B.Sc. Non Medical	Organic chemistry	CH-303	* Explain the methods of preparation and properties of alcohols, ethers and carbonyl compounds *The fundamental electronic structure and bonding in alcohol and epoxides *The use of ultra violet spectroscopy for organic structure elucidation *Methods of preparation and properties of phenols
B.Sc. Non Medical	Inorganic chemistry	CH-401	* The properties of f-block elements, lanthanide contraction- its causes and consequences, actinide contraction, differences between lanthanides and actinides * Differentiate between volumetric analysis and gravimetric analysis and different types of titrations *Describes bonding models that can be applied to a consideration of the properties of f block elements
B.Sc. Non Medical	Physical chemistry	CH-402	*To learn depth knowledge about electrochemistry *The use of simple models for predictive understanding of physical phenomena associated to chemical thermodynamics *Third law of thermodynamics, carnot cycle and spontaneity criteria for reversible and irreversible process and work function
B.Sc. Non Medical	Organic chemistry	CH-403	*The use of Infra red absorption spectroscopy for organic structure elucidation *Method of preparation and properties of amines, nitro compounds, diazonium salts *The fundamental electronic structure and bonding in carbonyl compounds *Substituents effects on Pka(in the case of carbonyl compounds) *The reactant of carbonyl compounds with both hard and soft nucleophile *The kinetics and thermodynamics of carbonyl condensation reaction
B.Sc. Non Medical	Inorganic chemistry	CH-501	* Metal ligand bonding in transition metal complexes *Thermodynamic and kinetics aspect of metal complexes *Magnetic properties of transition metal complexes *Electronic spectra of transition metal complexes

B.Sc. Non Medical	Physical chemistry	CH-502	*Quantum mechanics includes black body radiation, heat capacity of solids ,plancks radiation law and postulates of quantum mechanics ,derivation of schrodinger wave equation and its application *Current technological application as well as the most recent advance in the field are then detailed * Physical properties and molecular structure *Physical spectroscopy includes rotational,vibrational and raman spectroscopy and its application
B.Sc. Non Medical	Organic chemistry	CH-503	*The use of nuclear magnetic resonance spectroscopy,Mass spectrometry and infrared spectroscopy for organic structure elucidation *To learn depth knowledge about carbohydrates *Application of organometallic reagents towards synthetic organic chemistry
B.Sc. Non Medical	Inorganic chemistry	CH-601	* the concept of hard and soft acids and bases *Application of essential and non essential elements in biological system *outline of silicone and phosphazenes *Application of organometallics compounds towards inorganic chemistry
B.Sc. Non Medical	Physical chemistry	CH-602	*Developed expertise relevant to professional practice of chemistry *Developed an understanding of the breadth and concept of physical chemistry *An appreciation of the role of physical chemistry in the chemical science and engineering *An understanding of methods employed for problems solving in physical chemistry
B.Sc. Non Medical	Organic chemistry	CH-603	*How to use their understanding of organic mechanism to predict the outcome of reaction *How to design synthesis of organic molecules *How to determine the structure of organic molecules by using IR and NMR spectroscopic technique *Improve their theoretical knowledge about chemical reaction which are carried out by light
B.Sc. Non Medical	हिंदी अनिवार्य	HI-03	1.विविध कालखंडों के कवियों एवं उनकी कविताओं के माध्यम से भावात्मक समझ पैदा होना। 2. पत्रों के विविध रूपों का प्रयोग करना । 3.निबंध लेखन की कला के माध्यम से विचारों को व्यक्त करना। 4. मानवाधिकार, मद्य निषेध ,नैतिक शिक्षा, विज्ञान, वैश्वीकरण आदि महत्वपूर्ण विषयों पर निबंध लिख नवीन ज्ञान प्राप्त करना। 5. वैज्ञानिक शब्दावली से परिचित होना और अभिव्यक्ति का प्रभावी बन जाना।

B.Sc. Non Medical	हिंदी अनिवार्य	HI-04	1.हिंदी साहित्य के मूर्धन्य रचनाकारों और विविध महापुरुषों द्वारा लिखित संस्मरणों के माध्यम से उनके जीवन के विविध पक्षों से प्रेरणा लेना। 3.निबंध लेखन में पारंगत होना और विविध ज्वलंत विषयों की जानकारी प्राप्त होना । 4.कंप्यूटर एवं इंटरनेट के महत्व को समझ पाना । 5.पत्रों के विविध प्रकारों का बोध होना तथा वैज्ञानिक शब्दावली का ज्ञान प्राप्त होना। 6. बुनियादी कंप्यूटर साक्षरता की समझ होना और तकनीकी कौशलों का विकास होना।
B.Sc. Non Medical	BSc 1st(NM) Physics Sem 2nd (Properties of Matter, Kinetic theory and Relativity)	PHY 201	Course outcomes are as: 1) we can compare properties of different Phases of matter. 2) we can describe relationship between motion of molecules and temperature. 3) we can describe different characteristics of different Phases of matter. 4) we can define what is and where we can find it. 5) we can explain different physical properties of different matter. 6) we can explain behaviour of objects in space and time. 7) we can predict light bending due to gravity. 8) we can predict behaviour of Mercury in it orbit.
B.Sc. Non Medical	BSc1(NM) 2nd Sem (Electromagnetic induction and electronic devices	PHY 202	Outcomes are as: 1) we can know relationship between electricity and magnetism. 2) we can use Faraday law to make a generator to produce electricity. 3) we can make transformer. 4) Shopping cashless using a card is possible with application of electromagnetic induction. 5) we can identify basic tools to construct electronic circuits and systems. 6) we can explain constitution and applications of standard circuit configuration. 7) we can describe general operating principles of multiple electronic components. We can identify and describe the applied electronic principles used for radio, television. 8) we can describe electronic components used for communication purposes.
B.Sc. Non Medical	Optics 1	PHY 302	1 learn the Fourier analysis of periodic functions and their applications in physical problems 2 Acquire knowledge to solve the complex integral's and differential equation using Fourier transformation. 3 Learn about ray optics using matrix method. 4 Have understand of interference by division of wave front

