BLJS College, Tosham

PROGRAM OUTCOMES
PROGRAM SPECIFIC OUTCOMES
COURSE OUTCOMES

2023-2024

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PROGRAMME OUTCOMES, PROGRAMME SPECIFIC OUTCOMES, COURSE OUTCOMES

Academic Session 2023-2024

Bachelor of Arts (B.A.)

This Course is a Govt. Aided Course to meet the demands of the students who are interested to pursue their career in humanities with various subject combinations such as Political Science, Economics, Sanskrit, Psychology, Geography, History, Mathematics, Physical Education, Computers, Environmental Science with English and Hindi as the compulsory subjects.

PROGRAM OUTCOME (PO)

PO 1.	The expected outcome of the program is to give students a multidisciplinary approach that helps them build their social analytical skills and in pursuing multitasking courses and profession
PO 2	The students acquire knowledge in the field of social sciences, literature and humanities which make them sensitive and sensible enough.
PO 3	The B.A. Graduates will be acquainted with the social, economical, historical, geographical, political, ideological and philosophical tradition and thinking.
PO 4	The program also empowers the graduates to appear for various competitive examinations or choose the postgraduate programme of their choice.
PO 5	The program enables the students to acquire the knowledge with human values framing the base to deal with various problems in life with courage and humanity.
PO 6	The students will be ignited enough to think and act over the solution of various issues prevalent in human life to make this world better than ever.

PROGRAM SPECIFIC OUTCOMES (PSO)

PO 1	Different set of subject combinations suitable for rural students
PO 2	Provides ample opportunities based on the choice of the student and their interest.
PO 3	Students with this course can go for higher education
PO 4	Students would be able to use critical thinking to evaluate and interpret evidence, and to apply various concepts, theories, and research findings to individual, social, and cultural issues.
PO 5	This course has high potential which enables a student to mould according to the career path / higher studies options available throughout the nation.

Compulsory Subjects:

हिन्दी

हिन्दी हमारी राष्ट्रीय भाषा ,राजभाषा एवं मातृभाषा होने के नाते प्रत्येक भारतीय को हिन्दी का ज्ञान होना अति आवश्यक है।हिन्दी स्नातक डिग्री के लिए एक अनिवार्य विषय है।स्नातक डिग्री पास करने के बाद हिन्दी विषय में विद्यार्थी एम०ए० बी०एड० की डिग्री प्राप्त कर सकते हैं।बी० एड० पास के बाद विद्यार्थी एक अच्छा अध्यापक बन सकता है या फिर अन्य क्षेत्र में नौकरी प्राप्त कर सकता है।

विद्यार्थी कबीरदास, सूरदास,तुलसीदास जैसे सुप्रसिद्ध कवियों की मानवीय मूल्यों की शिक्षा को जीवन में उतारकर हिन्दी साहित्य के इतिहास को पढ़कर परम्परागत रूढ़ियों का अध्यन कर समाज को जागरूक करके समाज की राजनीतिक ,धार्मिक,सामाजिक,जाग्रति में अपनी भूमिका अदा कर सकता है।

विद्यार्थी प्रेमचंद,जयशंकर प्रसाद,अज्ञेय जैसे सुप्रसिद्ध कहानियों को पढ़कर लेखन के क्षेत्र में व सरकारी और निजी क्षेत्र में अनुवादक,रेडियो वाचक व सोशल मीडिया में अच्छा रोजगार प्राप्त कर सकता है।

English

Programme Specific Outcome

- English is a global language and it is needed most everywhere and the subject English helps in improving communication skills.
- Literature reading prepares students for better understanding of life. It also instills in them critical analytical power , flair for the language, enrich expressive ability etc.
- Grammar section of the subject builds up their grammatical ability and they become better equipped to communicate their thoughts and emotions.
- As far as the scope of the subject is concerned. We can ignore it at our own risk. Better communication is a must in every sphere of life. So English language teaching has a bright future even in the coming years

List of courses:

1. **Semester I** **Course Code :20UENG01**
   Course Name: Language And Literature- I
2. **Semester III** **Course Code :20UENG02**
   Course Name: Language And Literature- II
3. **Semester III** **Course Code :20UENG03**
   Course Name: Language And Literature- III
4. **Semester IV** **Course Code :20UENG04**
   Course Name: Language And Literature- IV
5. **Semester V Generic Elective Course A (i)**
   Course Code :20UENG051
   Course Name: Academic Writing and Composition
6. **Semester VI Generic Elective Course B (ii)**
   Course Code :20UENG062
   Course Name: Women's writing and Women's empowerment

Course Outcomes (Semester I to VI)

1. It helps the students into the world of literature through value based writings of Indian and English authors.
2. It will enhance the linguistic and literary skills of the students by making

them familiar with the important literary works in different genres like modern prose, poetry and grammatical rules.

3. The student will be able to develop the skills of excellent writing and communication by understanding proper format and technical use of the language.
4. It will also improve grammatical and writing skills of students and prepare them for the competitive exams at different levels and in different fields and provide ample career opportunities ranging from teaching jobs to media-related professions.
5. They will also get acquainted with women's struggle and their role in society and understand how women voice their issue through writing.

Semester I/II Ability Enhancement Compulsory Course (For B Sc)
Course Code :21ENG1000
Course Name: Communicative English

Course Outcome:

1. Students will be able to understand the nature and importance of communication skills.
2. Students would gain knowledge of common courtesies and conversational practices in various situations.
3. Students would be acquainted with the knowledge of skills necessary for personality development.
4. Students would be able to demonstrate the skills and knowledge of effective communication.

Subject combinations Available:

A student can opt one of the following subject combinations, being Hindi and English as compulsory subject in each semester and Computers and Environmental Science in either of odd sessions of their education.

1. History and Political Science
2. History and Geography
3. History and Physical Education
4. Geography and Mathematics
5. Geography and Psychology
6. Psychology and Political Science
7. Psychology and Economics
8. Sanskrit and Physical education
9. Physical Education and Economics
10. Economics and Mathematics
11. Sanskrit and Political Science
12. Sanskrit and Mathematics

COURSE OUTCOME: ECONOMICS

Semester I **Course Code :20UECO-201** **Course Name: Micro Economics I**	
CO 1	It gives the foundation for economic analysis and problem solving.
CO 2	Students would be able to analyse consumer behaviour and consumer decisions.
CO 3	A thorough understanding on firm's production processes and decisions
CO 4	Know how to solve basic micro economic problems.
CO 5	Learn to apply micro economic tools and techniques in the operation of real economy
Semester II **Course Code :20UECO-202** **Course Name: Micro Economics II**	
CO 1	The student will be able to understand market and factor pricing patterns.
CO 2	The course familiarizes students to Welfare Economics
CO 3	Provide an understanding of micro economic concepts and how to use that concept to solve specific questions
CO 4	Helps to understand the behavioural pattern of consumers in various market situations
CO 5	Enable the students to use economic tools and principles in the analysis of economic policies
Semester III **Course Code :20UECO-203** **Course Name: Macro Economics I**	
CO 1	Provides a thorough understanding of economic issues and how to treat them in macro perspectives
CO 2	Provides an understanding of system of accounts of Government of India
CO 3	Helps to understand National income, National income accounting and GDP and its measurement
CO 4	Helps to understand the factors of determination of National income like consumption function, investment function etc
CO 5	Better understanding of Government policies regarding expenditure and taxation
Semester IV **Course Code :20UECO-204** **Course Name:Macro Economics II**	

CO 1	Provides the understanding of demand and supply and theories regarding rate of interest, credit creations by commercial banks and monetary policy of the government, role of monetary and fiscal policies to address economic issue
CO 2	Helps to understand the trade cycles in the economy and models regarding growth of the economy
CO 3	To understand the public finance and the public expenditure and good taxation system in the country
CO 4	Thorough understanding of post Keynesian schools of thought
CO 5	To know about the various factors contributing to inflationary and deflationary pressures
Semester VI **Course Code: 20U ECO-205 (DSEC-I)** **Course Name: Indian Economy**	
CO 1	The student will be able to understand nature and characteristics of Indian economy
CO 2	It will give a better understanding of basic economic indicators.
CO 3	The student will come to know about basic concepts of structural changes in Indian economy
CO 4	He will be able to analyze the different policies
CO 5	The student will gain a better understanding of programmes and problems related to the service sector in India.
Semester VI **Course Code: 20U ECO-209 (DSEC-II)** **Course Name: Development Economics**	
CO 1	Student acquaint with the basic concepts and issues of growth and development
CO 2	Provide an insight into the modern approaches to economic development
CO 3	Know how to measure National Income.
CO 4	An insight into the need for sustainable economic development
CO 5	Study about Human Development Indicators and their role in designing development programmes

COURSE OUTCOME: PSYCHOLOGY

Semester I **Course Code :20UPSY 101** **Course Name: Foundation of Psychology (CC)**	
CO 1	The student will learn about the history of psychology, its emergence and subject matter of psychology.
CO 2	Will acquire knowledge of various methods used in study of psychology
CO 3	Will gain knowledge about basic concept, principles, terminology and important trends of Perception, Emotion, Motivation, Intelligence and Personality etc. theoretically.
Semester II **Course Code : 20UPSY 201** **Course Name: Social Psychology (CC)**	
CO 1	The student will learn about basic nature and subject matter of social psychology.
CO 2	Will come to know about components, processes and functions of various social groups and institutes.
CO 3	Learn about various interpersonal processes on micro and macro level
CO 4	Will gain better knowledge of social dynamics and social behaviour.
Semester III **Course Code : 20UPSY 301** **Course Name: Psychological Disorders (CC)**	
CO 1	Will understand concept of normality and abnormality.
CO 2	Learn about classification of psychopathology, DSM system.
CO 3	Learn about etiology, symptoms and prognosis of vario and disabilities
CO 4	Learn about substance abuse, its causes, consequences and rehabilitation.
Semester III **Course Code : 20UPSY 401** **Course Name: Statistical Methods and Psychological Research (CC)**	
CO 1	Will be acquainted with the concept of statistics and Measurement
CO 2	Learn about data organization, presentation and calculation.
CO 3	Will gain knowledge of different aspects of psychological testing and measurements
CO 4	Will be able to use qualitative methods of testing, particularly interview, observation and case study.

Semester V **Course Code : 20UPSY 503** **Course Name:Developmental Psychology (DSE)**	
CO 1	Appraise the students to the shades of development as a process.
CO 2	Explain and analyze the theoretical viewpoints in relation to Developmental Psychology
CO 3	Develop the skills to analyze etiology, symptoms and prognosis of developmental disorders.
CO 4	Developing knowledge and skills in different aspects of Learning and Motivation as implied in Educational Settings
Semester VI **Course Code :20UPSY 602** **Course Name: Counselling Psychology (DSE)**	
CO 1	Acquire knowledge of counselling- its need, principles and approaches.
CO 2	Understand various types and techniques of counseling
CO 3	will know about counselling in different settings and applications of different methods.

Personality Development (NCCC) for BA/B.Com/B Sc Pass course

Course code: 22PSY101

The course helps student to understand about various personality traits and making students aware of the various dynamics of personality development.

The student will be able to understand, analyse, develop and exhibit an accurate sense of self and others.

COURSE OUTCOME: HISTORY

Semester I **Course Code: 20 UHIS 101** **Course Name: History of India from earliest times up to 300 CE**	After studying this course the student will acquire knowledge regarding the primitive life and cultural status of the people of ancient India. They can gather knowledge about the society, culture, religion and political history of ancient India as well. They will learn about the origin of the Indian empire, trade and urbanizations of ancient civilization, like Harappan civilization, Vedic civilizations, later Vedic civilizations etc. The students will also learn about Harappan Civilization, Vedic Culture, Janism, Buddhism, Mauryan, Post Mauryan Period.
Semester II **Course Code: 20 UHIS 201** **Course Name: History of India from 300 AD to 1256 AD**	The student will get knowledge of positive and negative points of Medieval India and so he can be aware of future outcomes of such kinds of events. They will come to know about rise and growth of the Guptas empire, Polity, society, economy and culture of South India, changes in early medieval period in society economy and culture, evolution of different political structures. They will also know about the emergence of Rajput states in Northern India and invasion of Arabs in Sindh.
Semester III **Course Code: 20 UHIS 301** **Course Name: History of India from 1206 To 1707 AD**	After studying this course the student will come to know about Delhi saltanat in detail. They will get knowledge of Bhakti and Sufi movement, come to know about provincial Kingdoms of Mewar, Bengal, Vijaynagar etc and also emergence and consolidation of Mughal state. Learn about the weaknesses of India of that time and come to know why the India was conquered by foreign powers
Semester IV **Course Code: 20 UHIS 401** **Course Name: History of India from 1707 to 1950**	The student will get knowledge of Colonial power and Revolution of 1857. They will learn about social religious movements in the 19th century. They will get insight of freedom struggle of India.

Semester V **Course Code: 20 UHIS 501 Option I** **Course Name: History of Haryana**	After studying this paper the student will get knowledge of his own state's culture and history. Learn about culture, Civilization, emperors, Arts and architecture , religious movements and contribution in freedom movement of Haryana.
Semester VI **Course Code: 20 UHIS 601 Option I** **Course Name: Modern World**	After studying this paper the student will get ample knowledge of political,social and economic changes of the modern world. They will study about economic development, different revolutions and stages of development. They will also know about political development in world, emergence Of colonialism in India and other countries, first and second world war and non alignment movement. In addition to this will be able to mark all this on maps as well.

COURSE OUTCOME: GEOGRAPHY

Semester I **Course Code: 20 UGEO 101** **Course Name: Geography of India**
The basic aim of the course is to provide comprehensive understanding of the geographical profile of India and establishing linkages with systematic and regional geography. Along with this course also provides understanding about geographical attributes in determining social and economic structure of the country.
Semester I **Course Name: Basic Cartography (Practical)**
Geography is an amalgam of physical as well as social sciences. This course aims to provide basic understanding of particular techniques of drawing cartograms to show physical, climatic and socio-economic attributes of a region. To achieve this objective, the concept of scale is to be understood at the initial stage of learning.
Semester II **Course Code: 20 UGEO 201** **Course Name: Economic Geography**
Main objective of this course is to provide the basic understanding of spatial organization of economic activities, their types and basic determinants.
Semester II **Course Name: Statistical Techniques & Representations of Socio-economic Data (Practical)**
To provide basic understanding to the students about basic statistical techniques and representation of socio-economic data on map with the help of various diagram.
Semester III **Course Code: 20 UGEO 301** **Course Name:Physical Geography**
Main objective of this course is to introduce the students to basic and fundamental concepts of physical geography and geomorphology.
Semester III **Course Name: Topographical Sheets & Map Projections (Practical)**
Topographical Sheets & Map projections are necessary for accurate transformation of 3D Earth to 2D surface. The aim of this course is to develop basic understanding of Topographical Sheets, their interpretation and selection of suitable projection for map making.

Semester IV **Course Code: 20 UGEO 401** **Course Name: Human Geography**
This course aims to acquaint the students with nature of man-environment relationship and human capability to adopt and modify the environment under its varied conditions from primitive life style to the modern living, to identify and understand environment and population in terms of their quality and spatial distribution pattern and to comprehend the contemporary issues faced by the global community.
Semester IV **Course Name: Chain and Tape, Plane Table & Prismatic Compass Survey (Practical)**
The main aim of this course is to provide the basic understanding about different types of surveying instruments and their application in geographical mapping.
Semester V Course Code: 20 UGEO-501 **Course Name: Geomorphology**
The students will understand the theories and fundamental concepts of Geomorphology. Gain knowledge about earth's interior, its tectonic and structural evolution. Acquire knowledge about types of folds and faults and earthquakes, volcanoes and associated landforms. They will know more about natural hazards and the subject's importance for human beings.
Semester V **Course Name: Remote Sensing & GIS (Practical)**
Main objective of this course is to enrich the students with basic understanding of aerial photographs and satellite imagery. It also aims to provide hands on training on GIS software and map making and application of GPS & TS in mapping.
Semester VI Course Code: 20 UGEO-604 **Course Name: Urban Geography**
The student will be able to get basic understanding of urbanization, growth, urban settlements and contemporary issues related to urban areas with special reference to India.
Semester VI **Course Name: Field Survey (Practical)**
To provide the basic understanding about the identification of research problem, planning for survey, conduct of Physical and Socio-economic Survey and report writing.

BA with PHYSICAL EDUCATION

List of Courses:

Sem I	**21 UPHY 101**	**Foundations of Physical Education**
	21 UPHY 102	**Practical**
Sem II	**21 UPHY 201**	**Health, Hygiene and Nutrition**
	21 UPHY 202	**Practical**
Sem III	**21 UPHY 301**	**Psycho-physiological basis of Physical Education**
	21 UPHY 302	**Practical**
Sem IV	**21 UPHY 401**	**Basics of Sports Education**
	21 UPHY 402	**Practical**
Sem V	**21 UPHY 502**	**Yoga Science (DSE)**
	21 UPHY 502A	**Practical**
Sem VI	**21 UPHY 601**	**Organization and Administration of Physical Education (DSE)**
	21 UPHY 601A	**Practical**

COURSE OUTCOME (Semester I to VI):

- After completion of this course graduate students will be able to apply knowledge of physical education for growth and development, to play sports games
- Will be able to use understanding of the history of yoga, ashtanga yoga effectively in everyday life.
- After the completion of this course the student will learn about health, personal hygiene, different health problems- prevention and control, physical fitness and Wellness and first aid management.
- The student will be able to understand the basics of anatomy, physiology and different body systems.
- On completion of this course a student can have his hands of experience to perform in various sports like long jump, highjump, discus throw, javelin throw etc. They will be having the concept of track and field events also.
- After completing graduation the student can get help in his career as weightage at entry level of various government jobs. They can be a sports person or get a degree in yoga for being a yoga teacher. Simply they can be a sports teacher in schools, colleges and universities.

