COURSE OUTCOMES OF THE CHEMISTRY:

After completion of three years degree students should be able to:

SEMESTER-I

PAPER-I

CO1. Know the Hybridization and shapes of molecules. Molecular orbital energy level diagrams

of different molecules and ions along with bond order, stability and magnetic properties. CO2. General characteristics of group III, IV &V elements. Synthesis of Diborane, carbides, nitrides, silicones, hydrazine and hydroxyl amine along with their properties and structure.
CO3. Understand the Bond polarization, Inductive effect, Mesomeric effect and Hyper conjugation with applications.
CO4. Knowing Preparation and properties of Alkanes, Alkenes, and Alkynes.Stability of Cycloalkanes through Bayer's Strain Theory.
CO5. Study of Preparation and electrophilic substitution reactions in aromatic compounds, Benzene. Ortho, para, meta directing ring activating and de-activating groups in substitution reactions.
CO6. Knowing about Atomic structure and elementary quantum mechanics.
CO7. Differences of Physical states. How the real gases are different from Ideal gases according to gas laws.
CO8. Analyze Structure of liquids. Determination of Surface tension and Viscosity. CO9. Study of general principals of Inorganic qualitative analysis.
CO10. Difference between conformational and configurational isomerism.Study of constitutional and stereo isomers with classification.
Laboratory CO11: Qualitative Analysis – Semi micro analysis of mixures.

SEMESTER-II

PAPER-II

CO1: Study of Oxides, Oxy acids, Inter halogens compounds and Pseudo halogens. CO2: Know the structure of Xenon compounds, Clatharate compounds
CO3: Study of Characteristics of d-block elements and triads.
CO4: Classification, study of preparation and properties of alkyl halides, Hydroxy compounds, Ethers and Carbonyl compounds. CO5: Make aware of Arrhenius theory, Ostwald's dilution law, and Debye-Huckel-Onsagar's equation. Study of Electrochemical and Galvanic cells.Significance applications of EMF.
CO6: Understand the theory of Quantitative Analysis.

CO7: Understand the Stereo isomerism, D,L and R,S- configurations with examples.
CO8: Understand the Colligative properties of dilute solutions. Study of relative lowering of vapour pressure, Elevation of boiling point, Depression of Freezing point and Osmotic pressure.
Laboratory CO: Quantitative Analysis of Acid-base, Redox and Complexometric Titrations.

SEMESTER-III

PAPER-III

CO1: Study and Differences between the Lanthanides and Actinides.
CO2: Study of the Coordination complexes. Learn the Werner's theory, Valence bond theory and Isomerism in Coordination compounds.
CO3: Know the preparation and properties of metal carbonyls and classification of Organ metallic compounds.
CO4: Understand the preparation and properties of Carboxylic Acids and their derivatives

CO5: Understand the preparation and properties of Nitro hydrocarbons, Amines, Cyanides and Isocyanides..
CO6: Thermodynamics-I,II: First law and second law of thermodynamics. Concept of Enthalpy, Internal energy. Derivation of Kirchhoff's equation, efficiency of heat engine by Carnot's cycle
Entropy, Free energy Gibb's function (G) and Helmholtz'sfunction (A) as thermodynamic quantities.
CO7: Evaluation of analytical data.
CO8: Learn the acidic nature of active α-hydrogen of Carbanion in different chemical reactions
CO8: Define the terms – Phase, Component and Degrees of freedom. Study of Water system, Pb-Ag system and Mg-Zn system.
Laboratory CO: Synthesis of Organic compounds.

SEMESTER-IV PAPER-IV
CO1: Knowing the Crystal field theory and splitting of d-orbitals in Octahedral, Tetrahedral , Square planar complexes.
CO2: Study of significance of essential elements and structure of Hemoglobin, Chlorophyll

CO3: Classification of Carbohydrates and study of Glucose and Fructose. Interconversions of Monosaccharides.
CO4: Knowing the classification and methods of preparation of alpha amino acids. Concept of structure and nomenclature of peptides.
CO5: Study of heterocyclic compounds – Furan, Pyrrole, Thiophene and pyridine.
CO6: Derivation of rate constant equations of Zero order, First order and second order reactions. Relation between the Half life period and rate constant.
CO7: Study of Photochemical reactions, laws of photo chemistry. Jablonski diagram, Fluorescence and Phosphorescence.
CO8:Study of valence band theory,free electron theory, conductors, semiconductors.
CO9: Study of Mannich reaction , Michael addition and Knoevengeal condensation Synthetic applications of Aceto acetic ester.
CO10:Colloids & Surface Chemistry.
Laboratory CO: Qualitative analysis of Organic compounds.

SEMESTER-V

Paper-V-SPECTROSCOPY AND CHROMATOGRAPHY

CO1: Make aware of Molecular spectroscopic methods – Microwave, Infrared and UV Visible spectrometric methods .
CO2: Make aware of Molecular spectroscopic methods – NMR,MASS spectrometric methods.