B.Sc. Non Medical	Optics 2 (physics)	PHY 402	1 Learn about Huygens Fresnels theory , diffraction at a straight edge and at a circular aperture, diffraction due to a narrow slit and due to a narrow wire 2 Understand and explain the Fraunhofer diffraction, dispersive power of grating and resolving power of telescope &a grating. 3 Understand the theories and laws of polarization along with under Of (i) Plain polarized light (ii)circularly polarized light and (iii) Elliptically polarized light
B.Sc. Non Medical	QUANTUM MECHANICS	PHY 502	1 Know main aspects of the inadequacies of classical mechanics and understanding historical development of quantum mechanics and understand the theory of quantum measurement, wave packets and uncertainty principle. 2 understand the central concepts of quantum mechanics , wave functions, momentum and energy operator, expectation values time dependent and time independent schrodinger equations,Eugene values and Eugene functions and their significance. 3 solve Schrodinger equation for ground state energy and wave functions of various simple quantum mechanical one dimensional potentials
B.Sc. Non Medical	Physics practical (V)	PHY 503	1 Design and study CB&CE AMPLIFIER AND also be able to carry out the measurement of voltage and frequency of periodic wave. 2 design and study of hartley oscillator. 3Learn the fundamentals of the fortran programming languages and their applications in solving simple analytical problems. 4 Hands on experience of using various optical instruments and resolving power of optical equipment.
B.Sc. Non Medical	Nuclear physics	PHY 602	1 Learn about nuclear composition & nuclear properties like size,spin,parity,statistics,magnetic dipole moment quadruple moment and basics of experimental methods to determine the mass and size of nuclei. 2 learn about the mechanism of the emissions of alpha, beta,gamma particles.Also learn some basic aspects of interaction of heavy charged particles and interaction of gamma ray by photoelectric effect ,Compton scattering and pair production, energy loss due to ionisation. 3 Understand the principles and basic constructions of particle accelerators and the detectors of nuclear radiations. 4 Learn the basic aspects of nuclear reactions, the Q- value of such reactions and its derivation from conservation laws and understand the Principle, working and uses of Nuclear fission and fusion reactors ,detectors and counters
B.Sc. Non Medical	Physics practical (VI)	PHY 603	1 learn to present observations, results and analysis in suitable and presentable form. 2Perform experiment to determine band gap of semiconductor materials 3 to determine the hall coefficient of semiconductor sample. 4 Familiar with the use and proper handling of different instruments such as G M counter

B.Sc. Non Medical	BSc(NM)1 Sem Physics (Mechanics)	PHY-101	Outcomes are as 1) Study helps in developing the capacity to predict the effect of forces and motion. 2) Study helps to develop ability to visualize physical configurations in terms of real materials, actual constraints and practical limitations. 3) It help in understanding practical use of flywheel. 4) It helps in understanding physical and mathematical principleo mechanics. 5) It increases ability of students to formulate mechanical problems.
B.Sc. Non Medical	BSc 1Sem. Physics Practical	Phy-103	1) Outcomes of of experimental study of moment of inertia flywheel: a) flywheel experiment, we learn to smooth the output power of energy source. For example, flywheels are used in reciprocating engine to rotate with constant speed due to large value of moment of inertia of flywheel. b) are use in energy storage systems. This is achieved by collecting energy in a flywheel in form of speak that is mechanical energy overtime and then released fastly at the rate more than their abilities of the energy source. 2) outcomes of study of moment of inertia of an irregular body using a Torsion pendulum: a) we can determine moment of inertia of any body of any shape with knowledge of this experiment and moment of inertia of a body has own applications. b) we can determine modulus of rigidity of material of wire which have many applications in industries that is we can measure stiffness of material and know how much material can be extended or shortened under tension /compression. 3) outcomes of study of young's modulus of material of beam by method of bending: a) in this experiment we can investigate the relationship between load, span, height and deflection of beam placed on two bearer . For example, knowledge is used in constructing bridges, houses etc. 4) Outcomes of study of electrochemical equivalent of hydrogen using a voltameter: a) In this experiment, we learn about electrolysis process which have many applications for example depositing a layer of a precious metal over a low cost metal for example gold iron. b) knowledge of this experiment helps us to know which element will act as reducing agent and which will act as oxidising agent. c) we can find electrochemical series which tells us which metal will give H₂ gas and which metal will not give H₂ gas. 5) outcomes of study of characteristics of solar cell: a) we can get knowledge how solar energy is converted into electrical energy using this experiment. b) In experiment, we find efficiency of solar cell converting solar radiation into electrical energy.