COURSE OUTCOME: POLITICAL SCIENCE

Semester I **Course Code :20UP0L 101** **Course Name: Indian Government and Politics**	
Students will be shaped as citizens who are aware of the ideals and philosophies of the Indian constitution, constitutional rights and duties, functions and structures of government institutions, center-state relations and electoral policies in India. They will also be aware of social movements in India	
Semester II **Course Code :20UP0L 201** **Course Name: Introduction to Political Theory**	
The student will learn about the meaning and dimensions of politics, will come to know about Political Theory, its nature, scope and relevance.They will also acquire deep understanding of basic concepts of politics.	
Semester III **Course Code :20UP0L 301** **Course Name: Comparative Government and Politics**	
CO 1	The student will get insight into political analysis.
CO 2	The student will be able to compare different regimes.
CO 3	The student will acquire knowledge about political systems.electoral system and party system.
CO 4	Will get insight into contemporary debates in the context of globalization
Semester IV **Course Code :20 UP0L 401** **Course Name: Introduction to International Relations**	
CO 1	The student will acquire knowledge about international relations,its various approaches to and challenges.
CO 2	The student will learn about India's foreign policy and its basic determinants, India's policy of non alignment and India as an emerging power
CO 3	Will study about globalization and its challenges.
Semester V **Course Code :20 UP0L 502** **Course Name: Indian Political Thought (DSE)**	
The student will gain knowledge about Indian political thoughts from ancient era to present. He will be able to comprehend and compare the ideology of different Indian political thinkers like Raja Rammohan Roy, Vivekanand, Ambedkar, Mahatma Gandhi etc.	

Semester VI: **Course Code :20UP0L 602** **Course Name: Indian Foreign Policy (DSE)**
The student will learn about foreign policy of India, its historical development, salient features and contemporary challenges. The student will be able to comprehend India's relation with other countries and UN, security concerns and policy of Non-alignment.

COURSE OUTCOME : SANSKRIT

विभिन्न विषय संयोजनों में छात्र संस्कृत के रूप में एक विषय का चयन कर सकते हैं। संस्कृत साहित्य के अध्ययन से विभिन्न प्रकार की पौराणिक एवं वैदिक शिक्षाओं का ज्ञान विद्यार्थियों को मिलता है ताकि वर्तमान समय में प्राचीन-अर्वाचीन शिक्षाओं में सामंजस्य स्थापित कर जीवन को सुचारू रूप से चला सके। संस्कृत विषय में विद्यार्थी विभिन्न पुस्तकों का अध्ययन अलग-अलग सत्रों में करते हैं जिन की उपयोगिता जीवन में निम्न प्रकार से है-

स्नातक प्रथम वर्ष

Semester I

Course Code: 21USKT101

Course Name: Poetry(CC)

1. हितोपदेश- इस ग्रंथ को पढ़ने से विद्यार्थियों को लोक व्यवहार के ज्ञान के साथ-साथ नैतिकता का भी ज्ञान होता है।
2. व्याकरण- व्याख्यान पढ़ने से विद्यार्थियों को भाषा की शुद्धि व अशुद्धि का ज्ञान होता है तथा उच्चारण एवं लेखन की शुद्ध जानकारी प्राप्त होती है।
3. दूतवाक्यं - दूतवाक्यं से विद्यार्थियों को उद्दंड जीवन शैली का ज्ञान होता है तथा बड़े बुजुर्गों की बात हो अनसुना करने का परिणाम दुखदाई होती है। यह भी जानकारी मिलती है
4. शुकनासोपदेश - इससे विद्यार्थियों को जीवन में यौवनमद, लक्ष्मी मद एवं रूप मद से बचने की बात बतायी गई है तथा एक राजा के क्या कर्तव्य होने चाहिए इसकी सुंदर जानकारी मिलती है

Semester II

Course Code: 21USKT201

Course Name: Prose (CC)

स्नातक द्वितीय वर्ष

Semester III

Course Code: 21USKT301

Course Name: Drama(CC)

1. रामायण - रामायण के अध्ययन से विद्यार्थियों को पारिवारिक,सामाजिक,आर्थिक एवं राजनीतिक ज्ञान होता है।
2. श्रीमद् भगवद गीता-कर्म के महत्व के साथ साथ नियंत्रित जीवन जीने की शिक्षा मिलती है तथा समत्व की भावना का भी दिग्दर्शन होता है।

Semester IV

Course Code: 21USKT401

Course Name: Grammar(CC)

स्नातक तृतीय वर्ष

Semester V	Semester VI
Course Code: 21USKT 501	Course Code: 21USKT 601
Course Name: Literature-I(DSE)	Course Name:Literature-II (DSE)

अभिज्ञान शाकुन्तलम- नैतिकता के साथ साथ सामाजिक जीवन दर्शन एवं पर्यावरण संरक्षण का ज्ञान भी होता है।

संस्कृत साहित्य का सामाजिक, आर्थिक, सांस्कृतिक, वैज्ञानिक , नैतिक एवं राजनीतिक दृष्टि से विशेष महत्व है। संस्कृत के अध्ययन के उपरांत एक विद्यार्थी भारतीय सेना में धर्म शिक्षा के लिए योग्य हो जाता है। विद्यार्थी भारतीय प्रशासनिक सेवा में संस्कृत विषय ले सकते हैं। विद्यालय, महाविद्यालय एवं विश्वविद्यालय में संस्कृत शिक्षक लग सकते हैं । कर्म कांड एवं ज्योतिष विज्ञान में भी जा सकते हैं । इसके अतिरिक्त संस्कृत पत्रकारिता में भी भविष्य हैं

BA with MATHEMATICS

PROGRAMME OUTCOME

- Enables students to develop a positive attitude towards mathematics.
- A student would get a relational understanding of mathematical concepts and concerned structures, and would be able to follow the patterns involved, mathematical reasoning.
- Ability to analyze a problem, identify and define the computing requirements, which may be appropriate to its solution.
- Introduction to various courses like group theory, ring theory, field theory, metric spaces, number theory.
- Enhancing students' overall development and to equip them with mathematical modelling abilities, problem solving skills, creative talent and power of communication necessary for various kinds of employment.
- Ability to pursue advanced studies and research in pure and applied mathematical science.

PROGRAMME SPECIFIC OUTCOME

- Think in a critical manner.
- Know when there is a need for information, to be able to identify, locate, evaluate, and effectively use that information for the issue or problem at hand.
- Formulate and develop mathematical arguments in a logical manner.
- Acquire good knowledge and understanding in advanced areas of mathematics and statistics, chosen by the student from the given courses.

- Understand, formulate and use quantitative models arising in social science, Business and other contexts

COURSE OUTCOME:

Semester I
Course: 20UMTH 101
Course Name: Algebra
The student will be able to find the rank, eigen values of matrices and solve the homogeneous and non homogeneous systems, solution of cubic and bi – quadratic equations**.**

Course : 20UMTH 102
Course Name: Calculus
The student will be able to understand basic properties ofLimit, continuity and derivability of functions, series expansion Indeterminate forms, tracing of curves with the help of asymptotes and singular points.

Course: 20 UMTH 103
Course Name: Mathematical Lab
The students will learn to use mathematical Problem solving techniques based on Algebra and calculus, and they will also learn to use solving problems using programming software.

Semester II
Course: 20 UMTH 201
Course Name: Number theory and trigonometry
The students will be able to find quotients and remainders from integer division, understand the definitions of congruence, residue classes and least residues add and subtract integers, modulo n, multiply integers and calculate powers, modulo n Determine multiplicative inverses, modulo n and use to solve linear congruence. They will also learn Fermat's theorem, Wilson's theorem and De Moivre's theorem and its applications.

Course: 20 UMTH 202
Course Name: Vector calculus and Geometry
The student will be able to find directional derivatives, Gradients, Curls. Laplacian operator, two and three dimensional geometry.

Course: 20 UMTH 203

Course Name: Mathematical Lab II

The students will learn to use mathematical Problem solving techniques based on number Theory & Trigonometry and Vector Calculus And Geometry. They will also learn to solve related problems using programming software.

Semester III

Course Code: 20UMTH 301

Course Name: Differential equations

After completing this the students will be able to understand concept of differential equations and Orthogonal trajectories. they will be able to deal with concept of PDE. They will be able to do classification of PDE and also know about the special functions.

Course Code: 20UMTH 302

Course Name: Numerical methods with Programming in C

The students would be able to use computer and will learn programming in C. They will learn about strings, Standard string handling functions, Arithmetic operations on characters, Using structures.

they will also learn Solution of algebraic and Transcendental equations. They will also be able to solve Simultaneous linear algebraic equations.

Course Code : 20UMTH 303

Course Name: Mathematical Lab III

The students will learn solving problems with the use of programming in C. The problems will be based on numerical methods and differential equations.

Semester IV
Course Code: 20UMTH 401
Course Name: Mechanics
This course enables students to know about the general concepts of Mechanics such as forces, Movements and couples, Velocity, Newton‘s law, Work , Power and Energy etc.

Course Code: 20 UMTH 402
Course Name: Groups and Rings
After studying this course the students will be able to Relate group theory with real life using symmetric group and to solve basic problems related to Rings, Groups and Fields.

Course Code: 20 UMTH 402
Course Name: Mathematical lab IV
Students will be able to solve problems related to Mechanics and Groups and Rings using programming software like Excel or C.

Semester V
Course Code: 20UMTH 502 (DSE)
Course Name: Statistical Inferences
After going through this course the student will be able to have a fundamental understanding of Parametric models for developing relevant inferences on associated parameters. They will get knowledge of point and interval estimation, procedures and different methods of point estimation. They will learn about Null and alternative hypothesis, will come to know about level of significance, one-tailed and two-tailed test, student's t distribution, Testing for the mean and Variance of univariate model distribution, ANOVA for one way and two way classifications.

Course Code: 20UMTH 504 (DSE)
Course Name: Linear algebra
Students will know about vector spaces, Subspaces, and solve linear system and characterize the set of vector.Linear Algebra will help to understand the properties of high dimensional geometry.

Course Code: 20 UMTH 505
Course Name: Mathematical lab IV
Students will be able to solve problems related to Statistical Inferences and Linear Algebra using programming software preferably Mathematica or MS Excel

Semester VI

Course Code: 20UMTH 601 (DSE)

Course Name: Special Functions and Integral Transforms

The student will be able to understand Series solution of differential equations, Bessel equation and functions, Legendre differential equations and their functions. They will know in detail about Laplace transforms and Fourier transforms**.**

Course Code: 20UMTH 603 (DSE)

Course Name: Real Analysis

Students will be able to understand the concept of metric space, Baire's theorem, Abel's and Dirichlet's tests, improper integral and topology of complex numbers, continuity and analyticity of functions.

Course Code: 20 UMTH 605

Course Name: Mathematical lab VI

The student will be able to solve mathematical problems using techniques based on courses Special functions and integral transforms and Real analysis using computer software like Mathematica or MS Excel.

Program: Bachelor of Commerce (B.Com)

We offer the B.Com. Pass Course for the students who are interested to make their career in the realm of Commerce. Like B.A. this is also a Govt. Aided Course with limited seats. The option of Vocational B.Com with Computer Application or ASM is also available.

PROGRAM OUTCOME (PO)

PO 1	Develop an understanding of commerce fundamentals such as Finance, Accounting, Financial analysis, project evaluation, and cost accounting
PO 2	The knowledge of different specializations in accounting, costing, banking and finance with the practical exposure helps the students to stand in organization.
PO 3	Have global exposure of complex commerce problems and find their solution, process information by effective use

PROGRAM SPECIFIC OUTCOMES (PSO)

PSO 1	There is high demand for these graduates in Manufacturing Companies, Export, Trading houses , Financial concerns, Banks, Financial Institution, Insurance Industry, PSUscorporations, Service Industry, Marketing Industry, Education , Health etc.
PSO 2	Students will learn relevant financial accounting skills by applying both quantitative and qualitative knowledge to their future career in business
PSO 3	Enables the students about entrepreneurship and capable of making decisions at personal and professional level.
PSO 4	Perform all accounting activities and handling business well.
PSO 5	Develop communication skills and computer awareness and rules of income tax Act.
PSO 6	Students will be familiarized with the provisions of Company Law and Business Law.

COURSE OUTCOMES

Semester I **Course Code: 19BC-101** **Course: Financial Accounting I**
This course impacts conception, knowledge and understanding of the financial accountant system. Accounting graduates will be professionally competent in interfering, the financial statements in accordance with the accounting standards, concepts and rules and interpreting the business applications of these financial statements. Students will become capable to do planning related to finance and developing professional values, like integrity, service to the community and to the accounting profession.
Semester I **Course Code: 19BC-102** **Course: Business Management**
The course makes students capable of integrating the knowledge of various business functions and apply that in the dynamic business environment, they will learn to lead and influence others. Students will be capable of becoming effective team leader as well as team member who can effectively communicate and cooperate with all the other members. They will develop knowledge of generating innovative ideas and put them into practice so as to complete and achieve success in business. Apply managerial roles and managerial skills
Semester I **Course Code: 19BC-103** **Course: Business Economics**
Students will be able to apply basic terms related to demand and supply, their applications, cost, production, etc. and its relationship to business opera. They will be able to analyze the causes and consequences of different market conditions.
Semester I **Course Code: 19BC-104** **Course: English**
studying this course the student will get the knowledge of – • literature work of some renowned litterateur • Parts of speech

After Basic grammatical concepts and common errors. • Basics of communication like listening, conversation, speech and oration
Semester I **Course Code: 19BC-105** **Course: Fundamentals of Computers**
• After studying this paper the student will be able to to know more about computer system, internet and networking, email and security system. • Will get better understanding of MS Office 2010 • Will learn more about data communication and networks.
Semester II **Course Code: 19BC-201** **Course: Financial Accounting II**
This course improves knowledge and understanding of the financial accountant system. Students can understand the hire purchase system and installment payment system, branch accounting. They will get knowledge about amalgamation and sale of partnership firms, dissolution of partnership firms, wide range of joint venture accounts and royalty accounts.
Semester II **Course Code: 19BC-202** **Course : Indian Economy and Business Environment**
Students can understand elements, dimensions and importance of business environment. They will be able to do SWOT/SWOC analysis with special reference to Indian industry. This paper provides knowledge about inflation, industrial sickness and religion in balances, industrial policy for the growth of industries. Students will be aware of economic policies, monetary policy and fiscal policy in globalization, privatisation and globalisation, WTO and World Bank.
Semester II **Course Code: 19BC-203** **Course: Business Mathematics**
Students will be able to apply basic terms of integration in solving practical problems field of as of business. Students will be developed with the ability to solve problems in the areas of matrix, differentiation, simple and compound interest account. They will be able to connect acquired knowledge and skills with practical problems in economic practice.

Semester II
Course Code: 19BC-204
Course: Hindi

- पत्र लेखन,प्रारूपण, टिप्पण, प्रतिवेदन, पत्राचार: अर्थ एवं प्रकार, व्यवहारिक, एवं सरकारी पत्र लेखन अनुवाद: परिभाषा, विशेषता एवं उपयोगिता.
- मुहावरे एवं लोकोक्तियां: अर्थ परिभाषा एवं विभिन्न मुहावरे तथा लोकोक्तियां; शब्द शुद्धि वाक्य शुद्धि और शब्द ज्ञान.
- पर्यायवाची एवं विलोम शब्द: अनेकार्थी, वाक्य या वाक्यांश के लिए एक शब्द अथवा अनेक शब्दों के लिए एक शब्द; देवनागरी लिपि: अर्थ, नामकरण विशेषताएं, वैज्ञानिकता मानकीकरण एवं सुधार के उपाय.
- कंप्यूटर में हिंदी प्रयोग: कंप्यूटर की संरचना, वर्तनी संशोधन: पारिभाषिक शब्दावली, कार्यालय हिंदी और अनुवाद: विशेषताएं अनुवाद प्रक्रिया, समस्याएं एवं कठिनाइयां.

Semester II
Course Code: 19BC-205
Course: Business Communication Skills

Students will be able to understand and apply the knowledge of Human communication and language processes which will enable them to think, observe and express effectively. They will be capable of communicating effectively orally and in writing. Students will be developed of knowledge, skills and judgement around Human communication that facilitate their ability to work collaboratively with others. This course helps students to develop their overall personality.

Semester III
Course Code: 19BC-301
Course: Corporate Accounting I

The student will be able to understand the share capital meaning types and treatment of issues forfeiture and reissue of shares. they will get basic knowledge of Debentures , invasion of goodwill, valuation of shares and final accounts of companies.

Semester III
Course Code: 19BC-302
Course: Business Regulatory framework

The students will get knowledge of rules regarding offer, acceptance, consideration and capacity to contract. They will get knowledge of Sale of Goods Act, 1930, Consumer Protection Act, 1986, RTI act 2005, Haryana Service rules and Labour Laws.