CO3: Learn the solvent extraction methods and different chromatographic techniques - TLC,Paper chromatography.
CO4:Study of Separation techniques - Column,Ion exchange and HPLC chromatography.
Laboratory CO: knowing about Experiments in Distribution law, Electrochemistry, Colorimetric and demonstration of Surface tension and Viscosity.

SEMESTER-VI

PAPER-VI-ELECTIVE A: MEDICINAL CHEMISTRY

CO1: Knowing the terminology in medicinal chemistry and differentiating the diseases.
CO2: Study of concepts of Enzymes and Receptors. Specificity of enzyme action,concepts of agonists and antagonists.
CO3: Study of synthesis and therapeutic activity of Chemotherapeutics, drugs for metabolic disorders and nervous disorders.
CO4: Study of Molecular messengers-hormones and neurotransmitters drugs. Knowing the health promoting drugs.
Laboratory CO: Performing experiments physical chemistry-kinetics, Potentiometry, P_H metry and conductometry.

Statistics:

Courses Outcomes:

Paper Title	Objective	Outcome

Descriptive Statistics & Probability	The main objective of this paper is to provide the background of data type, data collection methods, describing the data graphically, including its Central Tendency and dispersion.and it introducing fundamentals of probability theory, random variable and its distributions	A student should be able to prepare the data and select appropriate methods to represent data graphically and derive the basic descriptive statistics of data and students will be able to understand basic elements of probability theory and apply them to solve real life problems.
Probability Distributions	The objective of this paper is to introduce various univariate and bivariate discrete probability distributions, continuous probability distributions and their properties and applications in real life.	This course will enable the students to describe the data with the help of specific distributions and understand its behaviour.
Statistical Methods	This paper gives a theoretical understanding of various concepts like methods of estimation and properties of the estimators. It introduces the concepts of curve fitting, correlation and regression.	To develop estimators for population characteristics using different estimation techniques. study the properties of the developed estimators in sample.
Statistical Inference	The main objective of this paper is to make the students understand various sampling distributions and their applications.	Understand various sampling distributions and their applications. solve real life problems in practical ways.
Applied Statistics-I	The main objective of this paper is to understand various sampling techniques. It also aims at providing an understanding of estimating sample size and population characteristics.	Students will understand the theory of various sampling techniques while conducting sample surveys in many instances.
Applied Statistics-II	The main objective of this paper is to introduce the concept of anova, principles of	Understand the concept of vital statistics, index numbers. and applying them in policy making.

	experimentation, index numbers. It also aims at introducing the vital statistics which themselves are a critical National information resource for understanding public health and examining key indicators such as fertility, mortality, and causes of death and the factors associated with them.	
SEC-II-Data Collection , Presentation and Interpretation	To acquire useful and usable information and to make most informed decisions possible.	It helps researchers to categorise, manipulate and summarise the information in order to answer critical questions.
SEC-IV-Data Scaling Techniques and Report writing	It ensures that the data collected is reliable, accurate and appropriate for statistical analysis.	Convey information to the reader in a clear understandable format, in order that the reader may make an informed decision upon.

Courses Outcomes:

Paper Title	Objective	Outcome
Descriptive Statistics & Probability	The main objective of this paper is to provide the background of data type, data collection methods, describing the data graphically, including its Central Tendency and dispersion.and it introducing fundamentals of probability theory, random variable and its distributions	A student should be able to prepare the data and select appropriate methods to represent data graphically and derive the basic descriptive statistics of data and students will be able to understand basic elements of probability theory and apply them to solve real life problems.

Probability Distributions	The objective of this paper is to introduce various univariate and bivariate discrete probability distributions, continuous probability distributions and their properties and applications in real life.	This course will enable the students to describe the data with the help of specific distributions and understand its behaviour.
Statistical Methods	This paper gives a theoretical understanding of various concepts like methods of estimation and properties of the estimators. It introduces the concepts of curve fitting, correlation and regression.	To develop estimators for population characteristics using different estimation techniques. study the properties of the developed estimators in sample.
Statistical Inference	The main objective of this paper is to make the students understand various sampling distributions and their applications.	Understand various sampling distributions and their applications. solve real life problems in practical ways.
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Applied Statistics-II	The main objective of this paper is to introduce the concept of anova, principles of	Understand the concept of vital statistics, index numbers. and applying them in policy making.
	experimentation, index numbers. It also aims at introducing the vital statistics which themselves are a critical National information resource for understanding public health and examining key indicators such as fertility, mortality, and causes of death and the factors associated with them.	
SEC-II-Data Collection , Presentation and Interpretation	To acquire useful and usable information and to make most informed decisions possible.	It helps researchers to categorise, manipulate and summarise the information in order to answer critical questions.

SEC-IV-Data Scaling Techniques and Report writing	It ensures that the data collected is reliable, accurate and appropriate for statistical analysis.	Convey information to the reader in a clear understandable format, in order that the reader may make an informed decision upon.