			c) Through this experiment , we find an innovative energy source and long-term energy source. d) Through this experiment, we get an economy friendly and renewable source of energy. e) we get pollution free source of energy. 6) outcomes of study of regulation characteristics of zener diode: a) in reverse bias, zener diode gives constant output voltage over a wide range of currents called Zener breakdown condition. b) Zener diode has ability to control constant output voltage and can be used to regulate a voltage source against supply or load variations. 7) outcomes of study of forward and reverse bias characteristics of a semiconductor junction diode: a) In forward biasing,we observed that thickness of depletion layer reduces and hence diode behaves as a short circuit. b) In reverse biasing, we observed that thickness of depletion layer increases and hands diode acts as a open circuit. 8) outcomes of study of AC mains frequency using an electrical vibrator: we can find the frequency of any AC source and that we can use in different applications.In this experiment student learn how stationary waves are formed with nodes and antinodes.
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B.Sc. Non Medical	BSc 1NM 2nd Sem Physics Practical	Phy-203	Outcomes of study of Practicals as 1) outcomes of study of modulus of rigidity of material of a wire by Maxwell needle method: a) we can determine modulus of rigidity of any material in form of uniform wire in a single shot. b) study about modulus of rigidity experimentally gives a measure of how a rigid body is that is it measures degree of rigidity of a body for example modulus of wood is 6.2×10^8 while that of steel is 7.2×10^{10}. 2) outcomes of study of acceleration due to gravity in our laboratory at any place on the earth with the help of a bar pendulum as: a) we can find acceleration due to gravity at any place on the earth with the help of this experiment in simple way. b) by knowing value of g at any point we can find weight of any body at that point and weight of a body plays vital role in solving mechanical problems. 3) outcomes of study of determination of given high resistance by substitution method as a) substitution method is in which a quantity is determined by substituting for it a known quantity which produces the same effect. This method is extensively used in measuring electrical quantities like resistance capacitance and inductance and students are benefited by this experiment in measuring electrical quantity in a simple way. 4) outcomes of study of determination of frequency by sonometer and electromagnet as: a) Sonometre is a diagnostic instrument used to measure tension density. b) students will learn about working of sonometer and electromagnets which have different application. c) Sonometer is used in medical purposes for bone density hearing purposes. 5) outcomes of study of impedance of an AC circuit LCR series circuit as In this experiments we study inductor capacitor and resistor connected in series and find impedance of an AC circuit in simple way. b) Hindi sex comment students learn that for Excel is equal to X equal and opposite impedance is minimum and called series resonance condition series resonance condition provides two and frequency for any AC circuits. c) student verify the results for impedance of AC circuits experimentally as well as through formula. 6) outcomes of study of inverse square law using photovoltaic cell as a) we learn how solar cell current varies with distance of light source. b) students learn how current varies with direction of incident of light on the cell. c) it is very useful in solar cells used for generating electricity that is in arranging solar plates according to sunlight for maximum output. 7) the outcomes of study of surface tension of liquid
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B.Sc. Non Medical	Computer Programming and Thermodynamics	PHY-301	After completion of course students will be able to : 1. Understand the basics of computer organisation and its working. Also they will understand the Fortran language and its programming. 2. Understand the basic concepts of thermodynamics, the first and the second law of thermodynamics, Joule Thomson effect, Joule-Thomson (Porous plug) experiment, the concept of entropy and the associated theorems, calculations of entropy of reversible & irreversible process, T-S diagram and Nernst heat law (third law of thermodynamics) and liquefaction of gases. 3. Derive the Clausius-Clapeyron and Clausius latent heat equations and understand their significance. The students will also be able to learn about Maxwell's thermodynamic relations their physical interpretations.

B.Sc. Non Medical	Practical	PHY-303	After completing the course, students will be able to : 1. use sextant to find area and height of different objects. 2. understand refractive index of material of prism (Glass, calcite or quartz) and its dispersive power. 3. understand concept of resolving power and determine it for telescope. 4. Identify different types of transistors and its different configurations and modes of operation by measuring its characteristics. 5. understand the d.c. power supply by measuring its quality factor. 6. Solve different problems by using Fortran language.
B.Sc. Non Medical	Statistical Mechanics	PHY-401	After completion of course, students will be able to : 1. Understand the concepts of microstate, macrostate, thermodynamic probability and also understand the studies of particles with their distinguishable or indistinguishable nature and statistical fluctuations. 2. Learn the basic Postulates of statistical physics, Phase space, Division of Phase space into cells .Conditions which lead to the three different distribution laws e.g. Maxwell-Boltzmann distribution, Bose-Einstein distribution and Fermi-Dirac distribution laws of particles. 3. Understand the need and application of Quantum Statistics: Bose-Einstein & Fermi-Dirac statistics and be able to articulate the connection as well as dichotomy between classical statistical mechanics and quantum statistical mechanics. 4. Learn to apply quantum mechanics to boson gas and fermion gas. Degeneracy and its effect.
B.Sc. Non Medical	Practicals	PHY-403	After completing the course, students will be able to : 1. Understand relation between wavelength and minimum deviation by plotting a graph. 2. Understand the concept of interference and diffraction by measuring wavelength of Sodium light by using Newton rings and diffraction grating. 3. Understand the concept of resonant circuits and their applications. 4. Solve problems by using Fortran language.
B.Sc. Non Medical	Solid State Physics	U20PHY501A	After completing course students 1. Can Define Atomic packing, Crystal, Lattice, Unit cell and Translation vectors. 2. Explains Crystal systems, Crystal planes and directions, Miller indices, Diffraction of waves by crystals and Bragg's law. 3. Knows Reciprocal space, Reciprocal lattice, Construction of reciprocal lattice, Reciprocal lattice vectors and Diffraction condition. 4. Explains Reciprocal space and Laue equations and Brillouin zone.
Program Name	Course Name	Course Code	Course Outcome

M.A. Political Science			The programme outcomes for Post graduate program in the political science are as follows: - Students would be capable of demonstrating comprehensive disciplinary knowledge gained during course of students. -it would develop ability to communicate effectively on general and political topics with in-depth manner. -It would be beneficial to develop the ability of critical thinking, research based knowledge and political approach. - it would help in building ability to understand political science in a systematic manner. - it would help in creating aptitude to apply knowledge and skills that are necessary for participating in learning activities throughout the life.
M.A. Political Science	International relations-I	19POL103	This paper would help students in understanding the various concepts related to International relations. The knowledge of this paper will surely assist in getting better whereabouts of national power, foreign policy, various theories and world system.
M.A. Political Science	Communication skills in Hindi (open elective course)	18HND100 (19Pol108)	This course is aimed for the holistic development of integrated body, mind and inner soul of the learner. It would help students in developing their communication skills in Hindi and knowing about various basic concepts of communication.
M.A. Political Science	International relations-II	19POL203	This paper would benefit students in developing understanding about the international relations at advanced level as it would help in knowing about Cold War, globalisation, role and relevance of various regional organisations along with knowledge of emerging issues in a changing world such as nuclear politics, climate change, etc.
M.A. Political Science	Communication skills	19POL208	This course would benefit students by improving their fluency in communication and enable them to develop comprehension skills, improve vocabulary, using of proper grammar and basic of communication. It is useful paper to develop the communication skills alongside listening and speaking skills.
M.A. Political Science	India's Foreign policy	19POI304	This paper would help students in learning about the basics of India's foreign policy, the making of foreign policy and also about India & Global economy. It is also beneficial for learning about India and its new security challenges such as NPT, CTBT, NSG, terrorism, climate change and many other challenges.
M.A. Political Science	Human Rights & Duties-I	19POL305(I)	This paper is beneficial to know about human rights, human values, various kinds of duties along with historical foundation of human rights. It would help students in learning about UNO perspectives on human rights. This paper offers so much insight into the human rights in advanced manner.