Semester III
Course Code: 19BC-303
Course: Human Resource Management

This course enables the student to understand human resource management, its importance, objective and scopes. They will come to know functions and qualities of human resource manager, basic knowledge of recruitment, selection and training. They will understand the concept, importance and objectives of Industrial Relation, participants of industrial relation and recruitment of good industrial selection programs.

Semester III
Course Code: 19BC-304
Course: Environmental Science

- Student will be able to understand about the multidisciplinary nature of environmental studies, its definition, scope and importance, need for public awareness.
- Will come to know about various natural resources and role of an individual in conservation of natural resources.
- Acquire knowledge about Ecosystem
- will know about causes, effects and control measures of air pollution, water pollution, soil pollution, marine pollution, noise pollution, thermal Pollution.
- Will understand various Social issues and environment, environmental ethics issues and possible solutions to climate change, global warming, acid rain, ozone layer depletion.

Semester III
Course Code: 19BC-305
Course: E-Commerce

On successful completion of this module students should be able to understand concepts of E-Commerce and analyze different types of portal technologies and deployment methodologies commonly used in the industry. They will acquire knowledge about basic models of e commerce, its application in various fields, ready to use internet networking. They will gain ability to deal with online payment mechanism and also learn about threats in e-commerce.

Semester III
Course Code: 19BC-306
Course: Computerised Accounting System

Students will be able to comprehend Manual accounting and computerized accounting, they will acquire knowledge about ready to use accounting packages, various accounting software in trends. They will gain ability to deal with tally designing and creating outer sales, purchase sales , Return, purchase return, general and practical. They will also learn data entry through vouchers processing to prepare accounts and balance sheets.	
Semester IV **Course Code: 19BC-401** **Course: Corporate Accounting II**	
CO 1	Students can understand provisions for accounting standard 14 external reconstruction in the nature of merger and purchase.
CO 2	Knowledge about accounting standard 21 ICAI: accounts of holding companies consolidated balance sheet.
CO 4	Know about the final account of banking companies.
CO 5	Basic motives of liquidation of a company: financial reporting for Financial Institutions, Understanding of international financial reporting standards.
Semester IV **Course Code: 19BC-402** **Course: Corporate Law**	
CO 1	Students can easily understand the meaning , characteristics and nature of a company. Lifting company VAIL, Meaning and characteristics of private company.
CO 2	Promotion and incorporation of company memorandum of association and article of Association.
CO 3	Will get knowledge of directors' appointments and power position of directors.
CO 4	Will learn about share and stock share certificate and share warrants.
CO 5	Come to know about Company meetings, their importance and types, resolution and minutes ,case studies regarding company meetings
Semester IV **Course Code: 19BC-403** **Course: Marketing Management**	
CO 1	Will learn about basic models of marketing , concept of traditional and modern marketing.
CO 2	Will get basic information of marketing segmentation, targeting and Positioning.

CO 3	Student will get insight of consumer behaviour and its factors, product planning and development
CO4	Understanding of Product life cycle, types of brand branding , its policies and strategies.
CO 5	Students will be able to understand the main role of advertisement in marketing, Media of advertisement and sales promotions.
Semester IV **Course Code: 19BC-404** **Course: Business Statistics**	
CO 1	Students can understand and ascertain: Importance and Scope of Statistics, Sampling methods and Tabulation of data
CO 2	To provide insights for primary and secondary data and methods of collection of data
CO 3	To understand Central tendency and measurements of dispersion
CO 4	Student will get insight about correlation, regression and analysis of time series, theory of probability
CO 5	To develop the student's ability to deal with numerical and quantitative issues in business
Semester IV **Course Code: 19BC-405** **Course: Banking And Banking Law**	
CO 1	Students will know about the meaning and importance of banks,functions and problem of non performing assets, structure of commercial banking system in India.
CO 2	Will get basic knowledge of regional rural banks and Cooperative banking in India.
CO 3	Will learn about determination and regulation of interest rates in India, banks rights, special types of bankers, consumer (minors, married women, illiterate persons), Trusty as executive administrator and customers, Attorney, joint accounts.
CO 4	Will learn about Negotiable Instrument,Negotiable Instrument holder and holder in due course.
Semester IV **Course Code: 19BC-406** **Course: Business Ethics**	
CO 1	Understanding Business ethics and development
CO 2	Awareness regarding corporate social responsibility
CO 3	Knowledge of corporate governance and sustainable development

CO 4	Implications of ethics and values in business
CO 5	Importance of institutionalization of ethics
Semester IV **Course Code: 19BC-407** **Course: Statistical Analysis through Software**	
CO1	Students can understand SPSSin detail along with its advantages and disadvantages
CO 2	Awareness regarding savings of data variables,types and rules for variables, data analysis, procedure.
CO 3	Will get Knowledge of custom tables, general linear model, correlation, regression, time series auto correlation, cross correlation.
CO 4	Understand the procedure of data analysis and sequences reports.
Semester V **Course Code: 19BC-501** **Course: Income Tax Law**	
CO 1	Student will get knowledge of Income Tax, important agriculture income, expected income and Residential income.
CO 2	Understand Income from salaries and from House properties.
CO 3	Students will gain knowledge about profit and loss, Business and professions.
CO 4	Will know about Models of income from other sources, clubbing of incomes and aggregation of incomes.
Semester V **Course Code: 19BC-502** **Course: Cost Accounting I**	
CO 1	Students can understand Cost Accounting concepts, systems, classification and preparation of cost sheet
CO 2	Essential of stores, control of purchase dept. records, pricing methods.
CO 3	Understand essentials of stores, machine turnovers, time keeping, bookkeeping, over time, and idle time
CO 4	Understand the Methods of Costing, and process of profits
CO 5	Understand the need of Reconciliation of Costing and Financial Accounts, reasons for disagreement in profit
Semester V **Course Code: 19BC-503** **Course: Management Accounting**	
CO 1	Students can understand meaning, features, scope, importance and functions of Cost accounting.

CO 2	Will get knowledge of material control, labour cost control and its models.
CO 3	Basic knowledge of Overheads meaning And types Collection classification and apportionment and absorption of overheads: main methods.
CO 4	Will go through Unit and output Costing.
CO 5	Will understand meaning, performa and types of Cost sheet.
Semester V **Course Code: 19BC-504** **Course: Auditing**	
CO1	Students will get basic knowledge of auditing: its meaning. definition, its functions and types.
CO2	Will learn about auditing procedure: routine checking, Verification and valuation of Assets and liabilities.
CO 3	Get knowledge of audit report and investigation.
CO 4	Understand the basic concept of Audit report and Audit investigation
Semester V **Course Code: 19BC-505 (A)** **Course: Advertising and Sales Management**	
CO1	Students will be acquinted with advertising and promotion, marketing communication strategies and types & role of advertising agencies.
CO2	Know about sales management,its characteristics and responsibilities, role of sales manager, sale planning and theories of selling
CO 3	Learn about territory management, time management, sales quota, management of sales force-recruitment, selection and training.
CO 4	Get knowledge of control process and distribution channels, ethical issues in sales management and web marketing
Semester V **Course Code: 19BC-506 (B)** **Course:Retail Management**	
CO1	Students will be acquinted with retail management, its characteristics, development and functions.know about Career, technology in retailing
CO2	Will learn about types of retailing, wheel of retailing, different formats of retailing, cash and carru business.
CO 3	Will Know about management of retailing operations.
CO 4	Get knowledge of retail planning, retailing and retail pricing strategies, retail locations.

Semester VI **Course Code: 19BC-601** **Course: Tax procedure and Practices**	
CO 1	Students can understand Clearance Procedure: procedure Filing and filling of relevant documents,Shipping bill for export of suitable goods, duty free goods duty free goods Ex.bond.
CO 2	Customer processes :Import procedure And documents,export procedure and documents.
CO 3	Assessment and provisional assessment relevant date.
CO 4	Understanding exemptions from custom duty and general exemptions, remission on lost and pilfered goods and relinquished goods.
CO 5	Going through export incentives and EOU you and SEZ.
Semester VI **Course Code: 19BC-602** **Course: Cost Accounting II**	
CO 1	Basic knowledge of Budgetary controls and its techniques
CO 2	Understanding of Contract, Job and Batch costing
CO 3	Knowledge of process costing including inter-process profit transfer
CO 4	Understanding Labour and material variances under standard costing
CO 5	Going through break even analysis, P/V ratio etc under marginal costing
Semester VI **Course Code: 19BC-603** **Course: Financial Management**	
CO 1	Students can understand Goals of Financial Management, Agency Problem, Changing Role of Finance Manager (Theory). Time value of money
CO 2	Accounts Receivable Management, Cost Benefit Analysis, Inventory Management: Meaning Tools and Techniques of Inventory Control
CO 3	Understanding of Classification of Costs, Computation of Specific Cost of Capital, Cost of Debt and Leverages, Capital Structure Theories
CO 4	Detailed Knowledge of Dividend decisions, Dividend Policy, Forms of Dividends
CO 5	Helps the student to learn management of finance at various business levels. Further there may be a continuous demand in future for the financial managers
Semester VI **Course Code: 19BC-604** **Course: GST**	

CO 1	The student will acquire knowledge about Salient features, Scope and importance of GST
CO 2	Knowledge of Goods and service tax helps the student to understand the indirect tax
CO 3	Will come to know about process of registration and issue of invoices, provisions of TDS and TCS
Semester VI **Course Code:19BC-605 (B)** **Course: Financial market operations**	
CO1	Basic knowledge of money market: Indian money market, capital market: New market and secondary market ,National Stock Exchange.
CO 2	Understand SEBI its role, scope ,functions and importance in businesses
CO 3	Students can understand about Investors Protection :Grievances,Dealing and their removal .
CO 4	Understand the Functionaries on stock exchange: Brokers, Sub brokers,market makers,jobbers , Institutional Investors.
CO 5	Knowledge of Product and services offered by IDBI, IFCI, SIDBI, IDBI NABARD and ICICI.
Semester V **Course Code: 19BC-606(B)** **Course: Entrepreneurship and small scale business**	
CO 1	Basic concept of Entrepreneurship: Enterprises conceptual issues.Role and function of entrepreneur in relation to the enterprise and in relation to the economy.
CO 2	Knowledge of Scouting and Idea generation: Role of creativity, Innovation and business research.Sources of business ideas.
CO 3	Understand the term of entrepreneurial opportunity in contemporary business environment and Network marketing.
CO 4	Managerial roles and its function in small business .Basic Awareness of the issues of impugning quality productivity and environment.
CO5	Learn about the concept and application of product life cycle in businesses, advertising and & publicity, Sales and distribution management.

PROGRAM: B.Sc. NON MEDICAL

We are running this course under the Self Financing Scheme having options of B.Sc. Non-Medical with or without Computer Science. This course also has limited seats and provides opportunities for the students to make their career in the realm of Science.

PROGRAM OUTCOMES

1. Students become eligible to join as Quality Control Manager in private Sector (Industries) as well as government sector.

2. Students can join as Medical Representative.

3. Students can join M.Sc. in Physics, Chemistry, Mathematics, Information Technology and Nuclear Medicines.

4. Students become eligible to serve in DRDO, defense, public sector and private Sector.

PROGRAM SPECIFIC OUTCOMES

1. They can pursue Post Graduation in any subject which they have studied in B.Sc.
2. Students can go for higher studies in courses like B.Ed, MA, MBA, LLB, etc.

COURSE OUTCOMES: B.Sc. CHEMISTRY

Semester –I **20UCHE101** Atomic structure & Bonding and general organic chemistry-I	Students completing this course will understand the principles of quantum mechanics and atomic structure, including the behavior of electrons in atoms. They will also gain knowledge of ionic bonding, lattice energy, and the factors affecting the stability and solubility of compounds and stereochemistry of compounds. Additionally, they will be able to apply these concepts to predict molecular interactions and solve related problems in chemistry.
Semester –I **20UCHE102** States of matter and aliphatic hydrocarbons	After studying the designed curriculum, students will understand the physical properties and behavior of different states of matter, including gases, liquids, and solids. They will also gain knowledge of the structure, properties, and reactions of aliphatic hydrocarbons, enabling them to predict reactivity patterns and apply this understanding to organic synthesis and problem-solving in chemistry.
Semester –I **20UCHE103**	Practical-I
Semester –II **20UCHE201** Chemistry of s & p block elements and aromatic hydrocarbons alkyl and aryl halides	Students completing this course will understand the chemical properties and reactivity of s- and p-block elements, including their role in various compounds. They will also gain knowledge of the structure, reactions, and synthesis of aromatic hydrocarbons, alkyl, and aryl halides. This will enable them to predict reaction mechanisms and apply these concepts to organic and inorganic synthesis in chemistry.
Semester –II **20UCHE202** Chemical Energetics And Functional Group Organic Chemistry-I	Students completing this course will grasp the fundamental principles of chemical energetics, including thermodynamics and energy changes in chemical reactions. They will also understand the structure, properties, and reactions of various functional groups in organic chemistry, enabling them to predict reactivity and apply these concepts to organic synthesis and problem-solving in chemistry.

Semester –II **20UCHE203**	Practical-II
Semester –III **20UCHE301** Chemical Equillibria And Functional Group Organic Chemistry-II	After studying this, the student would be able to learn about the thermodynamic principles governing chemical equilibrium and reaction dynamics, Nernst distribution law and its modifications to real-world chemical systems, Carboxylic Acids and its derivatives properties. The syllabus will enhance students' abilities to analyze chemical reactions, predict outcomes, and apply theoretical principles to practical situations in both physical and organic chemistry.
Semester –III **20UCHE302** Coordination Chemistry And Chemical Kinetics	Studying coordination chemistry and chemical kinetics provides students with a thorough understanding of metal-ligand interactions and reaction rates. In coordination chemistry, they learn about complex formation, bonding theories, and the behavior of metal ions in biological and industrial contexts. Mastery of these topics equips students with skills for designing and optimizing chemical processes, understanding catalysis, and contributing to fields such as pharmaceuticals, materials science, etc.
Semester –III **20UCHE303**	Practical III
Semester –IV **20UCHE401** Functional group organic chemistry-III and electrochemistry	Students learn about the reactivity and applications of amines and nitrocompounds in synthesis and pharmaceuticals. Electrochemistry education imparts knowledge on redox reactions, electrochemical cells, and corrosion. This expertise enables students to apply these concepts in developing new materials, optimizing industrial processes, and advancing technologies in energy storage and conversion, preparing them for careers in chemistry.
Semester –IV **20UCHE402** Solution & phase equilibrium and chemistry of biomolecules	Students gain insights into how solutes interact with solvents, phase transitions, and the equilibrium conditions that govern these processes. In bio molecular chemistry, they explore the structure and function of proteins, nucleic acids, and other vital compounds. This knowledge enables students to

	tackle problems in fields like pharmaceuticals, biochemistry preparing them for careers in research, industry, and healthcare.
Semester –IV **20UCHE403**	Practical-IV
Semester –V **20UCHE501**(any one) A. Organometallic Compounds and Bioinorganic B. Chemistry of Heterocyclic compound	A. Students who complete this course will develop a comprehensive understanding of organometallic and bioinorganic chemistry, equipping them with essential knowledge in both theoretical concepts and practical applications. B. Students studying the **Chemistry of Heterocyclic Compounds** will gain essential knowledge of the structure, reactivity, and synthesis of key heterocycles like pyrrole, furan, and pyridine. By the end of the course, students will be equipped to apply this knowledge in research, drug development, and various chemical industries.
Semester –V **20UCHE502** (any one) A. Organic Spectroscopy –I B. Chemistry of Polymer	A. Upon completing this course, students will have a thorough understanding of organic spectroscopy, including UV, IR, and NMR techniques. They will be proficient in interpreting absorption spectra, identifying molecular structures, and analyzing chemical environments using these spectroscopic methods. This knowledge will prepare them for advanced studies or careers in chemistry, where these techniques are essential for research, quality control, and development in chemical, and materials science industries. B. By the end of this course, students will have developed a solid foundation in polymer chemistry, understanding the history, classification, and molecular structure of polymers, as well as the mechanisms and kinetics of polymerization. This comprehensive knowledge will prepare students for careers in research, development, and the industrial

	application of polymeric materials, making them valuable assets in fields such as materials science, electronics, and chemical engineering.
Semester –V **20UCHE503**	Practical-V
Semester –V **20UCHE504** Environmental Chemistry (SEC-III)	Students studying Environmental Chemistry will develop a comprehensive understanding of the environmental challenges related to pollution and sustainable energy. They will learn about the sources and effects of air and water pollution, explore strategies for mitigation, and understand the role of energy management in environmental conservation. Additionally, they will gain insights into the use of biocatalysts for eco-friendly industrial processes, preparing them for careers in environmental science, sustainability, and green technology industries.
Semester –VI **20UCHE601 (any one)** A. Organic Spectroscopy –II B. Inorganic materials of industrial importance	A. By completing this course, students will gain a comprehensive understanding of the application of IR and NMR spectroscopy in structure elucidation of organic compounds, including the interpretation of spectra and understanding of key concepts. Additionally, students will be equipped with knowledge of mass spectrometry techniques and their use in organic molecule identification and analysis. This foundational knowledge prepares students for advanced research or careers in organic chemistry, particularly in analytical roles where spectroscopy is crucial. B. Understanding Inorganic materials glass, ceramics etc. properties, synthesis, and applications equips students with essential knowledge for careers in material science, engineering, and industrial chemistry.
Semester –VI **20UCHE602 (**any one) A. Quantum mechanics molecular spectroscopy	A. Quantum mechanics and molecular spectroscopy offer students profound insights into the behavior of molecules at the quantum level. By studying these

	fields, students gain a deeper understanding of molecular structure, interactions, and energy states, which are crucial for applications in chemical analysis, materials science, and drug development. Mastery of these concepts enables students to interpret spectral data, predict molecular behavior, and advance technologies in spectroscopy and quantum chemistry, paving the way for innovations in research and industry. B. Studying the chemistry of cosmetics and perfumes equips students with knowledge on formulating and analyzing beauty products. They learn about the chemical properties of ingredients, their interactions, and their effects on skin and scent perception. This expertise enables students to innovate in product development, ensure safety and efficacy, and understand regulatory aspects. Ultimately, it prepares them for careers in cosmetic science, fragrance formulation, and quality control, contributing to advancements in personal care and consumer products.
B. Chemistry of Cosmetics and Perfumes	
Semester –VI **20UCHE603**	Practical-VI
Semester –VI **20UCHE604** Analytical Chemistry (SEC-IV)	Studying analytical chemistry techniques like error analysis, flame atomic absorption, emission spectroscopy, diffraction methods, and chromatography equips students with essential skills for precise chemical analysis. This enhances their ability to troubleshoot experimental issues, conduct high-quality research, and ensure reliable results, preparing them for careers in laboratories, quality control, and research and development across diverse scientific fields.