M.A. Political Science	Public Administration	19 POL 104	This paper would help students in knowing about basic of public administration such as public administration as a discipline, various approaches and theories, basic of organisations and control of accountability of related.
M.A. Political Science	India and the world	19POL404	This paper would be useful to the students to learn about India & it's neighbours, post-cold war countries, regional organisations and United Nations too. It would also help students to learn about India's perspective and its relations with SCO, West Asia, etc.
M.A. Political Science	Human rights & Duties-II	19POL405(i)	This paper offers students learning about human rights & duties within special reference to India. It would be beneficial to students in learning about evolution of human rights & duties in India, various socio-religious movements, enforcement mechanisms and judiciary stands on human rights in India.
M.A. Political Science	Fundamental of Information technology (Theory & Lab)	19POL408	This paper would help students to get a basic understanding of the computer generally used in general office use. Students will also get acquainted with the basic IT tools and packages necessary for day to day office operations.
M.A. Political Science	Seminar	19POL107	This course is aimed for the holistic development of integrated research aptitude of the students. This paper would benefit students in building their better presentation skills and how to write a seminar.
M.A. Political Science	Seminar	19POL207	This course is aimed to develop the writing & presentation skills in the students . This paper would benefit students in building their better presentation skills and how to write a seminar.
M.A. Political Science	Seminar	19POL307	This course is aimed to develop the writing and presentation skills in the students. This paper would benefit students in building their better presentation skills and how to write a seminar.
M.A. Political Science	Seminar	19POL407	This course is aimed to develop the writing and presentation skills in the students. This paper would benefit students in building their better presentation skills and how to write a seminar.
M.A. Political Science	Character building and comprehensive personality (open elective course)	18OEC-100 (syllabus code- 19POL308)	This course is aimed for the holistic development of integrated mind. It would help students in building good character and understanding of various character building related concepts. It is a good course to develop an individual having sound character.
M.A. Political Science	Hobby club	No code	The Hobby club would benefit students in nurturing their hobbies. For this purpose, here they will get an opportunity to join either poetry or gardening club. In the poetry club, students will get a chance to learn the basics of poetry composition & recitation whereas in gardening club, they will get an advantage of learning about the basics of gardening techniques & tree implantation.

M.A. Political Science	Research Methodology	19 POL 105	This paper would help students in building the foundation of research, various sampling types and how to collect primary of secondary data. It would also assist in understanding of various of data such as primary & secondary along with techniques mainly about questionnaire, interview, observation, participation & non - participant.
M.A. Political Science	Current Affairs Analysis	19 POL 106	This paper would benefit students by having proper knowledge of various current affairs topics including UNO & it's agencies, major economic issues of India & global institutions, defence & strategic issues of India & major powers such as USA, RUSSIA, UK, CHINA, JAPAN along with many Political and judicial issues of national importance.
M.A. Political Science	Current Affairs Analysis	19 POL 206	This paper would benefit students by having proper knowledge of various current affairs topics including UNO & it's agencies, major economic issues of India & global institutions, defence & strategic issues of India & major powers such as USA, RUSSIA, UK, CHINA, JAPAN along with many Political and judicial issues of national importance.
M.A. Political Science	Current Affairs Analysis	19 POL 306	This paper would benefit students by having proper knowledge of various current affairs topics including UNO & it's agencies, major economic issues of India & global institutions, defence & strategic issues of India & major powers such as USA, RUSSIA, UK, CHINA, JAPAN along with many Political and judicial issues of national importance.
M.A. Political Science	Current Affairs Analysis	19 POL 406	This paper would benefit students by having proper knowledge of various current affairs topics including UNO & it's agencies, major economic issues of India & global institutions, defence & strategic issues of India & major powers such as USA, RUSSIA, UK, CHINA, JAPAN along with many Political and judicial issues of national importance.
M.A. Political Science	Public Administration- II	19 POL 204	This paper would benefit students in knowing the personnel administration in detailed manner along with financial Administration with special reference to India, various administration law, culture, reforms and public policy & it's process.
M.A. Political Science	Research Methodology-II	19 POL 205	This paper aims to develop the understanding of research methodology at advanced level. It would benefit students in getting whereabouts of processing of data, various statistical techniques, software, use of computer and also about Report of thesis writing.
M.A. Political Science	Contemporary Political Theory	19 POL 301	This course is aimed to develop the basic understanding of contemporary Political Theory mainly about behaviouralism, post behaviouralism, major ideologies, sovereignty, state civil society and democracy. This paper is necessary to acquaint with deeper knowledge of political theory.

M.A. Political Science	Comparative politics and Political Analysis- I	19 POL 302	This course is designed to provide introduction to the comparative politics, various concepts including constitutionalism, judicial review, rule of law, separation of power various form of government. It is a good course to acknowledge the different government system around the global
M.A. Political Science	Contemporary Political Theory- II	19 POL 401	This paper would be helpful in knowing about the basic of Political theory & various Political ideologies. it would also benefit students in knowing about liberty, equality, justice, rights, duties and many other theories in detailed manner.
M.A. Political Science	Comparative Politics and Political Analysis- II	19 POL 402	This paper offers learning about comparative politics & political analysis in advanced manner. it would be beneficial to the students to learn about Political modernization, socialization, Political Culture, Political Elite, Political Parties and also a out various challenges to the democracy. It is helpful paper cto know the democracy from comparative perspective.
M.A. Political Science	Western political thought 1	19POL 101	This paper would help students to know about various Western political thinkers including Plato, Aristotle, st.augustine, st.thomas, Aquinas, Niccolo Machiavelli, Hobbes,Locke, Rousseau, Jeremy Bentham,and John Stuart mill.It would help students in building their basic understanding about Western thoughts.
M.A. Political Science	Indian government and politics 1	19POL102	This paper would assist students to get acquainted with the basic of Indian constitution, nature of Indian federalism, indian executive, legislatures and judicial system.the understanding of this paper will provide a gate way to the Deep knowledge of Indian government and politics
M.A. Political Science	Western political thought (2)	19POL 201	This paper would benefit students in knowing about the western political thought including Hegel, t.h.green, Karl Marx,Mao Zedong,Gramsci,Rosa Luxembourg, John Rawls, Foucault and Hannah Arendt.It would help students in developing understanding about the various theories propounded by the above mentioned thinkers.
M.A. Political Science	Indian government and politics (2)	19POL202	This paper would keep students in developing the understanding of electrical process in india, various political parties electrical politics along with many social justice and statutory commissions and also about major issues and challenges in Indian politics.this paper also provides in depth knowledge about indian politics in systematic manner.
M.A. Political Science	Indian political thought I	19POL303	This paper would benefit students in learning about various indian political thinkers and their ideologies.the main thinkers to be taught in the curriculum include Guru Nanak, kabir,barni, vivekanand, swami dayanand saraswati,pandita ramabai,and many other.It is good course to get acquainted with indian political mind.