PROGRAMME SPECIFIC OUTCOMES: B.Sc. PHYSICS

This UG course in Physics would provide the opportunity to the students:

- To understand the basic laws and explore the fundamental concepts of physics
- To understand the concepts and significance of the various physical phenomena.
- To carry out experiments to understand the laws and concepts of Physics.
- To apply the theories learnt and the skills acquired to solve real time problems.
- To acquire a wide range of problem solving skills, both analytical and technical and to apply them.
- To enhance the student's academic abilities, personal qualities and transferable skills this will give them an opportunity to develop as responsible citizens.
- To produce graduates who excel in the competencies and values required for leadership to serve a rapidly evolving global community.
- To motivate the students to pursue PG courses in reputed institutions.
- This course introduces students to the methods of experimental physics. Emphasis will be given on laboratory techniques specially the importance of accuracy of measurements.
- Providing a hands-on learning experience such as in measuring the basic concepts in properties of matter, heat, optics, electricity and electronics.

COURSE OUTCOME:

Course name	Outcomes
Semester I **20UPHY-101** **Mechanics I**	After completing this course, the learner will be able to understand the behaviour of physical bodies, laws of motion, momentum, inertia, energy, rotational motion,

	gravitation, fluids conservation of linear momentum, conservation of energy, angular displacement, motion of rocket, theorems of perpendicular and parallel, kinetic energy of rotation
Semester I 20UPHY-102 Electricity and Magnetism	Students will be able to understand concepts of Mathematical Background- vector and scalar, Electrostatic Field, Magnetostatistics, Gauss theorem, Langevin's theory, Domain theory of ferromagnetism, Cycle of Magnetisation and Electromagnetic Theory : Maxwell equation and their derivations. Biot-severt law and its applications ,ampere circuital law ,Magnetic properties of materials ;magnetic susceptibility.
Semester I 20UPHY-103	Practical
Semester II 20UPHY-201 Properties Of Matters, Kinetic Theory And Relativity	The course builds a foundation of various applied field in science and technology; especially in the field of mechanical engineering. The course comprises of the study moments of solid bodies, elasticity and special relativity, Gallilean invariance and Conservation laws ,Newton relativity principle, Michelson - Morley experiment, Lorentz transformations variation of mass with velocity and mass energy equivalence.
Semester II 20UPHY-202 Wave and Electrodynamics	The student will learn about f superposition of harmonic oscillations, waves motion (general), oscillators, sound, wave optics, interference, diffraction, polarization. Also would be able to understand Farady's law. Lenz's law, Maxwell's equations in vacuum and medium.wave equation,superposition principal,group velocity,phase velocity,Hygen principle.Reflection and transmission of waves.harmonic osciilations.
Semester II 20UPHY-203	Practical

Semester III **20UPHY-301** **Thermodynamics**	The student will be able to understand - Zeroth law of thermodynamics and temperature, first law and its application , second law and entropy, third law of thermodynamics,, kinetic theory of gases, law of equipartition of energy and theory of radiation. Planks law, Thomson effect, Maxwell law of distribution of velocity ,vander wall equation, Stefan Boltzmann law .
Semester III **20UPHY-302** **Optics I**	After studying the course student will be able to understand the following topics:- • Understand the phenomenon of wave optics and its types, working of Lloyd's mirror and Fresnel's Biprism. • Fresnel's Diffraction • Fourier analysis, Fourier transform, matrix methods and their uses in optics. • Polarization and construction and working of optical fibers.
Semester III **20UPHY-303**	Practical
Semester IV **20UPHY-401** **Semiconducting Device**	After studying the course student will get knowledge about- • p and n type semiconductors, their current flow mechanism , resistance and applications. • Bipolar junction transistors and field effect transistors. • Operational amplifiers and its applications.
Semester IV **20UPHY-402** **Quantum Mechanics**	Quantum mechanics provides a platform for the physicists to describe the behaviour of matter and energy at atomic and subatomic level. The course plays a fundamental role in explaining how things happen beyond our normal observations. The course includes the study of Schrodinger equations, particle in one dimension potential, quantum theory of H like atoms, atoms/molecules in electric and magnetic fields.
Semester IV **20UPHY-403**	**Practical**

Semester V 20UPHY-501A Solid State Physics	Students would be able to understand various types of crystal structures and symmetries and understand the relationship between the real and reciprocal space and learn the Bragg's X-ray diffraction in crystals. Would also learn about phonons and lattice.
Semester V 20UPHY-502A Statistical Physics	At the end of this course, a student will have developed ability to: • Understand the statistical basics of thermodynamics, • Analyze the three ensembles of statistical mechanics. • Understanding the formulation of quantum statistics. • Apply the quantum statics to Ideal Bose systems. • Apply the quantum statics to Ideal Fermi systems and understand the Ising model.
Semester V 20UPHY-503	Practical
Semester VI 20UPHY-601A Nuclear Physics	In this course students would know about the general properties of nuclei, nuclear forces and detectors, radioactive decay and nuclear reactions. The course expands the knowledge of students especially, the various applications of nuclear physics The course builds a foundation for the students to carry out research in the field of nuclear physics, high energy physics, nuclear astrophysics, nuclear reactions and applied nuclear physics.
Semester VI 20UPHY-602A Atomic and Molecular Stereoscopy	The course structure includes atomic and molecular spectroscopy. As per the course structure, the students learn basics concepts of spectroscopic principles and rules. Students would learn technique in spectroscopy and know about their applications. The course is helpful for the students to explore R & D opportunities in various areas of science and technology such as biomedical, industrial and environmental fields.
Semester VI PHY-603	Practical

COURSE OUTCOME : B.Sc. MATHEMATICS

Semester I

Course: 20UMTH 101

Course Name: Algebra

The student will be able to find the rank, eigen values of matrices and solve the homogeneous and non homogeneous systems, solution of cubic and bi – quadratic equations**.**

Course : 20UMTH 102

Course Name: Calculus

The student will be able to understand basic properties ofLimit, continuity and derivability of functions, series expansion Indeterminate forms, tracing of curves with the help of asymptotes and singular points.

Course: 20 UMTH 103

Course Name: Mathematical Lab

The students will learn to use mathematical Problem solving techniques based on Algebra and calculus, and they will also learn to use solving problems using programming software.

Semester II

Course: 20 UMTH 201

Course Name: Number theory and trigonometry

The students will be able to find quotients and remainders from integer division, understand the definitions of congruence, residue classes and least residues add and subtract integers, modulo n, multiply integers and calculate powers, modulo n Determine multiplicative inverses, modulo n and use to solve linear congruence. They will also learn Fermat's theorem, Wilson's theorem and De Moivre's theorem and its applications.

Course: 20 UMTH 202

Course Name: Vector calculus and Geometry

The student will be able to find directional derivatives, Gradients, Curls. Laplacian operator, two and three dimensional geometry.

Course: 20 UMTH 203
Course Name: Mathematical Lab II
The students will learn to use mathematical Problem solving techniques based on number Theory & Trigonometry and Vector Calculus And Geometry. They will also learn to solve related problems using programming software.

Semester III
Course Code: 20UMTH 301
Course Name: Differential equations
After completing this.the students will be able to understand concept of differential equations and Orthogonal trajectories. They will be able to deal with concept of PDE. They will be able to do classification of PDE and also know about the special functions.

Course Code: 20UMTH 302
Course Name: Numerical methods with Programming in C
The students would be able to use computer and will learn programming in C. They will learn about strings, Standard string handling functions, Arithmetic operations on characters, Using structures.
they will also learn Solution of algebraic and Transcendental equations. They will also be able to solve Simultaneous linear algebraic equations.

Course Code : 20UMTH 303
Course Name: Mathematical Lab III
The students will learn solving problems with the use of programming in C. The problems will be based on numerical methods and differential equations.

Semester IV
Course Code: 20UMTH 401
Course Name: Mechanics
This course enables students to know about the general concepts of Mechanics such as forces,Movements and couples, Velocity, Newton‘s law, Work , Power and Energy etc.

Course Code: 20 UMTH 402
Course Name: Groups and Rings
After studying this course the students will be able to Relate group theory with real life using symmetric group and to solve basic problems related to Rings, Groups and Fields.

Course Code: 20 UMTH 402
Course Name: Mathematical lab IV
Students will be able to solve problems related to Mechanics and Groups and Rings using programming software like Excel or C.

Semester V
Course Code: 20UMTH 502 (DSE)
Course Name: Statistical Inferences
After going through this course the student will be able to have a fundamental understanding of Parametric models for developing relevant inferences on associated parameters. They will get knowledge of point and interval estimation, procedures and different methods of point estimation. They will learn about Null and alternative hypothesis, will come to know about level of significance, one-tailed and two-tailed test, student's t distribution, Testing for the mean and Variance of univariate model distribution, ANOVA for one way and two way classifications.

Course Code: 20UMTH 504 (DSE)
Course Name: Linear algebra
Students will know about vector spaces, Subspaces, and solve linear system and characterize the set of vector. Linear Algebra will help to understand the properties of high dimensional geometry.

Course Code: 20 UMTH 505
Course Name: Mathematical lab IV
Students will be able to solve problems related to Statistical Inferences and Linear Algebra using programming software preferably Mathematica or MS Excel

Semester VI

Course Code: 20UMTH 601 (DSE)

Course Name: Special Functions and Integral Transforms

The student will be able to understand Series solution of differential equations, Bessel equation and functions, Legendre differential equations and their functions. They will know in detail about Laplace transforms and Fourier transforms**.**

Course Code: 20UMTH 603 (DSE)

Course Name: Real Analysis

Students will be able to understand the concept of metric space, Baire's theorem, Abel's and Dirichlet's tests, improper integral and topology of complex numbers, continuity and analyticity of functions.

Course Code: 20 UMTH 605

Course Name: Mathematical lab VI

The student will be able to solve mathematical problems using techniques based on courses Special functions and integral transforms and Real analysis using computer software like Mathematica or MS Excel.

PROGRAM: Bachelor of Computer Applications (BCA)

We are running this course under the Self Financing Scheme. Any student with Maths in 12th can take admission in this three year program. This course also has limited seats and provides opportunities for the students to make their career in the field of Computers.

PROGRAM OUTCOMES

- To work effectively both as an individual and a team leader on multi-disciplinary projects.
- Inculcates the ability to analyze, identify, formulate and develop computer applications using modern computing tools and techniques.
- Improves communication skills so that they can effectively present technical information in oral and written reports.
- Prepares to create design innovative methodologies for solving complex-real life problems for the betterment of the society.
- To integrate ethics and values in designing computer application.
- Use the Systems Analysis Design paradigm to critically analyze a problem.
- Serve as the Web Designers with latest web development technologies.

PROGRAMME SPECIFIC OUTCOMES

- Focuses on preparing student for roles pertaining to computer applications and IT industry.
- Start from the basics and in every semester learns each and everything about computers.
- Develop programming skills, networking skills, learn applications, packages, programming languages and modern techniques of IT.
- Get skill and information not only about computer and information technology but also in common, organization and management.

- Learn programming language such as Java, C++, HTML, etc.
- Information about various computer applications and latest development in IT and communication system is also provided.
- Gives overview of the topics in IT like networking, computer graphics, web development, trouble shooting, and hardware and software skills.
- Bachelor in computer applications (BCA) gives a number of opportunities to individuals to go ahead and shine in their lives.
- A few of them being like software programmer, system and network administrator, web designer faculty for computer science and computer applications.

COURSE OUTCOMES

Sem I **22BCA 101** **Computer Fundamentals**	The course aims to familiarize the students with the fundamentals of Computer system, software and hardware, types of memory, concepts of programming languages, structured programming and networking concepts including types of network and topologies. After the completion of the course, the students will be able to learn basic computer terminologies, formulate opinions about the impact of computers on society, possess the knowledge of basic hardware peripherals and use of different number systems and the basics of programming.
Sem I **22BCA 102** **PC Software**	The objectives of this course is to learn students about the Operating system like MS Windows, documentation in MS Word, applying formulas and functions in MS Excel and designing of attractive presentation in MS PowerPoint. After the completion of the course, students will be able to understand computer software, problem-solving skills, working with various features of MS Word, MS Excel and MS PowerPoint.
Sem I **22BCA 103** **Mathematics**	This course will teach students mathematical skills and knowledge for their intrinsic beauty, effectiveness in developing proficiency in analytical reasoning, and utility in modeling and solving real world problems. After the

	completion of the course, students will be able to learn set, determinant and inverse of a matrix, relations, functions, limits & continuity, Integration and differentiability of the functions.
Sem I **22BCA 104** **Digital Electronics**	After the completion of the course, students will be able to understand the structure, function and characteristics of computer systems, design of the various functional units and components of computers, elements of modern instructions sets and their impact on processor design.
Sem I **22BCA 105**	Practical Lab Based on 22BCA102
Sem II **22BCA 201** **Programming in C**	The objective of the course is to familiarize the students with algorithmic thinking and algorithmic representations, introduce students to basic data types and control structures in C, structured programming concepts and standard library functions in C language. To familiarize the students with algorithmic thinking and algorithmic representations, introduce students to basic data types and control structures in C, structured programming concepts and standard library functions in C language.
Sem II **22BCA 202** **Computer Organization and Architecture**	This course will familiarize the students about the functional knowledge about PC hardware, operations and concepts, functional units of a standard PC with its working and memory organization in a computer. The course will also help students to learn Organization of CPU and memory. After completion of course, students would be able to understand concepts of Logic gates, flip flops and counters, concept of Computer Architecture, Pipeline processing, RISC and CISC architectures, DMA, organization of Central Processing Unit. This develop a base for designing advance micro-processors.
Sem II **22BCA203** **System Analysis and Design**	This course will provide an understanding of the role of systems analyst and software development firms for their role in distributing meaningful ERP modules and other business intelligent system. This course will also provide an understanding of the role of system analysis and design within various systems development stages. After completion of course, students would be able to understand an apply the activities of the management and systems analyst, and in the overall development of

	system with understanding of Testing software and complying the various software quality parameters.
Sem II **22BCA 204** **Operating System**	This course will provide students an understanding about basic concepts of Operating Systems, basic Unix concepts related to concurrency and control of programs, Identify and define key terms related to operating system and Unix commands. After competition of the course, students will be able to understand basic operating system fundamentals, how an operating system can be used as a service, apply Linux programming concepts and build a foundation stone to understand operating systems working.
Sem IV **22BCA205**	Practical Lab Based on 22BCA201 and 22BCA204
Sem III **22BCA 301** **Data Structure**	This course will familiarize students with the basic concepts of data structures and algorithms. After completion of course , students would be able to write an algorithm, Selection sort, Bubble Sort, Insertion Sort, Quick Sort, Merge Sort, Heap Sort and compare their performance in terms of Space and Time complexity and implement Graph search algorithms and determine the time and computation complexity.
Sem III **22BCA 302** **Database Management System**	This course will familiarize students with essential DBMS concepts and after the completion of the course students would be able to understand that how to write relational algebra expressions for a given query and optimize the developed expressions. They will also understand requirement design the database using E-R method and normalization.
Sem III **22BCA 303** **Data Communication and Networking**	This course will familiarize the students about basic concepts related to data communication with the issue and challenges of designing of protocols while delving into TCP/IP protocol suite. At the end of course ,the student will be familiar with the basic Networking Protocols, some communication techniques, detailed understanding of various layers in OSI and TCP/IP reference models.
Sem III **22BCA 304**	Practical lab based on Data structure and Database Management System
Sem III **22USECBCA301**	After completion of the course the students would be able to understand about the basic notions of discrete

Mathematical Foundation of Computing and Analysis (SEC)	and continuous probability. The students will be able to study methods of statistical inferences and the role that sampling distributions play in those methods.
Sem IV **22BCA 401** **Introduction to Web Designing**	The objective of the course is to impart the basic concepts of web designing and web programming. After the completion of the course, students would be able to understand about the client side and server side scripts used in programming, the basic concepts of designing websites, Databse connectivity with the web page.
Sem IV **22BCA 402** **Software Engineering**	After completion of the course the students would be able to understand about the software engineering practice over the entire system life cycle. They should be able to understand about the requirement engineering, analysis, prototyping, design , implementation , testing, maintenance activities and management of risks involved in software and embedded systems.
Sem IV **22BCA 403** **Artificial Intelligence**	The objectives of this course is to provide the basic ideas and techniques underlying the design of intelligent system and advanced representations formalism and search techniques. After the end of the course , the students would be able to develop a basic understanding of AI building blocks presented in intelligent agents. They will be able to choose an appropriate problem solving method and knowledge representation techniques.
Sem IV **22BCA 403**	Practical lab based on 22BCA 401
Sem IV **22USECBCA401** **Data Mining (SEC)**	This course will help students to study the concepts of mining the relevant information. After the completion of course they will be able to implement different types of techniques for Data mining and analyzing data, choose relevant models and algorithms for respective applications. They will be able to identify appropriate data mining algorithms to solve real world problems.

PROGRAM: M.A. HISTORY

We are running M.A. History under the Self Financing Scheme at our College. Admissions are available on merit basis. The Master's program currently enrolls 30 Master's students, who in pursuit of their degrees complete course work, learn methods of historical analysis, a variety of historical interpretations, and practical applications of the field.

PROGRAM OUTCOME

The master's programme in History trains students to specialise in a particular sub-field of history. In the course of the programme, students are trained to become academics who can answer research questions arising from the latest developments in academic thinking in a critical, creative and innovative way. Moreover, after completing this programme, students will have the knowledge and competence required for positions outside the university that require an academic level of thinking. After completion of the master's program a student can become teachers, researchers, administrators, politicians, historians, archaeologists and entrepreneurs and can transform the society by applying, practicing and imparting rational thinking.

PROGRAM SPECIFIC OUTCOME

PSO 1	Capacity to explain how and why important events happen
PSO 2	Understanding of the historical study and research method of study
PSO 3	A clear understanding of evidence collected from historical sources
PSO 4	Critical understanding of developments in historiography
PSO 5	Knowledge of the history of the India and Modern World
PSO 6	Informed familiarity with multiple cultures and diversity
PSO 7	Understand the skills that historians use in research

COURSE OUTCOME

Course	Course Outcome
Semester I **Course: 19HIS-101** **Principles of History**	● The student will obtain knowledge about meaning, scope and nature of history, same time he will come to know its relation with other social sciences ● Will learn about history of ideas, tradition and folklore etc ● Will gain insight into fundamentals of history, Periodization, historical facts, analysis and interpretation ● Learn about use and misuse of history
Semester I **Course:19HIS-102** **Ancient World**	● Will learn about stone age and Palaeolithic culture, bronze age civilization ● Learn about Harrapan Cilvilization, Chinese Cilvilization and Maya Civilization ● Will know about origin of state structure, society, economy, religion and contribution to world civilization.
Semester I **Course:19HIS-103** **Medieval World**	● The student will get detail knowledge of Europian history-political structure, economic, religious and cultural history and Feudalism in Europe ● Will learn about Growth of Islam, evaluation of Islamic State under Umayyad Dynasty and Abbasid Dynasty
Semester I **Course:19HIS-104** **Modern World**	● Will know about Mercantilism and the Beginning of Capitalism ● Will get insight into Non-Political Revolutions in Western Europe ● Know about various Political Revolutions in Modern World- American Revolution (1775-1783). French Revolution (1789). Russian Revolution (1917). Chinese Revolutions (1911-12, 1931 and 1949) ● Learn about Development of Imperialism in Asia and Africa, liberalism in Britain and Nationalism in Itly and Germany ● Get detailed knowledge of first and second world war and cold war

Semester I **Course:19HIS-105** **History of Haryana**	● The student will get detailed knowledge of Historical background of Haryana-culture, republic states, regime, battles. ● Role of Haryana in independence war and National movements ● Learn about various religious movements and contribution of Unionist party in eduction and agriculture reforms
Semester I **Course:19HIS-106** **Rise of Modern China (1834-1967 AD)**	● The student will get detailed knowledge of Historical background of China, emergence and re-emergence of nationalism in China, various movements and its consequences, cultural revolution in China
Semester I **Course: AEC** **Fundamental of Information Technology**	Student will learn ● Fundamental of computer ● Introduction to internet and networking ● Fundamental of mobile communication ● Business data processing ● application and packages
Semester II **Course:19HIS-201** **Archive of History**	● Will learn about The archive as an institution of social memory, history and experience, Narrative and history The colonial archive ● To Explore significance of records to individuals and organizations, Identify the basic concepts and theories influencing archives and records management ● Writing and documentation Law, evidence and the archive ● Will know about managing electronic records

Semester II **Course:19HIS-202** **Environmental History**	● Will understand nature and scope of ecology and its relation with other subjects ● Better understanding of environment, its components. Management of conservation of living and non- living resources of environment for sustainable development. Environmental degradation and its impact on present and future ● Know about Environment and Ecological Consciousness in Ancient India ● Environmental and Ecological Consciousness in Medieval and British India- exploitation and various policies
Semester II **Course:19HIS-203** **Iron Age Civilization**	● Understand about **b**eginning of Iron Age in the World-problem and issue, role of Iron technology in Ancient Civilizations ● Learn about the role of Iron technology in Ancient India, Megalithic culture and Painted Grey ware culture ● Learn about contribution of Greek and Roman civilization
Semester II **Course:19HIS-204** **Diaspora in Colonial India**	● Learn about Diaspora-its concept; origin; evolution and contemporary usage; Diasporic identities and their nature; categories of Indian Diaspora ● Will get knowledge about different Stages of Colonial Migrations ● Will know about Migrations in the 20th Century: Indian Diaspora in Western Countries (USA, UK and Canada) ● Learn about Indian Diaspora, Social and Economic Position and India's policy towards her Diaspora
Semester II **Course:19HIS-205** **Nationalism theories and Historical exploration**	● The student will learn about State and Nation, Civic nationalism, Ethnic/Romantic nationalism ● Will get insight into thoughts of early theorists and modern theorists ● Study about Non-Western nation states and the templates of Western nationalism,Turkey and Japan as derivative nationalisms

Semester II Course:19HIS-206 History of USA (1820-1973 AD)	● The student will get detailed knowledge of Historical background of USA, Growth of sectionalism, causes and consequences of the Civil War, growth of industrialisation and new technologies, Big Business, Emergence as a World Power, movements, role in and impact of first and second world war.
Semester II Course: SEC Communication Skill	● To introduce the theory and practice of communicative skills so as to enable the students to communicate effectively and conduct themselves graciously in the business of life.
Semester III Course: 19HIS-301 Histography: Concept , Methods and Tools	● Students will learn about meaning , nature, scope and relation of historiography with other subjects ● Will know about early Trends in History: Greeco-Roman, Chinese historiography and ancient Indian historiography ● Will acquire knowledge of various western and Indian approaches.
Semester III Course:19HIS-301 GB Political history upto 326BC	● Learn about Sources of Ancient Indian History: Archaeological & Literary and Main Features of the Stone Age ● Know about Indus Civilization , its Origin & extent, Town Planning and Drainage system, Political System and its Decline ● Get knowledge of Vedic and Post Vedic Civilization ● Insight into Rise of Magadhan Empire and Political Condition of India on the eve of Alexander's Invasion
Semester III Course:19HIS-302 GB Political History 326 BC-320 AD	● Learn about the Mauryan Empire-rulers, their administration and achievements. ● Know about-New Political Development, The Sungas, The Satavahanas and The Indo-Greeks ● Rise of New Powers : a) The Saka-Kshatrapas b) The Pahlavas c) The Kusanas ● Know about Republics of The Yaudheyas, The Kunindas, The Audumbras and Political Condition of India before the rise of Gupta

Semester III Course:19HIS-303 GB Society and Culture of India from earliest time to 1200 AD	● Will learn about Socio-Cultural life of Harappan People, Vedic Society , Society at Buddha's Time ● Will get detailed knowledge of various Social Institutions-Family Organisation ,Varna system, Asrama system, Samskaras, Purusarthas, Marriage , Caste system , Slavery etc
Semester III Course:19HIS-304 GB Economic History of India upto 1200 AD	● Student will acquire knowledge about silent features of Indian economy from Stone Age to Later Vedic Age and P.G.W to Post Mauryan Economy. ● Come across Land types, land rights, irrigation system and revenue system from 600B.C. to 600 A.D.; feudal economy and land grants in ancient India; peasantry in ancient India. ● Know about Inland trade of northern and southern India; trade routes: inland or foreign (land or sea); foreign trade and temple economy of south India
Semester III Course:19HIS-305 GB Art and Architecture of Ancient India	● The student will know about Rock art of India, Harappan art & architecture, town planning; regional style of art and architecture. ● Gain insight into Shilpa and Kala in Indian societies with special reference on artists and their activities ● The art of devalays, chaityas, pratimas/murtis and bhiti-chitras-300 B.C.E. to 600 A.D,evaluation of temple architecture in India ● Learn about General outline of art & architecture: Khajuraho-kandariya and mahadeva; Vijayanagar, Jaunpur, Gujarat, Rajputana, Bharatpur and Malwa.
Semester III Course:19HIS-306 GB Gender and Women in Ancient India	● Students will learn about various types of historiography like colonial, Nationalist Marxist and others ● Will get an overview of women in various religious traditions ● Will get a picture of women in ancient Indian literary tradition, in inscriptions

Semester IV **Course:19HIS-401** **Research Methodology and Historical investigation**	● The student will get knowledge about research Methodology , its objectivity, causation, generalization ● Critical analysis of primary sources and secondary sources. ● Come to know about Selection of theme, hypothesis, methods of data collection, arrangement of bibliography, footnotes/references, glossary & appendix. ● Learn about Making of Research Proposal, review of literature according to selected theme
Semester IV **Course:19HIS-401 GB** **Political History of India**	● Will get detailed knowledge of Gupta Empire & Vakatakas Empire, post Gupta empire-Maukharis and Sri-Kanth Janpad ● Administration and polity of early medieval India rulers.
Semester IV **Course:19HIS-402 GB** **Knowledge and culture in Ancient india**	The student will get knowledge about- ● Genesis of Ancient Indian Knowledge like Vedas, Upnishads and growth of astronomy ● Development of Knowledge in a stratified Society-Buddhist and Jainist epitomology, Dharma and Karma ● Evolution of Classical Philosophical systems- – Contestations with Budhists, Jainas and Lokayatikas, Ritualism of PurvaMimamsa , Evolutionism of Samkhya and Yoga. ● Theoretical Concepts ● Growth of science, technology and arts of the Bronze Age and Iron Age cultures ● Knowledge in South India and Others part of the World ● Early interactions with West Asia
Semester IV **Course:19HIS-403 GB** **Society , culture and Religious changes in Ancient India**	● The student will learn about ancient Indian education system and major educational institutions. ● Learn about - Evolution of Brahamanical Religion. Spread and Schism- Vaisanavism, Shaivism, Hetrodox Sects-Buddhism, Jainism-Emergence, Causes, Teachings, Spread and Tantricism. ● Understand Religious Beliefs and Social Stratification: A Study of Vedism. Violence and non-violence-Killing, sacrifice and war, Dynamics of Religion.

Semester IV **Course:19HIS-404 GB** **Historical Geography of Ancient India**	● Learn about Sources of ancient Indian historical geography and their importance: Archaeological and Literary ● Acquire knowledge of main geographical divisions of India Himalayas, Eastern India, South India, Central India ● Will gain knowledge about mountains, rivers, cities and towns.
Semester IV **Course:19HIS-405 GB** **Science and Technology in Ancient India**	● Will understand meaning, scope and sources of history of science and technology in ancient India ● Learn about science and technology of astronomy and mathematics ● Will get insight into Science & technology in Harappan civilization ● learn about Metal technology: Harappan copper tools; coins minting; invention of iron plough and wars weapons special reference of Maurya and Gupta age
Semester IV **Course:19HIS-402 (CC)** **Seminar**	Every candidate will have to deliver a seminar of 30 minutes duration on a topic (not from the syllabus) which will be chosen by him / her in consultation with the teacher of the department.

PROGRAM : M.A. (HINDI)

PROGRAM OUTCOME

साहित्य में रुचि रखने वाले विद्यार्थियों के लिए हमारा महाविद्यालय स्वनिधि पोषित विषय के रूप में एम ए हिंदी कार्यक्रम का संचालन भी करता है। इस विषय में दाखिला मेरिट के आधार पर होता है तथा सीटों की संख्या सीमित है। हिंदी हमारी राष्ट्रीय भाषा, राजभाषा एवं मातृभाषा होने के नाते प्रत्येक भारतीय के लिए हिंदी का ज्ञान होना अति आवश्यक है । हिंदी विषय में परास्नातक डिग्री एक विद्यार्थी को भारतीय तथा विदेशी साहित्य की समझ के साथ स्थानीय तथा राष्ट्र की संस्कृति को समझने का अवसर भी प्रदान करती है।

PROGRAM SPECIFIC OUTCOME

- हिंदी में परास्नातक करने के बाद छात्र देश के सर्वोच्च पदों पर नियुक्ति पा सकता है।
- छात्र शोध कार्य हेतु इस विषय को गहनता से पढ़कर शोध कार्य पूर्ण कर सकता है।
- छात्र में हिंदी की डिग्री प्राप्त करके अनुवादक के पद पर नियुक्ति प्राप्त कर सकता है।
- छात्र शिक्षण के क्षेत्र में जा सकता है।

COURSE SPECIFIC OUTCOMES

प्रथम सत्र आधुनिक हिंदी कविता(१८५७-१९३६)	इस विषय के अध्ययन से तत्कालीन राजनीतिक सामाजिक व अन्य समस्याओं से मुक्ति के लिए किए गए संघर्ष की जानकारी मिलेगी। इसके अध्ययन से भविष्य के समाज में शोषण से संघर्ष की प्रेरणा मिलेगी।

साहित्य की समझ	समाज में साहित्य की बड़ी भूमिका है,साहित्य जीवन को समृद्ध करता है।इस पेपर के अध्ययन से विद्यार्थी समाज में चलती सोच,दस्तूर बदलना या स्थापित करना आदि प्रकार के कार्यो से समाज को स्वस्थ रखने में अच्छी भूमिका अदा कर सकता है।
हिंदी कहानी	हिंदी गद्य लेखन की एक विधा है। 19वीं सदी के अंत में गद्य में एक नई विधा का विकास हुआ जिसे कहानी के नाम से जाना गया मनुष्य जन्म के साथ ही साथ कहानी का भी जन्म हुआ और कहानी कहना और सुनना मानव का आदि स्वभाव बन गया है जो छात्रों को अपने समाज से संबंधित हर स्थिति का ज्ञान करवाता है।
हिंदी साहित्य का इतिहास आदिकाल से रीति काल तक	साहित्य की विकास मान परंपरा उसके उद्भव से आज तक की स्थिति का क्रमबद्ध अध्ययन किया जाता है।
भाषा विज्ञान एवं हिंदी भाषा	इस विषय के अध्ययन से विद्यार्थी सरकारी कार्यालयों में राजभाषा अधिकारी के रूप में कैरियर बना सकता है और सोशल मीडिया से लेकर तमाम प्लैटफ़ॉर्म जैसे फ़ेसबुक ,ट्विटर ,यू ट्यूब आदि में शानदार कैरियर उपलब्ध है।
विशिष्ट रचना कार	इस पेपर में विद्यार्थी क़लम के सिपाही प्रेमचंद के साहित्य का विस्तृत अध्ययन करता है प्रेमचंद के साहित्य में समाज की समस्याओं का विस्तृत चित्रण है समाज में व्याप्त कुरीतियों रूढ़िवादिता और तत्कालीन सामाजिक और राजनीतिक परिस्थितियों का चित्रण प्रेम चंद ने अपने साहित्य में किया है, अन्यत्र कहीं नहीं प्राप्त होता।