M.A. Political Science	Indian political thought II	19POL403	This paper would keep students in learning about indian political thought in advance manner as it offers learning about Lal, Bal,pal, Gandhi, Ambedkar, Deen Dayal Upadhyay, Jai Parkash narayan, Ram Manohar Lohia, savarkar subhash chander Bose.It is quite beneficial paper to know indian minds and their political ideologies.
Program Name	Course Name	Course Code	Course Outcome
M.A. Geography			Compare and contrast the theories, philosophies, and concepts in the discipline of geography, including unifying themes of spatial patterns and structures, the interrelationship between people and places, and the interactions between nature and society.Demonstrate an advanced understanding of and ability to differentiate among the various methodologies used in geographic researchAcquire, analyze, evaluate, interpret and critique geographic data and/or research.Communicate mastery of geographic data, theories, philosophies, and concepts in oral, written, and visual forms, with ethical engagement and respect for diversity of individuals, groups, and cultures.Identify and assess how geographic concepts apply in the workplace and in everyday life to solve real-world problems.
M.A. Geography	Climatology	19GEO-202	Upon successful completion, students will have the knowledge and skills to: On satisfying the requirements of this course, students will have the knowledge and skills to: Critically analyse the interactions between the atmosphere and the surface (topography, vegetation, built structures), and apply this understanding in an environmental decision-making context. Apply an understanding of synoptic processes and the ability to interpret a range of graphical and visual data to the explanation of weather events and forecasting. Analyse and interpret the relationships between large-scale ocean-atmosphere processes and regional-local climates, using simple statistical techniques. Synthesise their understanding of climate processes at a range of scales to explain and critique the applications of climate modelling in research and policy contexts. Create an original piece of research on a self-selected topic, and communicate their results in oral and written formats.

M.A. Geography	BIOGEOGRAPHY	19GEO- 404	Biogeography is the study of the spatial patterns of biological diversity, and its causes, both in the present and in the past. This course will provide the ecological and historical foundations for understanding the distribution and abundance of species, and their changes in distribution and abundance over time. By the end of this course the students should be able: to comprehend the basic principles of biogeography as a discipline; to develop capacity to apply the field methodologies and data analysis techniques used in biogeography; to understand critically human impacts on species distributions and modern conservation strategies
M.A. Geography	Geomorphology	19GEO-101	After the completion of the course, Students will be able to 1. Describing human-environment, and nature-society interactions as well as global human and environmental issues. 2. Identifying and explaining the planet's human and physical characteristics and processes, from global to local scales. 3. Evaluating the impacts of human activities on natural environments. 4. Applying knowledge of global issues to local circumstances to evaluate the local effects of the issues. 5. Showing an awareness and responsibility for the environment.
M.A. Geography	Economic geography	19GEO102	After the completion of the course, Students will be able to 1. Students would be able to 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. 2. Students will be introduced to demographic, social and cultural attributes such as migration, social relations and cultural identity. The main objective is to underline that human activities are subject to adaptation and change. 3. Understand the processes driving spatial economic differences in a global era, and the roles of key factors such as transnational firms and the state. 4. Abstract and utilize information on economic change from a range of different sources.
M.A. Geography	Physical & Socio Economic Landscapes (Theory)	19GEO205	The basic aim of the course is to provide theoretical background for conducting field Survey, its preparation & conduct field work for the understanding Physical & socio-economic landforms

M.A. Geography	Environmental Geography	19 GEO 305 Environmental Geography	After the completion of the course, Students will be able to 1. Describing human-environment, and nature-society interactions as well as global human and environmental issues. 2. Identifying and explaining the planet's human and physical characteristics and processes, from global to local scales. 3. Evaluating the impacts of human activities on natural environments. 4. Applying knowledge of global issues to local circumstances to evaluate the local effects of the issues. 5. Showing an awareness and responsibility for the environment.
M.A. Geography	Social Geography	19 GEO 307	This course aims to familiarize the students with the understanding of the society through concepts and social theories, philosophical approaches and spatial processes, social distortion and various components of social well-being in India.
M.A. Geography	Lab work on Aerial Photographs & Satellite Images (Practical)	19 GEO 310	After the completion of the course, Students will be able to 1. Students will demonstrate knowledge of the foundations and theories of geographic information systems (GIS) and use the tools and methods of GIS. 2. Students will demonstrate their knowledge of physical geography and the methods and techniques for observing, measuring, recording and reporting on geographic phenomena. 3. Students will demonstrate their competence to work individually and as a team to develop and present a client-driven GIS solution. 4. Student will be familiar with modern techniques in Geography. 5. Students will be prepared to apply their skills in professional careers. 6. Usage of diverse remote sensing data for extracting needed geo-spatial information. 7. Execution of various analogue and digital information extraction techniques, both manually and using computers.