कंप्यूटर का हिंदी में अनुप्रयोग	वर्तमान समय कंप्यूटर का युग है और किसी भी क्षेत्र में कंप्यूटर के बिना कार्य असंभव सा हो गया है। इस पेपर के अध्ययन के बाद विद्यार्थी हिंदी भाषा में कंप्यूटर के उपयोग के बारे में समझ सकेगा। विद्यार्थी कंप्यूटर प्रणाली के परिचय एवं विकास के बारे में जानकारी प्राप्त करेगा। साथ ही इंटरनेट के उपकरणों से परिचित होगा।इसके अतिरिक्त विभिन्न हिंदी वेबसाइट का परिचय भी उसे मिलेगा,साथ ही विभिन्न सोशल साइट्स के उपयोग व महत्व के बारे में जानकारी प्राप्त करेगा।
द्वितीय सत्र आधुनिक हिंदी कविता (१९३६-१९६७)	इसके अध्ययन से विद्यार्थियों को आधुनिकता व आधुनिक कवियों की जानकारी मिलती है।इसमें नवजागरण के अध्ययन से किये गए संघर्ष की जानकारी मिलेगी व भविष्य के समाज में शोषण से संघर्ष की प्रेरणा मिलेगी।
हिंदी नाटक एवं रंगमंच	हिंदी रंगमंच लोक एवं पारसी रंगमंच की पृष्ठभूमि का आधार लेकर विकसित हुआ। ध्यातव्य है कि भरत मुनि ने नाट्य शास्त्र में नाटक शब्द का प्रयोग केवल नाटक के रूप में ना करके व्यापक अर्थ में किया था। जिसके अंतर्गत रंगमंच,अभिनय, नृत्य,संगीत, वेशभूषा, रस, शिल्पदर्शन आदि सभी पक्ष आ जाते हैं। इस पेपर के अध्ययन के द्वारा छात्र को इन सभी पक्षों की विस्तृत जानकारी मिल जाएगी।
हिंदी उपन्यास	इस पेपर के अध्ययन से समाज विकास में बाधक रूढ़िवादी विचारधारा के बारे में जानकारी मिलेगी।इसके अध्ययन से विभिन्न पात्रों के जीवन की घटनाओं की जानकारी मिलेगी ताकि मानव मन का मनोवैज्ञानिक विश्लेषण कर व्यक्ति की समस्या को समझने में सहायता मिलेगी।
लोक साहित्य संदर्भ एवं पाठ हरियाणा का हिंदी साहित्य	किसी भी राष्ट्र का साहित्य उसके लोक साहित्य के बिना अधूरा है। यही कारण है कि हिंदी साहित्य के एक अंग के रूप में लोक साहित्य का अध्ययन किया जाता है जो कि विद्यार्थी को अपने क्षेत्र के साहित्य से परिचित कराता है।

अनुवाद: सिद्धांत एवं प्रयोग	इस पेपर में विद्यार्थी अनुवाद के बारे में विस्तृत जानकारी अर्जित करता है अनुवाद की प्रकार अच्छी अनुवादक की योग्यताएं अनुवाद की भारतीय परंपरा कंप्यूटर अनुवादित अनुवाद की समस्याएँ आदि जानकारी विद्यार्थी प्राप्त करता है और परिणाम स्वरूप विद्यार्थी एक अच्छी अनुवाद के रूप में विकसित हो सकता है।
संप्रेषण कौशल	ये पेपर विद्यार्थी में संप्रेषण कौशल के विकास के लिए है ।संप्रेषण निरंतर चलने वाली प्रक्रिया है,संप्रेषण में विचारों का आदान प्रदान होता है। संप्रेषणसंगठन के व्यक्तियों एवं। समूह का वाहक एवं विचार अभिव्यक्ति का माध्यम है।संप्रेषण के कई प्रकार हैं जैसे ऊर्ध्वमुखी,अधोमुखी,समूह जन संप्रेषण आदि का ज्ञान प्राप्त अपने लेखन और वाचन को शुद्ध कर सकता है और निजी और सरकारी संस्थानों में रोज़गार प्राप्त कर सकता है।
तृतीय सत्र समकालीन हिंदी कविता	इस पेपर में विद्यार्थी समकालीन हिंदी कविता के स्वरूप, प्रवृत्तियों ,प्रमुख कवियों के बारे में जानकारी प्राप्त करता है। समकालीन समय की कविता की सौंदर्य चेतना, हिंदी बोध,भाषा और कवियों के बारे में विस्तृत जानकारी प्राप्त करता है।
कथेतर गद्य विधाएँ	भाषा में तत्त्वों की जानकारी का सुगम तरीका गद्य है। उच्चारण, बलाघात, वर्तनी, शब्द रूपान्तरण, उपसर्ग, सन्धि, समास ,मुहावरे,पदबंध आदि भाषिक तत्त्वों का ज्ञान इस पेपर के माध्यम से सुगमता पूर्वक प्राप्त कर विद्यार्थी सरकारी संस्थानों व निजी क्षेत्र जैसे रेडियो वाचक,समाचार संवाददाता आदि पदों पर जा सकता है।
हिंदी की संस्कृति (संस्थाएं, आंदोलन, केंद्र)	इस पेपर के अध्ययन से विद्यार्थी हिंदी की प्रमुख संस्थाओं में जैसे नागरी प्रचारिणी सभा बनारस ,हिंदी साहित्य सम्मेलन ,प्रयाग ,दक्षिण भारत हिंदी प्रचार सभा ,चेन्नई केन्द्रीय हिन्दी संस्थान, आगरा आदि संस्थानों व उनके उद्देश्य की जानकारी प्राप्त करता है। विद्यार्थी हिन्दी भाषा के क्षेत्र में हुए विभिन्न आंदोलनों के बारे में विस्तृत जानकारी भी प्राप्त करता है।

भारतीय काव्यशास्त्र	इसके अध्ययन से विद्यार्थी काव्य के लक्षण ,उद्देश्य के साथ साथ अलंकार ,रस ,रीति आदि का ज्ञान प्राप्त कर व्याकरण सम्मत भाषा प्रयोग कर काव्य लेखन कर सकता है।
आधुनिक भारतीय साहित्य/ प्रवासी साहित्य	साहित्य की विकास मान परंपरा उसके उद्भव से आज तक की स्थिति का क्रमबद्ध अध्ययन किया जाता है।इस पेपर में आधुनिक भारतीय साहित्य और प्रवासी साहित्य के बारे में विद्यार्थी को जानकारी मिलती है।
जनसंचार माध्यम एवं हिंदी	यह पेपर विद्यार्थी को जनसंचार की अवधारणा, उपयोगिता, चुनौतियों और सम्भावनाओं से परिचित कराता है। साथ ही विभिन्न प्रकार के जन संचार माध्यमों, प्रिंट मीडिया, इलेक्ट्रॉनिक मीडिया और सोशल मीडिया माध्यमों में लेखन, भाषा, प्रस्तुतिकरण आदि से भी अवगत कराता है।
चतुर्थ सत्र आदिकालीन और मध्यकालीन कविता	इस पाठ्यक्रम को उद्देश्य विद्यार्थियों को आदिकालीन और रीतिकालीन काव्य की पृष्ठभूमि और प्रवृत्तियों से परिचित कराना है।विद्यार्थी तत्कालीन काव्य और कवियों के बारे में विस्तार से जानकारी प्राप्त करता है।
अस्मितामूल मूलक साहित्य चिंतन (स्त्री आदिवासी किसान आदि)	अस्मितामूलक विषय के अंतर्गत वे सभी विषय आ जाते हैं जिन्हें मनुष्य की अस्मिता से जोड़कर देखा जाता है, जिन्हे हाशिए पर लाकर छोड़ दिया गया। भाषा, धर्म, लिंग,जाति, वर्ण आदि विषय अस्मितामूलक विमर्श के आधार हैं। स्त्री विमर्श, दलित विमर्श तथा आदिवासी विमर्श आदि अस्मितामूलक विषय के उदाहरण हैं।
पाश्चात्य काव्यशास्त्र	इस पेपर के अध्ययन से पश्चिमी कवियों के लेखन की जानकारी प्राप्त होती है।पश्चिमी लेखकों की सकारात्मक व रचनात्मक विचारधारा की उपयोगिता भावी पीढ़ी समझ सकती है।

हिंदी आलोचना	आलोचना साहित्य की एक प्रमुख विधा है और प्रस्तुत पाठ्यक्रम में विद्यार्थी हिंदी साहित्य में आलोचना की अवधारणा एवं उसके स्वरूप,विकास,वैचारिकता और वर्गीकरण के बारे में जन अध्ययन करता है ।साथ ही हिन्दी साहित्य के प्रमुख आलोचकों और रचनाकारों के बारे में भी ज्ञान प्राप्त करता है।
समकालीन साहित्य चिंतन मार्क्सवाद से विखंडनवाद विचारधाराओं केसंदर्भ में	इस पाठ्यक्रम में विद्यार्थी साहित्य चिन्तन की विभिन्न विचारधाराओं से परिचय प्राप्त करते हैंऔर हिंदी साहित्य में उनके प्रभाव का अध्ययन करता है जिनमें से प्रमुख हैं -गांधीवादी साहित्य चिंतन, अम्बेडकरवादी साहित्य चिंतन, मार्क्सवादी साहित्य चिन्तन, मनोविश्लेषण वादी साहित्य चिन्तन, अस्तित्ववादी साहित्य चिन्तन,आधुनिकता वादी साहित्य चिंतन और संरचनावादी साहित्य चिंतन आदि।
विशिष्ट रचनाकार कबीर दास	इस पेपर के अध्ययन से कबीरदास की विचारधारा की जानकारी मिलेगी । वर्तमान व भविष्य की सामाजिक ,धार्मिक ,आर्थिक,राजनीतिक समस्याओं के हल में कबीर साहित्य से शिक्षा ली जा सकती है।

PROGRAM : M Com (MASTERS IN COMMERCE)

To meet the demands of Industry and Academics, the college is offering PG Course in Commerce under Self Financing Scheme having limited number of seats.

PROGRAM OUTCOME

PO 1	To inculcate the knowledge of business and the techniques of managing the business with special focus on marketing, Insurance and banking theory law and practices
PO 2	To impart the knowledge of basic accounting principles and the latest application oriented corporate accounting methods.
PO 3	To develop the decision making skill through costing methods and practical application of management accounting principles.
PO 4	To enhance the horizon of knowledge in various fields of commerce through advertising and sales promotion, auditing and entrepreneurial development.
PO 5	To enhance computer literacy and its applicability in business through the latest version of tally and e-commerce principles.
PO 6	To create awareness in application oriented research through research for business decisions.

PROGRAM SPECIFIC OUTCOMES

PSO 1	After Completing Masters in Commerce students the student gets a better understanding of all core areas, specifically Advanced Accounting, International Accounting, Management, Security Market Operations and Business Environment, Research Methodology and Tax planning.
PSO 2	They are able to Develop an ability to apply knowledge acquired in problem solving
PSO 3	The student gets ability to work in teams with enhanced interpersonal skills and communication.
PSO 4	The students can work in different domains like Accounting, Taxation, HRM, Banking and Administration.

PSO 5	Achieve Ability to work in MNCs as well as pvt, and public companies.
PSO 6	Get ability to start their own business.
PSO 7	Useful for To develop team work, leadership and managerial and administrative skills.
PSO 8	A Students can go further for professional courses like CA/ CS/CMA/CFA

COURSE SPECIFIC OUTCOMES

Semester 1 **Course code: 19MC-101** **Course: Management Process and organisational behaviour**	• The student will obtain basic knowledge of Management , different thoughts and processes . • Learn about attitude learning Perception and behaviour application in management. • Will know about motivational leadership theories and their use in management. • Organisational development groups and group cohesiveness. • Subject helps the student in developing skills. We also have to help the freshers in getting opportunities in industry.
Semester 1 **Course code: 19MC-102** **Course: Financial accounting**	• The student will get Broad knowledge of financial accounting practices in India and its Different components. • Basic accounting concepts and conventions and principles. • Financial statement Analysis and interpretation. • Cash flow statement and its use in businesses. • It is a combination of econometric And Statistical Techniques and it helps the student to term numerical approaches to increase their use in solving business problems.

Semester 1 **Course code: 19MC-103** **Course: Business Economics**	• Understanding about business economics, its use, nature and function in Economy. • Business objectives like profit maximization and wealth maximization. • Demand analysis and its forecasting, Law of demand and elasticity of demand. • Production function and isoquant curve and its use in businesses • Different market forms like Perfect marketing Monopoly market monopolistic market and Pricing policies.
Semester 1 **Course code: 19MC-104** **Course: Business environment**	• The student will understand the basic concept of the business environment and its components organisational policies. • Environment scanning Reforms in the Indian economy. • Different economic policies Like Monetary policy fiscal policy, industrial policy. • To understand the legal environment of business like competition at Consumer Protection Act and environmental . • Business environment increase the knowledge of their students .Changes and opportunities develop in the environment for all businesses of national level.
Semester 1 **Course Code: 19MC-105** **Course: IT fundamental**	• The student will furnish the use of it in business operations. • Concept of Data and information. • Information system and Organisational strategies. • Organisational application and decision support like SCM and CRM,ERP. • E business and current trends Designing of e-commerce sites.

Semester 1 **Course Code: 19MC-106** **Course: Business communication**	• This will make the student learn and practice in constructive presentation meetings dealing with conflict and improve communication skills. • Basics of communication listening techniques of presentation. • Presentation skills and different forms of communications • Writing skills And use of different reports. • Interview and its preparation, Ethics in business.
Semester 2 **Course Code: 19MC-201** **Course: Quantitative techniques for Business Decisions**	• The objective of this course is to increase the extent to which statistical thinking is embedded in value for decision making. • Understanding the concept of correlation And regression in decision making. • Basic concept of theory of testing of hypotheses. • Analysis of variance for testing the differences between different groups of data for Homogeneity. • Concept of association of attributes.
Semester 2 **Course Code: 19MC-202** **Course:Accounting for managerial decisions**	• This will expose the student The basic concept of managerial accounting and analyse financial statement and its interpretation • Management Accounting Management Accountant and its position in business. • Contemporary issues in Management Accounting. • Standard costing, variance analysis and transfer pricing. • Responsibility accounting Ethics in management accounting.
Semester 2 **Course Code: 19MC-203** **Course: Financial management**	• This paper will acquaint The student with the broad framework of financial decision In business organisation . • Financial Management planning and time value of money. • Capital budgeting and capital structure decisions. • Cost of capital and dividend decision. • Working capital management management

Semester 2 **Course Code: 19MC-204** **Course: E commerce**	• The objective of this is to provide analytical Framework and understanding of e-commerce. • E-Commerce system and different service provider internet and its role in e-commerce. • Electronic payment system Bhim UPI, Paytm Google Pay etc. • E marketing E auction, E ticketing, E Brokers etc. • Digital economy and its impact on Indian businesses Future of e-commerce Indian context.
Semester 2 **Course Code: 19MC-205** **Course:Marketing management**	• This will make the student able to examine the basic marketing management concepts, its role and importance with marketing mix. • The important concept of every marketer is marketing strategies targeting and Positioning. • Every business applies the process of product life cycle and its impact on our economy. • Pricing and promotion mix like advertising, personal selling, sales promotion and public relation. • Distribution channel and its determinants and Marketing research.
Semester 2 **Course Code: 19MC-206** **Course: Computerised accounting system**	• This paper will enhance the skill required for computerised accounting system and to develop knowledge of basic accounting applications specially with the Tally ERP 9 • Computerized accounting creation of groups account designing and creating vouchers • Installation of Tally ERP 9 stop group category and ledger creation • Preparing reports in Tally ERP 9 and working with payroll vouchers • Taxation with the help of Tally ERP 9 calculating VAT GST in Tally ERP 9

Semester 3 **Course Code: 19MC-301** **Course: Research methodology**	• Student will be able get detailed knowledge about research methodology, Process of research methodology and report writing • Significance of research in business and research process • Developing research proposal formation of research hypothesis and Research Design • Various methods of data collection, sampling and sampling design • Data processing and interpretation and report writing and documentation
Semester 3 **Course Code: 19MC-302** **Course: Human Resource Management**	• This paper will provide broad knowledge of human resource management, recruitment process trade unions and industrial relations. • Human resource techniques, evaluation and growth in India. • Need of training and development Different techniques and workers participation in management. • Role of Employee moral, industrial productivity and Collective bargaining in India. • Industrial Relation and industrial unrest.
Semester 3 **Course Code: 19MC-303** **Course: Corporate law**	• Learn about the basic concept of Corporate Law and changing dimensions of Corporate Laws. • Company formation, corporate veil and promotion of company. • Incorporation of Business and memorandum of association and its applicability. • Article of association,share of capital and paperless trading. • Winding up of a company and its consequences.

Semester 3 **Course Code: 19MC-304** **Course: Corporate banking** **(Elective paper)**	• Understanding the meaning and importance of Corporate Banking and various services provided by corporate banks. • Corporate banking, credit management and policies. • Credit appraisal process and qualities of Credit officers. • project Finance, infrastructure financing, RBI guidelines Regarding financing. • Documentation, monitoring and supervision of advances.
Semester 3 **Course Code: 19MC-305** **Course:Insurance and Risk management** **(Elective paper)**	• This paper will enhance theoretical and empirical Knowledge of Insurance and risk management. • Risk types and prediction techniques. • Concept of Insurance,re- insurance co insurance and bancassurance. • Legal aspects of insurance principle of utmost good faith interest,Proximate cause and contribution and subrogation. • Pricing of insurance and claim settlement IRDA act 1999.
Semester 3 **Course Code: 19MC-306** **Course: Investment management analysis** **(Elective paper)**	• This paper will acquaint and practices of Security Analysis and to understand the process of values market intermediation. • Investment Speculation, investment process,SEBI and its role. • Fundamental analysis and technical analysis. • Portfolio Management and its Basic concept, Risk and return of a Portfolio. • Assets pricing model, ArbitragePricing theory and its evaluation

Semester 4 **Course Code: 19MC-401** **Course: Strategic management**	• About the concept of strategic management decision making And Aware about the strategic evaluation and control. • School Thoughts of strategy formation, Decision making. • Vision mission statement and SWOT analysis. • Strategy formulation Business level Strategies and tactics. Bhoot • Strategic evaluation and control Types and limitations.
Semester 4 **Course Code: 19MC-402** **Course: Entrepreneurship**	• To equip the student with the basic Theoretical and practical Knowledge Required to start and be entrepreneurial in india. • Entrepreneurship concept, function and prerequisites. • business planning, principle of business planning and process. • Project appraisal economic, Technical, managerial and financial. • Women Entrepreneurship and rural entrepreneurship in India.
Semeste 4 **Course Code: 19MC-403** **Course: Business ethics and corporate governance**	• The student will able to understand about the concept of Business Ethics, corporate governance and the understanding of Influences of ethics in business. • Corporate governance SEBI guidelines and reforms in Company Act. • Corporate management vs corporate governance, Chairman quality power and responsibility. • Business Ethics models and principles.. • Ethics in finance, HRM,marketing production and operational management.