M.A. Geography	Remote Sensing Project Report (Practical)	19 GEO 311	After the completion of the course, Students will be able to 1. Students will demonstrate knowledge of the foundations and theories of geographic information systems (GIS) and use the tools and methods of GIS. 2. Students will demonstrate their knowledge of physical geography and the methods and techniques for observing, measuring, recording and reporting on geographic phenomena. 3. Students will demonstrate their competence to work individually and as a team to develop and present a client-driven GIS solution. 4. Student will be familiar with modern techniques in Geography. 5. Students will be prepared to apply their skills in professional careers.
M.A. Geography	Principles of GIS and Navigation System (Theory)	19 GEO 409	After the completion of the course, Students will be able to 1. Students will demonstrate knowledge of the foundations and theories of geographic information systems (GIS) and use the tools and methods of GIS. 2. Students will demonstrate their knowledge of physical geography and the methods and techniques for observing, measuring, recording and reporting on geographic phenomena. 3. Students will demonstrate their competence to work individually and as a team to develop and present a client-driven GIS solution. 4. Student will be familiar with modern techniques in Geography. 5. Students will be prepared to apply their skills in professional careers.

M.A. Geography	Principles of GIS and Navigation System (Practical)	19 GEO 410	After the completion of the course, Students will be able to 1. Students will demonstrate knowledge of the foundations and theories of geographic information systems (GIS) and use the tools and methods of GIS. 2. Students will demonstrate their knowledge of physical geography and the methods and techniques for observing, measuring, recording and reporting on geographic phenomena. 3. Students will demonstrate their competence to work individually and as a team to develop and present a client-driven GIS solution. 4. Student will be familiar with modern techniques in Geography. 5. Students will be prepared to apply their skills in professional careers. 6. To familiarize and enhance the student's knowledge about the Remote Sensing and GIS techniques along with their application value in the Earth observation.
M.A. Geography	GIS Project Report (Practical)	19 GEO 411	After the completion of the course, Students will be able to 1. Students will demonstrate knowledge of the foundations and theories of geographic information systems (GIS) and use the tools and methods of GIS. 2. Students will demonstrate their knowledge of physical geography and the methods and techniques for observing, measuring, recording and reporting on geographic phenomena. 3. Students will demonstrate their competence to work individually and as a team to develop and present a client-driven GIS solution. 4. Student will be familiar with modern techniques in Geography. 5. Students will be prepared to apply their skills in professional careers. 6. Remote Sensing and GIS techniques along with their application value in the Earth observation and enable them to write the project report based on application of remote sensing.

M.A. Geography	Statistical methods in geography	19GEO-104	After the completion of the course, Students will be able to 1. Keeping in view the nature of data and purpose of study, students would be able to make a rational choice amongst listed various statistical methods. 2. Demonstrate understanding of basic concepts of probability and statistics embedded in their courses. 3. Show proficiency in basic statistical skills embedded in their courses. 4. Students shall know how to organize, manage, and present data. 5. Demonstrate ability to write reports of the results of statistical analyses giving summaries
M.A. Geography	Agriculture Geography	19GEO-203	The basic aim of this course is to provide fundamental understanding about concept, origin and development of agriculture; along with recent dynamics, contemporary issues and challenges faced by the agrarian system and communities
M.A. Geography	Geography of India	19GEO-103	After the completion of the course, Students will be able to 1. Identifying and explaining the Indian Geographical Environment, from global to local scales. 2. Applying geographical knowledge to everyday living. 3. Applying knowledge of global issues to a unique scientific problem. 4. Showing an awareness and responsibility for the environment and India. 5. Evaluating the impacts of human activities on natural environments special reference to India.
M.A. Geography	Urban Geography	19GEO-302	1) To understand the linkages between urban cities and the societal forces that shapes it. 2) Critically analyse contemporary urban issues from a geographical perspective. 3) Understand urban issues in order to engage with possible and effective planning and policy interventions.
M.A. Geography	FUNDAMENTAL OF REMOTE SENSING	19GEO-309	1. Disseminate basic concepts and applications of Electromagnetic Spectrum in Remote Sensing, Energy Balance and Data acquisition platforms, sensors and their characteristics. 2. Enhance student's knowledge about optical, thermal and microwaves based Remote Sensing and Applications for solving real life problems. 3. Introduce students to digital image processing tools and techniques.
M.A. Geography	Cartography and Morphometric Analysis (Theory)	19GEO-105	The completion of the course, Students will be able to Students would be able to basic understanding of Cartography, Thematic mapping & to provide the training for spatial Data Analysis.

M.A. Geography	Regional Development and planning	19 GEO-401	The basic aim of this course is to provide the theoretical foundations and conceptual framework for the regional development process. It also sensitizes the students about the changes taking place in regional structure of Indian economy, about the concept of region in Geography and the regional development and planning process in India.
M.A. Geography	Settlement Geography	19GEO-407	This course aims to provide the understanding about historical development, patterns, types of settlement system in India and world.
M.A. Geography	IT for Spatial Science	20GEO-208	Main objective of this course is to introduce the IT tools and its applications in Geography. It also aims to provide an understanding to the students about basic computing skills and its usefulness in GIS and other modern geographical technologies.
M.A. Geography	Cartography practical	19GEO-106	The aim of the course is to apprise the students with latest trends in the development of cartography as a tool in mapping thematic and quantitative data to facilitate spatial analysis and synthesis, and to provide training in application of modern tools and techniques to data in a variety of regional studies at local, regional and national levels.
M.A. Geography	Morphometric practical	19GEO-107	The aim of the course is to apprise the students with latest trends in the development of cartography as a tool in mapping thematic and quantitative data to facilitate spatial analysis and synthesis, and to provide training in application of modern tools and techniques to data in a variety of regional studies at local, regional and national levels.
M.A. Geography	Field work of socio - economic	19GEO-207	Main objective of this course is to provide the students with the understanding of ground reality of a chosen village/town by observation; mapping of land quality, land use and cropping pattern and conducting Socio-economic survey of the households with the help of a specially prepared questionnaire.
M.A. Geography	Oceanography	19GEO301	After the completion of the course, Students will be able to many facets of Oceans, such as, evolution of the oceans, physical and chemical properties of sea water, atmospheric and oceanographic circulation, the fascinating world of marine life and the characteristic of marine environment and the impact of man on the marine environment.
M.A. Geography	Population & Settlement Geography	19GEO- 204	After the completion of the course, Students will be able to fundamental understanding about population, its distribution, structure and composition and idea for settlement, evolution, types and its association with population geography.