Semester 4 **Course Code: 19MC-404** **Course: International Finance (Elective paper)**	• The aim of this paper is to provide Basic concept of international Finance Current trends in international trade and Finance. • National investment modes balance of payment and current account deficit. • International Monetary system and transfer pricing and tax evasion. • International liquidity creation of SDR European monetary system bonds Euro GDR and ADR. • Parity Conditions in International Finance and currency forecasting.PPP Theory and the fisher effect.
Semester 4 **Course Code: 19MC-405** **Course: Banking and Banking Law (Elective paper)**	• To expose the students to the basic concept of Banking commercial banks and Banking Regulation Act. • Banking function recent development in banks Indian banks versus foreign banks. • Structure of cooperative banks in India regional rural bank SIDBI and Exim Bank. • Banking sector reforms in India NPA Management. • Banking Regulation Act 1949 digital payment system, internet banking and mobile banking.

PROGRAM : M.Sc. (MATHEMATICS)

Our College is running M.Sc. program in the subjects of Mathematics under the Self Financing Scheme with 30 seats. Admission is done purely on merit basis.

PROGRAMME OUTCOME

• Inculcate critical thinking to carry out scientific investigation objectively without being biased with preconceived notions.
• Equip the student with skills to analyze problems, formulate an hypothesis, evaluate and validate results, and draw reasonable conclusions thereof.
• Prepare students for pursuing research or careers in industry in mathematical sciences and allied fields.
• Imbibe effective scientific and/or technical communication in both oral and writing.
• Continue to acquire relevant knowledge and skills appropriate to professional activities and demonstrate the highest standards of ethical issues in mathematical sciences.
• Create awareness to become an enlightened citizen with commitment to deliver one's responsibilities within the scope of bestowed rights and privileges.

PROGRAMME SPECIFIC OUTCOMES

After successful completion of the program , a student will be able to:

1. Have basic understanding and knowledge in different core areas of mathematics such as Algebra, Analysis, calculus, differential equations, mechanics, numerical analysis and in some of the other elective areas. Demonstrate understanding of the concepts/Theories/Methods from such areas of mathematics.
2. Have a broad background in mathematics and develop the essential mathematical reasoning, knowledge, skills and aptitude to pursue further studies and research in Mathematics.
3. Communicate mathematics effectively and preciselyby written, computational and graphical means.
4. Apply knowledge, understanding, methods, techniques and skills of Mathematics to analyze, evaluate and solve problems of Mathematics and/or the mathematical problems having applications in

engineering/science/technology/life sciences so as to enhance career prospects in different fields.

COURSE SPECIFIC OUTCOMES

Semester I (23MTH-N-101) Abstract Algebra	In this course, students will learn about certain algebraic structures called groups, subnormal groups, Normal groups, sylow's group, Rings, linear transformation, Jordan form of matrices and nilpotent matrix. Students will also be familiar with composition series of a group, number of sylow subgroups, simple group and Jordan form of matrices.
Semester I (23MTH-N-102) Ordinary Differential Equations and Calculus of Variation	In this subject student will learn to identify the type of a given differential equation, select and apply the appropriate analytical technique for finding the solution of first order and selected higher order ordinary differential equations. The students get to learn the critical points, stability theory and its application. Explain problems of calculus of variations and introduce concept of extremizing the functional.
Semester I (23MTH-N-103) Real Analysis	This course is aimed to study countable and uncountable sets, measurable sets and their properties, functions of several variable and their properties. Students will also learn about Sequence and series of functions.
Semester I (23MTH-N-104) Mathematical Statistics	In this paper, students get the knowledge of probability and standard statistical distributions. Introduce concept of testing of hypothesis. This subject helps the students to develop interest in the research in applied mathematics.
Semester I (23MTH-N-105) Classical Mechanics	To demonstrate knowledge and understanding of the fundamental concepts in the dynamics of system of particles and motion of rigid body. Also learn to represent the equations of motion for complicated mechanical systems using the lagrangian and Hamiltonian formulation of classical mechanics

Semester I (23ITCS-N-101) IT Skills	• To understand basics of computer and working with OS. • To develop working skills with productivity tools, graphics designing and Internet. • To acquire basic web design programming skills. • To understand basic of MS-Office.
Semester I (23ITSCL-N-101)	Computer Lab (Based on IT Skills)
Semester I 23LS-EVS101 Environmental Studies and Sustainable Development	This course will provide the fundamental knowledge about environment and related issues that have direct impact on human population.
Semester I Open Elective Course/Value Added Course Yoga, Health and Nutrition	After the completion of the course the student will get good knowledge of : • Our body system, dimensions and determinants of the health, various health problems and communicable diseases, their prevention and control • Better understanding of food and nutrition • Meaning and classification of Yoga , yogic practice, techniques and benefits Will come to know about impact of yoga on human body and about meditation.
Semester I Activity/Hobby Club	These courses are the courses based upon the content that leads to extracurricular activities. These courses may be chosen from a pool of courses designed to provide extracurricular activities such as poetry, science club, drama etc. and awarded a letter grade at the completion of course.
Semester II 23MTH-N-201 Abstract Algebra-II	In the course of Abstract Algebra-II, students will study certain structures called modules, ascending and descending series of a group, Noetherian Modules, Artinian Modules, properties of Noetherian and Artinian groups, Extension of a field, Simple Extension, Primitive element, reducible and irreducible polynomial, Splitting field, Normal Extension and Galio's Theory.

Semester II 23MTH-N-202 Complex Analysis	This course is aimed to provide an introduction to the theories for functions of a complex variable. To study and understand the concepts of C- R equations, analytical functions, elementary functions, Cauchy integral formulas and its applications. Illustrate different types of singularities, improper integrals, mobius transformation and mappings of regions under some special transformations.
Semester II 23MTH-N-203 Partial Differential Equations	The aim of this paper is to study the theory of partial differential equations and solution methods. Illustration of wave equation, heat equation and Laplace equation with study of qualitative properties such as existence and uniqueness of their solution. Also learner will be familiar with Green's function and its properties. Learner will be able to solve PDEs using method of separation of variables, Fourier transform, Numerical and approximate methods etc.
Semester II 23MTH-N-204 Measure and Integration Theory	This course is aimed to study countable and uncountable sets, measurable sets and their properties, measurable functions and its properties. Students will also learn about Lebesgue integral and Lebesgue Lp spaces.
Semester II 23MTH-N-205 Applied Numerical Analysis	This course is aimed to develop the concept of error analysis, solution of linear and non- linear equations. Students will also learn about differentiation operator, interpolation, numerical differentiation and integration. Also Students will solve ordinary differential equations using different techniques.
Semester II 23MTH-N-206 Programming in FORTRAN 90/95	Students will understand basic concepts of programming in Fortran 90, Basic syntax of the Fortran language, the steps to compile, configure and run a Fortran program of the given problem.
Semester II 23MTH-N-207	Computing Lab (Based on Fortran)

Semester II 21ENG-100 Communication Skills	To familiarize the students with the nature and importance of communication. To orient the students towards theory and practice of Communication Skills. To Impart knowledge of common courtesies and conversional practices. To acquaint the students with positive attributes of personality.
Semester II OEC/ VAC	
Semester II Activity/Hobby Club	These courses are the courses based upon the content that leads to extracurricular activities. These courses may be chosen from a pool of courses designed to provide extracurricular activities such as poetry, science club, drama etc. and awarded a letter grade at the completion of course.
Semester III 21MTH 301 Topology	After studying, this course, students will be familiar with topological spaces, compactness, connectedness and separation exams. Also, students will be able to prove some results of real line with the use of top logical approaches.
Semester III 21MTH 302 Differential Geometry	After studying this paper, students will be able to know about the fundamentals of differential geometry primarily by focusing on the theory of curves and surfaces in three space. Also, students will be able to explain the different properties of curves and theory of surfaces.
Semester III 21MTH 303 Mechanics of solids	After studying this paper, students will be able to illustrate the concepts of Cartesian tensor, stress and strains. Also will learn about complex state of stresses. Students will also be familiar with the theory of elasticity.
Semester III 21MTH 305 Discrete Mathematics	After studying this paper, students will learn about logic and proofs, recursion, graph, theory, Boolean algebra, Lattices, and other important discrete maths concept. It helps students to choose the research area in the field of mathematics.
Semester III 21MTH 306 Analytical number theory	After studying this paper, students will be able to illustrate the concept of divisibility and linear congruence is. Also, students will be familiar with Diophantine equations, quadratic congruence, and some theoretic functions.

Semester III 21MTH 311 MATLAB Programming	By the end of this course, students will be able to: • Use MATLAB effectively to analyse and visualise data. • Apply numeric techniques and computer simulation to solve engineering related problems. • Design and document computer programs and analyses in a careful and complete manner in MATLAB. • Demonstrate understanding and use of fundamental data structures. • Create and control, simple plot and user interface, graphics objects in MATLAB.
Semester III 21MTH 312	Computing Lab III (Based on 21MTH-311)
Semester III 21MTH 313	Self Study paper I
Semester III Open elective II Swacch Bharat internship Program	Swachh Bharat Abhiyan is the most significant cleanliness campaign by the Government of India. students have to train their younger ones to keep things clean.they can also visit areas and bring out the importance of mission and encourage them in contributing to it.
Semester IV 21MTH 401 Functional analysis	After studying this paper, students will be able to illustrate the concept of norm, spaces, inner product spaces, linear operators. Also, learner will be able to explain the natural abiding concepts and conjugate spaces.
Semester IV 21 MTH 402 Integral equation	After completion of this course, learner will be able to illustrate the concept of linear integral equations. Also will be able to explain about Green's function.
Semester IV 21MTH 403 Mechanics of solids II	After studying this paper, learner will be able to illustrate the concept of stress, strain, torsion of beams and variation methods. Also, learner will be familiar with concept of Viscoelasticity and elastic wave.
Semester IV 21 MTH 404 Advanced Fluid Dynamics	After studying this paper, learner will be able to illustrate the concept of different kind of fluid flows using different models. Also, students will be familiar with the applications of some basic fluid flow.

Semester IV **21 MTH 408** **Statistical Inferences**	After studying, this course, students will be able to illustrate the conclusions about the whole population on the basis of a sample. Also, students will be familiar with the concept of estimation, and bias, Ness, sufficiency, consistency, statistical hypothesis, and non-parametric theory.
Semester IV **21 MTH 411** **Introduction to LaTeX and R programming**	After the end of the students will be able to- • Understand the basics of La TX and various commands associated with it. • Understand the basics in our programming in terms of constructs, control statements, string functions. • Understand the use of our for big data analytics. • Learn to apply our programming for tax processing. • Apply the R programming from a statistical perspective.
Semester IV **21 MTH 412**	Computing Lab IV (Based on 21MTH-411)
Semester IV **21 MTH 413**	Self study paper II

PROGRAM : M. SC (PHYSICS)

Our College is running the Courses of M.Sc. in the subject of Physics, under the Self Financing Scheme with Limited No. of seats.

PROGRAM OUTCOME

The Master of Science in Physics program provides the candidate with knowledge, general competence, and analytical skills on an advanced level, needed in industry, consultancy, education, and research. On completion of program, the post graduates will:

- Apply the knowledge and skill in the design and development of Electronics circuits to fulfill the needs of Electronic Industry.
- Become professionally trained in the area of electronics, optical communication, nonlinear circuits, materials characterization and lasers.
- Pursue research related to Physics and Materials characterization.
- Demonstrate highest standards of Actuarial ethical conduct and Professional Actuarial behavior, critical, interpersonal and communication skills as well as a commitment to life-long learning.

PROGRAM SPECIFIC OUTCOMES

PSO 1	Understanding the basic concepts of physics particularly concepts in classical mechanics, quantum mechanics, statistical mechanics and electricity and magnetism to appreciate how diverse phenomena observed in nature follow from a small set of fundamental laws through logical and mathematical reasoning
PSO 2	Learn to carry out experiments in basic as well as certain advanced areas of physics such as nuclear physics, condensed matter physics, nanoscience and electronics.
PSO 3	Understand the basic concepts of certain sub fields such as nuclear and high energy physics, atomic and molecular physics, solid state physics, plasma physics, general theory of relativity, nonlinear dynamics and complex system.
PSO 4	Gain hands on experience to work in applied fields

PSO 5	Gain a through grounding in the subject to be able to teach it at college as well as school lever.
PSO 6	Viewing physics as a training ground for the mind developing a critical attitude and the faculty of logical reasoning that can be applied to diverse fields.

COURSE SPECIFIC OUTCOMES

Semester I **Code: 22PHY-101** **Course: Mathematical Physics**	• The student will acquire knowledge of matrics and various integral transformers, their property, derivatives and methods. • Learn about differential equations • Will know about Special functions like Bessel function, Legendre function, Hermite P{Olynomials and Laguerre Polynomials • Understand Complex algebra, Functions of a complex variable, Analytic function, evaluation of definite integrals
Semester I **Code: 22PHY-102** **Course: Classical Mechanics**	• The student will acquire knowledge about Classical Mechanics • Learn about Lagrangian and Hamiltonian formulations • Will get detailed knowledge of Poisson bracket and theory of small oscillations • Understand Two-body central force problem and H-J theory
Semester I **Code: 22PHY-103** **Course: Quantum Mechanics I**	This course enables the student to understand in detail- • General formulation of Quantum Mechanics • Matrix formulation of Quantum Mechanics • Solution of three-dimensional systems • Quantum theory of Angular Momentum.
Semester I **Code: 22PHY-104** **Course: Electronic Devices and Circuits I**	The student will learn about : • Basics of semiconductor devices • Field Effect Transistor (FET) –basic circuits and operations • Feedback in Amplifiers and various network theorems • Power amplifiers and regulators: introduction and functioning.

Semester I **Code: 22PHY-105** **Course: Communication Skill**	• The course helps the student to understand basics of the human communication, barriers of the communication and measures of effective communication. • Learn about various communication skills like correct mode of request , greeting, conversation, formal speech etc • Will come to know about Science communication • Acquire knowledge of personality development skills
Semester I **Code: 22PHY-106** **Course: IT fundamentals**	• This course aims to provide the student basic knowledge of information technology by introducing basic concepts of IT to the students. • The student will also acquire knowledge of Basic tools(MS Office) • Will come to know about MATLAB • Will get knowledge about Social media: measuring and monitoring, Applications of Internet, web browsers , search engines etc
Semester I **Code: 22PHY-107**	Physics Laboratory I
Semester I **Code: 22PHY-108**	Physics Laboratory II
Semester II **Code: 22PHY-201** **Course: Quantum Mechanics II**	After successful completion of this paper, the student will be well-versed in- • Approximate methods for bound states • Quantum theory of Scattering- • Many-particle systems
Semester II **Code: 22PHY-202** **Course: Nuclear and Particle Physics**	On completion of this course the student will learn about : • Have a basic knowledge of nuclear size ,shape , binding energy.etc and also the characteristics of nuclear force in detail. • Be able to gain knowledge about various nuclear models and potentials associated. • Grasp knowledge of Radioactive Decays, Nuclear Forces and Nuclear Reactions • Detail of Particle Physics

Semester II **Code: 22PHY-203** **Course:** **Solid State physics**	• Students will know about basic concepts via diffraction methods, lattice vibrations and free electrons, Hall effect. • Their introduction to the band structures of solids for studying different materials • Knowledge of Superconductivity and lattice defects
Semester II **Code: 22PHY-204** **Course:Electronic Devices & circuits II**	The student will gain knowledge of : • Operational amplifier. Its applications • Multivibrators and Oscillators • Optoelectronic devices
Semester II **Code: 22PHY-205**	Physics Laboratory III
Semester II **Code: 22PHY-206**	Physics Laboratory IV
Semester II **Code: 22PHY-207**	Seminar
Semester II **Code: 22PHY-208** **Course: Yoga, Health and Nutrition** **(Open elective)**	After the completion of the course the student will get good knowledge of : • Our body system, dimensions and determinants of the health, various health problems and communicable diseases, their prevention and control • Better understanding of food and nutrition • Meaning and classification of Yoga , yogic practice, techniques and benefits • Will come to know about impact of yoga on human body and about meditation.
Semester III **Code: 19PHY-301** **Course:** **Electrodynamics**	The student will be able to: • Understand Electrostatics and Magnetostatics • Electromagnetic Waves and Radiation by Moving Charges • Potential, fields and Radiations • Electrodynamics and Relativity

Semester III **Code: 19PHY-302** **Course:** **Atomic and Molecular Physics I**	After successful completion of the course, the student is expected to : • know about different atom model and will be able to differentiate different atomic systems, different coupling schemes and their interactions with magnetic and electric fields. • Understand Diatomic molecules and their rotational spectra, Rotational and Vibrational spectra of diatomic molecules in deatail • Electronic Spectra of diatomic molecules, Fluoescence
Semester III **Code: 19PHY-303 C** **Course:** **Physics of Nano material** **(Discipline Specific Elective I)**	• This course will enable the student to have basic knowledge about preparation of quantum nanostructures • To learn about Micro electromechanical Systems and Nanoelectrochemical systems. • Will learn about Synthesis/Fabrication of Nanomaterials/Nanostructures • To Study carbon nanotubes and their applications.
Semester III **Code:19PHY-304 C** **Course: Electronics I (DSC II)**	On completion of this course the student will learn about : Operational amplifiers, comparator and applications, Voltage regulators
Semester III **Code: 19PHY-308** **Course: Swacch Bharat(Open elective)**	The student will get knowledge of- • Concept of Swacchhata, Ways of awareness for Swachhata and Personal Hygeine • Health and Health Education, Balance diet and Sanitation practices • Solid waste management, Segregation, Disposal,Non-Biodegradable and Biodegradable waste • Compost pits, Biogas plants ,ways of campaigning and Role of Gram panchayat in Swachhta
Semester IV **Code: 19PHY-401** **Course:** **Statistical Mechanics**	• Define and discuss the concepts of microscopic and macroscopic states. • Explain the significance and value of condensed matter physics, both scientifically and in the wider community. • Explain statistical physics and thermodynamics as logical consequences of the postulates of statistical mechanics.