M.A. Geography	Geography of Haryana	19GEO402	After the completion of the course, Students will be able to glorious past of the state of Haryana, its Physiography, Climate, People, Society, resource base and Economic structure.
M.A. Geography	Project report based on Physical Landscapes (Practical)	19GEO- 206	After the completion of the course, Students will be able to structure, landforms, their evolution & genesis and their association with the flora, fauna & human activities in the selected area.
M.A. Geography	चरित्र निर्माण एवं समग्र व्यक्तित्व विकास	18HND100	1.चरित्र निर्माण की अवधारणा एवं विकास को समझकर चरित्र निर्माण कर पाना। 2.व्यक्तित्व विकास के महत्व को जान व्यक्तित्व को निखारने के लिए प्रयास करना । 3.स्वामी विवेकानंद जी जैसे महापुरुषों के जीवन से प्रेरणा ग्रहण करना। 4. उपनिषदों में वर्णित पाँच कौशलों(अन्नमय कोश, प्राणमय कोश, मनोमय कोश, विज्ञान कोश, आनंदमय कोश)का ज्ञान प्राप्त होना। 5. शरीर को निरोग एवं स्वस्थ रखने की प्रेरणा पैदा होना। 6. शरीर की संरचनात्मक विकास की प्रक्रिया एवं महत्व को समझ पाना। 7. मनोविकारों से मुक्त होकर अपने लक्ष्य को प्राप्त करना।
M.A. Geography	हिंदी संचार कौशल	18HND100	1.संचार के स्वरूप एवं भाषा संप्रेषण के विभिन्न चरणों की समझ पैदा होना। 2. साक्षात्कार ,भाषण एवं पत्र लेखन की कला में पारंगत हो पाना। 3. हिंदी की विविध बोलियों एवं इतिहास का ज्ञान होना । 4.मुहावरे एवं लोकोक्तियों का प्रयोग कर अपनी अभिव्यक्ति को प्रभावी बनाने की क्षमता का आ जाना। 5. अनुवाद के स्वरूप एवं महत्व को समझ पाना। 6. प्रभावी संप्रेषण कौशल का पैदा होना।
Program Name	Course Name	Course Code	Course Outcome

M.Sc. Mathematics			After successful completion of the program a student will be able to:- (1) Have basic understanding and the knowledge in the different core areas of mathematics such as algebra ,analysis ,calculus, differential equation, mechanics numerical analysis and in some the Other elective areas demonstrate understanding of the concepts, theories methods from such area of Mathematics. (2) Have a Broad background in mathematics and develop the essential mathematical reasoning,knowledge,skills aptitude to pursue further studies and research in mathematics. (3) Communicate mathematics effectively percisely by written,computational and graphical means. (4) Apply knowledge,understanding, methods, techniques and skills of mathematics to analyze, evaluate and the solve problem of mathematics and /or the mathematical problems having applications in engineering science, technology, life science, social sciences so as the enhance career prospects in different field.
M.Sc. Mathematics	Abstract Algebra -1	18MTH-101	The subject of algebra is one of the main pillars of modern mathematics. After studying this paper learner will be able to illustrate the concept of some algebraic structure called groups, normal subgroups, slow groups, rings and linear transformation. Student will also be able to explain about composition series of a group, number of sylow subgroup,simple group and Jordan form of matrices.
M.Sc. Mathematics	Ordinary differential equations	18MTH-102	Differential equations are very important in mathematical modelling of physical system. Many fundamental laws of Physics and Chemistry can be formulated as differential equations. In biology and economics differential equation are used to model the behaviour of complex system. After studying this paper learner will be able to illustrate the concept of identification of differential equations some analytical technique to find solutions.
M.Sc. Mathematics	Mechanics	18MTH-103	After studying this paper,learner will be able to illustrate the concept of dynamics of system of particles and motion of rigid body. Also student will able to explain equation of motion for complicated mechanical systems.
M.Sc. Mathematics	Measure and Integration	18MTH-104	After studying this paper, students will able to illustrate the concept of countable and uncountable sets. measurability of sets and functions. Also study Lebesgue integral and Lebesgue L_p spaces to sharpen the students appetite for the functional analysis. Learner will understand that lebesgue is more general then Riemann integration theory.
M.Sc. Mathematics	Mathematical statistics	18MTH-105	Statistics as an important application in study of applied mathematics. After studying this paper student will learn about the concept of probability, statistical distributions. students will able to illustrate the concept of testing hypothesis. Student gets to learn the application of mathematics and its relation to the real world.

M.Sc. Mathematics	Computing lab-1(Introduction to Ms-excel and Programming in Fortran)	18MTH-106	After the end of the course students will able to:- 1.apply the concept of fortran 90 in Real world problems. 2.use the knowledge gained to write F90 codes. 3.Compile and run F90 codes and produce meaningful output. 4.Learn about various elements of the fortran 90 language. 5.basic knowledge of MS Excel.
M.Sc. Mathematics	Mathematical lab-1 & Seminar	18MTH-107	After end of this course students are able to :- 1. Learn adopting time scheduling technique to solve problem in different field of mathematics. 2.Also able to develop writing skill in manner of creativity and originality. The students are to the emphasis his/ her own ideas /words which he/she has learn from different book and generals and newspapers.
M.Sc. Mathematics	Mathematical lab-2 & Seminar	18MTH-207	After end of this course students are able to :- 1. Learn adopting time scheduling technique to solve problem in different field of mathematics. 2.Also able to develop writing skill in manner of creativity and originality. The students are to the emphasis his/ her own ideas /words which he/she has learn from different book and generals and newspapers.
M.Sc. Mathematics	Mathematics lab-3 and Seminar	18MTH-312	After end of this course students are able to :- 1. Learn adopting time scheduling technique to solve problem in different field of mathematics. 2.Also able to develop writing skill in manner of creativity and originality. The students are to the emphasis his/ her own ideas /words which he/she has learn from different book and generals and newspapers.
M.Sc. Mathematics	Mathematical lab-4	18MTH-412	After end of this course students are able to :- 1. Learn adopting time scheduling technique to solve problem in different field of mathematics. 2.Also able to develop writing skill in manner of creativity and originality. The students are to the emphasis his/ her own ideas /words which he/she has learn from different book and generals and newspapers.
M.Sc. Mathematics	Environment and Energy Management	EEM - 100	This course provides the basic understanding of the close relationships between the Environment and energy . It will enlighten the challenges , our responsibilities, and multifaceted management of the resources to balance between the two. In addition, this subject will also educate the students to apply their knowledge in understanding and solving the Environmental issues in day to day life.
M.Sc. Mathematics	Abstract Algebra-2	18MTH-201	After studying this paper student will be able to illustrate the concept of the models and the field extension. also students will be familiar with the concept of Galio's theory.
M.Sc. Mathematics	Complex Analysis	18MTH-202	After studying this paper, Student will able about functions of complex variables, Cauchy integral formula. Also will be able to illustrate the concept of singularity, improper integral and some special transformations.

M.Sc. Mathematics	Topology	18MTH-203	After studying this students will be familiar with the topological spaces compactness connectedness and separation axioms. Also student will be able to prove sum result of real line with the use of topological approaches.
M.Sc. Mathematics	operation research techniques	18MTH-204	After studying this course, students will be able to illustrate the concept of Optimization techniques and LPP. Also student will be familiar with transformation problem, assignment problem, queuing models and inventory control models.
M.Sc. Mathematics	Partial differential equations	18MTH-301	After studying this paper, will be familiar with the theory of partial differential equations, solution methods. Also students will be able to illustrate the solution of wave equation, heat equation and Laplace Equation using method of separation of variables.
M.Sc. Mathematics	Mechanics of solids-1	18MTH-303	After studying this paper, student will be able to illustrate the concept of cartesian tensor, stress, strain. Also will learn about Complex state of stress. Student also be familiar with the theory of elasticity.
M.Sc. Mathematics	Analytical Number theory	18MTH-306	After studying this paper, Student will be able to illustrate the concept of the divisibility and linear congruences. Also student will be familiar with the Diophantine equations, quadratic congruences and some theoretic functions.
M.Sc. Mathematics	Functional analysis	18MTH-401	After studying this paper, Student will be able to illustrate the concept of normal spaces, inner product spaces, linear operators. Also learner will be able to explain the natural embedding concepts and conjugate spaces.
M.Sc. Mathematics	integral equations and calculus of variations	18MTH-402	after completion of this course, learner will be able to illustrate the concept of linear integral equation. Also student will be familiar with the calculus of variations and extremization of functional
M.Sc. Mathematics	Mechanics of solids-2	18MTH-403	After studying this paper learner will be illustrate the concept of stress, strain, torsion of beams and variational method. also learner will be familiar with the concept of viscoelasticity Elastic wave.
M.Sc. Mathematics	Computing lab-4 (Programming in LaTeX and Mathematica)	18MTH-411	after the end of the course, students will be able to:- 1. Understand the basic of latex and various command associated with it. 2. Student able to manipulate the numerical and algebraically mathematical concept with the help of mathematica. 3. Understand the basic knowledge of mathematics and various command associated with it.
M.Sc. Mathematics	Self study paper	18MTH-413	This course create habits of reading books and develop writing skills in the manner of creativity and originality in students.

M.Sc. Mathematics	Computing lab-2 (Programming in C-Language)	18MTH-206	After the course, students will be able to:- 1. Identify situations where computational method and computers would be useful. 2. Identify and the Abstract the programming tasks involved of the given problem. 3. Write a program on the computer, edit, compile, debug, correct, Recompile and run it. 4. Approached the programming task using the techniques learned and write a pseudo-code.
M.Sc. Mathematics	Computing Lab-3 (Programming in MATLAB)	18MTH-311	After end of the course, students will be able to:- 1. Use matlab effectively and analyze and visualisation data. 2. Design and document computer program and the analyses in careful and complete manner in the MATLAB. 3. Create and control simple plot and user interface graphic object in MATLAB.
M.Sc. Mathematics	Communication skills	18CS-100	Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts, e.g., interpersonal, intrapersonal, small group, organizational, media, gender, family, intercultural communication, technologically mediated communication, etc.
M.Sc. Mathematics	Open elective-1 (Hindi sanchar kaushal Communication skill in Hindi)	18-HND-100	Students will be able to understand and apply knowledge of human communication and language processes as they occur across various contexts.
M.Sc. Mathematics	Discrete mathematics	18 MTH 305	After studying this paper, students learned about logics and proofs, recursion, graph theory, Boolean Algebra, Lattices and other important discrete maths concepts. It helps students to choose the research area in the field of mathematics.
M.Sc. Mathematics	Statistical Inference	18 MTH 408	After studying this course students will be able to illustrate the conclusion about the whole population on the basis of sample. Also students will be familiar with the concepts of estimation, unbiasedness, sufficiency, consistency, statistical hypothesis and non parametric theory.
M.Sc. Mathematics	Mathematical Modelling	18MTH 406	After studying this course students will be able to illustrate the concept of mathematical modelling using the various techniques to describe and explore real world data and phenomenon. Also students will be learn about application of mathematical in various field.
M.Sc. Mathematics	Differential Geometry	18MTH 302	After studying this paper, Students will be able to know about the fundamentals of differential geometry primarily by focussing on the theory of curves and surface in three spaces. Also students will be able to explain the differential properties of curves and theory of surfaces.

M.Sc. Mathematics	Computational Techniques	18MTH 205	This course helps the students to develop the mathematical skills in the area of numerical methods and use them in large number of engineering which requires solution of linear equations, finding eigen values, eigen vectors, interpolation and applications solving ODEs. To lay foundation of computational mathematics for post graduates students, specialized students and research, as these techniques are integral part of computer engineering. These techniques are mainly used in the area of mathematics and computer science that creates analysis and implements algorithms for solving numerical problems of continuous mathematics.
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