	• Understand the quantum mechanical formulation of statistical mechanics. • Discuss the concept and role of indistinguishability in the theory of gases • Apply the Bose-Einstein distribution to the calculation of properties of black body radiation. • Discuss current research topics in statistical mechanics
Semester IV **Code: 19PHY-402** **Course:** **Atomic and Molecular Physics II**	• Know about The origin of X-Rays, X-Ray emission spectra, Dependence of position of Emission lines on the atomic number • Be able to apply the principle of Raman spectroscopy and its applications in the different field of science & Technology. • To become familiar with different NMR and ESR spectroscopic techniques and its applications
Semester IV **Code: 19PHY-403 C** **Course:** **Experimental Techniques (Discipline Specific Elective III)**	• The student will get insight into Experimental Techniques to observe the defects in Lattice, Electron microscopy, OpticalTechniques. • Learn about Surface Analytical Techniques: Electron Spectroscopies-Auger, XPS (ESCA), UV-photoemission, X-ray absorption techniques: EXAFS, NEAFS, SIMS, RBS and low Energy electron diffraction techniques • Understand Spectroscopic and Scanning Probe Techniques in detail
Semester IV **Code: 19PHY-404 C** **Course:** **Electronics II (Discipline Specific Elective IV)**	• The student is able to gain knowledge of Amplitude Modulation and Frequency modulation which are basics of communication . • Students are able to gain the fundamental of IC fabrication which is advanced technology in this decade and upcoming future. • Student can take knowledge of M F technology which is advanced technology. • Students are able to gain the knowledge UJT, STR and tunneling phenomena, which is today knowledge of unipolar device.

PROGRAM : M.Sc. (CHEMISTRY)

PROGRAM OUTCOMES

On completion of M.Sc. Chemistry programme, graduates will be able to

PSO1: Apply advanced concepts of organic, analytical, physical and inorganic chemistry to solve complex problems to improve human life.

PSO2: Design experiments, analyze, synthesize and interpret data to provide solutions to different industrial problems by working in the pure, inter and multi-disciplinary areas of chemical sciences.

PSO3: Able to independently carry out research / investigation to solve practical problems and write / present a substantial technical report/document.

PROGRAM SPECIFIC OUTCOMES (PSOs)

PSO1: Gains complete knowledge about all fundamental aspects of all the elements of chemistry

PSO2: Understands the background of organic reaction mechanisms, complex chemical structures, instrumental method of chemical analysis, molecular rearrangements and separation techniques.

PSO3: Appreciates the importance of various elements present in the periodic table, coordination chemistry and structure of molecules, properties of compounds, structural determination of complexes using theories and instruments.

PSO4: Gathers attention about the physical aspects of atomic structure, dual behavior, reaction pathways with respect to time, various energy transformations, molecular assembly in nanolevel, significance of electrochemistry, molecular segregation using their symmetry.

PSO5: Learns about the potential uses of analytical industrial chemistry, medicinal chemistry and green chemistry.

PSO6: Carry out experiments in the area of organic analysis, estimation, separation, derivative process, inorganic semi micro analysis, preparation, conductometric and potentiometric analysis

COURSE OUTCOMES

Semester I **22CHE-101: Inorganic Chemistry-I** **(Concepts in Inorganic Chemistry)**
After completing this course, students will gain a thorough understanding of molecular symmetry through point groups and character tables, which will enhance their ability to analyze the properties of simple inorganic molecules. They will also develop a strong grasp of bonding theories in main group compounds, enabling them to predict molecular shapes and understand the energetics of hybridization. Additionally, students will learn to explain and predict the mechanisms of ligand displacement in octahedral and square planar complexes and apply Molecular Orbital Theory to analyze the electronic structures of these complexes, including the effects of π-bonding. Through studying inorganic chemistry, students will enhance their ability to analyze complex chemical systems, predict outcomes, and devise solutions to both theoretical and practical problems in inorganic chemistry and related disciplines.
22 CHE-102: Physical Chemistry-I **(Principles of Physical Chemistry-I)**
Upon completing this course, students will understand the foundational principles of quantum mechanics, including the basic postulates and the role of operators in quantum systems. They will be able to solve the particle in a box problem, illustrating key quantum concepts. Additionally, students will grasp the fundamental laws of thermodynamics and the concept of partial molar quantities, and they will be equipped to calculate entropy for various processes. They will also be proficient in analyzing the rate laws for reactions of different orders, including complex reaction mechanisms like consecutive, parallel, opposed, and chain reactions. Finally, students will learn the Debye-Hückel Theory, enabling them to determine activity and activity coefficients in electrolytic solutions, deepening their understanding of ion-ion interactions in these systems.
22CHE-103: Organic Chemistry-I **(Conceptual Organic Chemistry & Stereochemistry)**
By completing this course, students will achieve an advanced understanding of key concepts such as delocalization, conjugation, and aromaticity, which are fundamental to the stability and reactivity of organic molecules. They will gain

expertise in supramolecular chemistry, particularly in understanding non-covalent interactions that govern molecular recognition and assembly. Students will also develop a deep knowledge of conformational analysis, dynamic stereochemistry, and asymmetric synthesis, equipping them with the skills to predict and control stereochemical outcomes in complex organic reactions. Additionally, they will attain a comprehensive understanding of all types of nucleophilic substitution reactions and an in-depth grasp of elimination reactions, including their stereochemical implications, enabling them to apply these concepts in advanced organic synthesis and reaction mechanism analysis.
22CHE-104: Spectroscopy-I
By the end of this course, students will acquire updated knowledge of electronic and infrared spectroscopy, enabling them to analyze and interpret molecular spectra effectively. They will develop a strong understanding of Nuclear Magnetic Resonance (NMR) spectroscopy, including the principles and applications of both proton and carbon-13 NMR, as well as heteronuclear coupling. Additionally, students will gain proficiency in mass spectrometry, equipping them with the skills to determine molecular structures and compositions. These competencies will allow students to confidently utilize these spectroscopic techniques in advanced chemical analysis and research.
22 CHE-105 **Practical I- Inorganic Chemistry**
22CHE-106 **Practical II-Physical Chemistry**
22CHE-107 **Practical III-Organic chemistry**
Open elective (Swatchh Bharat Internship) Participating in the Swachh Bharat Internship offers students valuable hands-on experience in sanitation and waste management, enhancing their practical skills and community engagement. It fosters a deeper understanding of public health and environmental issues while contributing to tangible improvements in local communities. Interns also develop essential professional skills such as project management and communication, expand their professional network, and experience personal growth and fulfillment. Additionally, the internship enriches their resumes, showcasing their commitment to social and environmental causes and improving their future career prospects.

Semester II **22CHE-201: Inorganic Chemistry-II** **(Principle of Inorganic Chemistry)**
Students will gain a deep understanding of the mechanisms behind ligand displacement reactions in both octahedral and square planar complexes, enabling them to predict and explain these processes in various chemical contexts. They will also be proficient in interpreting the electronic spectra and magnetic properties of transition metals, which are crucial for understanding the behavior of these elements in various states. Additionally, students will learn about the synthesis, structures, bonding, and chemical reactivity of transition metal π-complexes, equipping them with the knowledge to explore these complexes' roles in catalysis and materials science. Furthermore, they will develop expertise in the structure and bonding of cluster compounds, enhancing their ability to analyze these complex systems. Lastly, students will understand the intricacies of electron transfer reactions in octahedral complexes, an essential aspect of redox chemistry and catalysis.
22CHE-202: Physical Chemistry-II **(Principles of Physical Chemistry-II)**
Students will grasp the concept of phases and phase diagrams for one- and two-component systems, understanding their practical significance in areas such as material science and chemical engineering. They will also explore various theories, including Arrhenius, Collision theory, and Activated Complex theory, to comprehend the factors influencing the rate of chemical reactions. Additionally, students will appreciate the role of statistics in chemistry, recognizing its importance in data analysis and experimental design. Lastly, they will gain a thorough understanding of the laws of photochemistry and the kinetics of photophysical processes, equipping them to analyze and predict the behavior of chemical systems under light exposure.
22CHE-203: Organic Chemistry-II **(Reaction Mechanism & Rearrangements)**
Students will have an in-depth understanding of aromatic electrophilic and nucleophilic substitution reactions, allowing them to analyze and predict the outcomes of these fundamental transformations. They will possess both fundamental and advanced knowledge of elimination reactions, including their mechanisms and applications. Students will also gain a comprehensive grasp of electrophilic addition reactions involving alkenes, alkynes, and allenes, as well as

a thorough understanding of addition, substitution, and condensation reactions of carbonyl compounds. Additionally, they will be well-versed in various rearrangement reactions and their applications in organic synthesis, enhancing their ability to design and execute complex synthetic pathways

22CHE-204: Statistics for Chemists

Students will acquire a solid understanding of statistical measures including central tendency, dispersion, and probability, which are essential for analyzing and interpreting data. They will grasp the concepts of random variables, distribution functions, and probability distributions, enabling them to model and predict outcomes based on statistical data. Students will also become adept at hypothesis testing and understanding sampling distributions, which are crucial for evaluating the validity of scientific claims. Additionally, they will gain expertise in correlation and regression analysis, providing them with the tools to explore relationships between variables and make informed predictions.

22CHE-205 IT Skills

The student will get knowledge of-

- Fundamentals of computers
- Introduction to internet and networking.
- Business data processing
- Various applications and packages like file management, MS Office, dealing with tables and data analysis.

22CHE-206
Practical-IV-Inorganic Chemistry

- Spectrophotometric Method:Determination of some metal ions
- Quantitative Analysis:Separation and determination of two metal ions of different inorganic compounds involving volumetric and gravimetric methods

19CHE-207
Practical V-Physical Chemistry

- Chemical Kinetics:To determine the temperature coefficient,Determination of activation energy
- Ultrasonic Interferrometry : to determine the speed of sound
- Potentiometry: to determine the strength of acid and base
- Refractometry : Determine the refractive index of the given liquids

22CHE-208
Practical VI - Organic Chemistry

- Qualitative Analysis: Separation, purification and identification of compounds of binary mixtures
- Organic Synthesis: Preparation of different types of organic compounds,recrystallized product along with m.p.

22CHE-209 Summer Training

The objective of Summer training is to render the students to work environment in the field of Chemistry at industry, academic institute and research institute. It helps them to learn the latest technologies, skills, methodologies and to build a strong foundation for their career growth. It will provide learning platform to students where they can enhance their ability, skills and become job ready.

Semester III
22CHE-301 Spectroscopy-II

Students completing this syllabus on Spectroscopy-II will gain a deep understanding of various spectroscopic techniques, including rotational, vibrational, Raman, and electronic spectra. They will also explore advanced methods like Electron Spin Resonance (ESR), Mössbauer spectroscopy, and Atomic Absorption Spectroscopy. This knowledge equips students with the skills to analyze molecular structures, understand spectroscopic data, and apply these techniques to solve complex chemical problems, particularly in research and industrial settings.

22CHE-304 Organic Chemistry Special-I
(Concerted Reactions and Photochemistry)

By the end of this course, students will be able to understand, explain, and predict various aspects of pericyclic reactions, including electrocyclic reactions and cycloadditions, which are crucial for advanced organic synthesis. They will gain in-depth knowledge of various photochemical reactions in organic chemistry, allowing them to explore how light influences chemical transformations. Additionally, students will acquire advanced knowledge of the photochemistry of carbonyl compounds, enhancing their understanding of these important reactions. They will also develop expertise in the photochemistry of aromatic compounds, equipping them to analyze and predict photochemical behavior in complex organic systems.

22CHE-307 **Organic Chemistry Special-II** **(Reagents for Organic Synthesis)**
Upon completing this course, students will be proficient in modern, classical, and green methods for the oxidation of various functional groups, enabling them to choose appropriate techniques for different synthetic challenges. They will also be well-versed in common reduction methods used in organic synthesis, understanding their applications and limitations. Additionally, students will learn about the applications of organometallic reagents in organic synthesis, gaining insights into how these reagents can facilitate complex transformations. Finally, they will acquire up-to-date knowledge of modern reagents used in synthesis, keeping them current with advancements in chemical methodology and expanding their toolbox for innovative problem-solving in organic chemistry.
22CHE-310 **Organic Chemistry Special-III** **(Advanced topics in Organic Chemistry)**
Students will develop a basic understanding of green chemistry principles, focusing on environmentally friendly and sustainable chemical practices. They will learn about the use of greener and renewable catalysts, including their applications in reducing environmental impact. Students will also gain foundational knowledge of chromatography techniques, which are essential for the separation and analysis of chemical compounds. Additionally, they will acquire a basic understanding of computational chemistry and its scope, including how computational methods can be applied to solve chemical problems. Finally, students will become familiar with various computational methods, equipping them with the tools to perform theoretical and predictive analysis in chemistry.
Open Elective- II Swach Bharat Internship
Swachh Bharat Abhiyan is the most significant cleanliness campaign by the Government of India. Students have to train their younger ones to keep things clean.They can also visit areas and bring out the importance of mission and encourage them in contributing to it.
22CHE-313 **Practical-VII - Organic Chemistry Special**

22CHE-316 **Practical- VIII Organic Chemistry Practical**
22CHE-319 **Practical-IX Organic Chemistry Special**
Semester IV **22CHE-403** **Organic Chemistry Special-IV** **(Bioorganic and Medicinal Chemistry)**
Students will gain an appreciation for the history of medicinal chemistry and a thorough understanding of the basic biochemical functions of living organisms, including the structural and functional details of biomacromolecules such as proteins, nucleic acids, and lipids. They will also learn about methods of enzyme inhibition and its significance in drug development, as well as the role of receptors as drug targets, signal transduction, receptor theory, and DNA-active drugs. Students will develop the capability to design, synthesize, isolate, separate, purify, and characterize drugs, equipping them with essential skills for drug development. Additionally, they will understand the general modes of action, synthesis, and medicinal uses of important drugs, providing a comprehensive overview of drug mechanisms and applications in medicine.
22CHE-406 **Organic Chemistry Special-V** **(Heterocyclic Chemistry and Disconnection Approach)**
Students will have both basic and advanced knowledge of heterocyclic chemistry, including the synthesis, chemical transformations, and reaction mechanisms of heterocyclic compounds. They will be adept at developing alternative and eco-friendly synthetic pathways for chemicals, contributing to more sustainable chemical practices. Additionally, students will be skilled in analyzing heterocyclic compounds, gaining insights into their structure and reactivity. They will also understand the disconnection approach, a method for designing synthetic routes by breaking down molecules into simpler fragments.
22CHE-409 **Organic Chemistry Special-VI** **(Chemistry of Natural Products)**
Students will gain both basic and advanced knowledge about various classes of natural products, including their structures and functions. They will develop skills

for analyzing these natural products and creating new sustainable methods for their synthesis. Students will also acquire expertise in developing industrially significant methods and designing eco-friendly synthetic pathways for chemicals. Additionally, they will gain an understanding of natural pigments, including their chemical properties and applications.
21ENG-100 Communication skills (DSE)
To introduce the theory and practice of communicative skills so as to enable the students to communicate effectively and conduct themselves graciously in the business of life- • Human Communication, Verbal and Non Verbal Communication, Barriers to communication, mass communication • Will learn more about greetings and introducing, permissions, participating in conversations, making speech, giving descriptions • More understanding of telephonic communication and etiquettes. • Learn personality development skills and know about emotional intelligence.
22CHE-412 **Practical-X Organic Chemistry Special**
22CHE-415 **Practical-XI Organic Chemistry Special**
22CHE-418 **Practical-XII Organic Chemistry Special**
19CHE-419 **Seminar /Journal Club (AECC)**