Mathematics-Courses Outcomes:

Paper Title	Objective & Outcome
Differential & Integral Calculus	The course is aimed at exposing the students to some basic notions in differential calculus. By the time students complete the course they realize wide ranging applications of the subject.
Differential Equations	The main aim of this course is to introduce the students to the techniques of solving differential equations and to train them to apply their skills in solving some of the problems of engineering and science. After learning the course the students will be equipped with the various tools to solve few types differential equations that arise in several branches of science
Real Analysis	The course is aimed at exposing the students to the foundations of analysis which will be useful in understanding various physical phenomena. After the completion of the course students will be in a position to appreciate beauty and applicability of the course.

Algebra	The course is aimed at exposing the students to learn some basic algebraic structures like groups, rings etc. On successful completion of the course students will be able to recognize algebraic structures that arise in matrix algebra, linear algebra and will be able to apply the skills learnt in understanding various such subjects.
Linear Algebra	The students are exposed to various concepts like vector spaces, bases, dimension, Eigen values etc.After completion of this course, students appreciate its interdisciplinary nature
Integral Transforms	Students will be exposed to Integral Transforms. The students are also learning the Applications of LaplaceTransformsto Differential Equations which arises in Physics and Engineering Problems. Students apply their knowledge to solve some problems on special functions and Differential Equations by using the Integral Transforms.
SEC-II-Logic and Sets	Students learn some concepts in set theory and logic. After the completion of the course students appreciate its importance in the development of computer science.
SEC-III-Number Theory	Students will be exposed to some of the jewels like Fermat's theorem, Euler's theorem in the number theory. Students use the knowledge acquired solving some divisor problems.

Mathematics-Courses Outcomes:

Paper Title	Objective & Outcome
Differential & Integral Calculus	The course is aimed at exposing the students to some basic notions in differential calculus. By the time students complete the course they realize wide ranging applications of the subject.
Differential Equations	The main aim of this course is to introduce the students to the techniques of solving differential equations and to train them to apply their skills in solving some of the problems of engineering and science. After learning the course the students will be equipped with the various tools to solve few types differential equations that arise in several branches of science
Real Analysis	The course is aimed at exposing the students to the foundations of analysis which will be useful in understanding various physical phenomena. After the completion of the course students will be in a position to appreciate beauty and applicability of the course.
Algebra	The course is aimed at exposing the students to learn some basic algebraic structures like groups, rings etc. On successful completion of the course students will be able to recognize algebraic structures that arise in matrix algebra, linear algebra and will be able to apply the skills learnt in understanding various such subjects.

Linear Algebra	The students are exposed to various concepts like vector spaces, bases, dimension, Eigen values etc.After completion of this course, students appreciate its interdisciplinary nature

Course Outcomes Urdu

Urdu is taught as second language at UG level in all six semesters. The outcome of Urdu language teaching is to provide language based knowledge and skills to the students in Urdu to shape them in the present day demands of Urdu language proficiency in the fields of Information Technology, Urdu DTP, Journalism in Print and Electronic media and script writing etc. The students can opt for higher studies in Urdu up to Ph.D. and Urdu as special subject in IAS and various courses after completing the course at UG level.

Semester I:

The course outcome at this level is to learn the old forms of prose and poetry. Introduction of Urdu literature, Urdu Ghazal, forms of Urdu prose Hikayat, Drama, Inshaiyah , Safarnama etc are taught to expertise the students in various forms of Urdu Prose and Poetry. Students will learn the deep meaning of Ghazal, famous poets like Quli Qutub Shah,Wali,Siraj and Meer Taqi Meer.

Semester II:

The course outcome at this level is to learn the new forms of prose and poetry. The Ghazals of Aatish, Ghalib, Hali and Maqdoom are taught. Introduction to Urdu Nazm and poems of Hafeez Jalandhari, Sahir Ludhyanvi ans Shaz Tamkanat are taught. In Prose bioghraphy of Ghalib,humorous article of Mushtaq Ahmed Yusufi and sketch of Sulemanr Areeb is taught. Students can have the knowledge of Ghazal,Nazm Urdu essays etc and they can write their own poetry and prose.

Semester III:

The course outcome at this level is to learn the old forms of prose and poetry. The old poetry forms Mathnavi, Qaseeda and the old prose forms Dastan, Novel and Inshaiyah are taught. Students can get awareness about the old patterns of Urdu language and by learning these forms they can write creative writings in these forms.

Semester IV:

The course outcome at this level is to learn the old forms of prose and poetry. The old poetry forms of Marsia, Qaseeda, Rubiyaat ,Qata are taught. In prose students can learn general essay, Humorous essay and reprtach. These forms of prose and poetry are helpful to students to learn the art of poetry and essay and creative writings.

Semester V:

The course outcome at this level is to learn the skill based knowledge of Urdu in Mass Media, Print and Electronic Journalism and art of Urdu Journalism. This skill based knowledge is helpful to the students to involve in joub oriented activities during the studies and in practical life.

Semester VI:

The course outcome at this level is to learn the skill based knowledge of Urdu in computers, Urdu DTP and designing, Art of Translation etc. These technical usage of Urdu language in computers and information technology is the present day demand and students will be skilled with these special subjects in Urdu.

Course Outcomes

PROGRAMMING IN C AND C++

1. Learn to develop simple algorithms and flow charts to solve a problem.
2. Develop problem solving skills coupled with top down design principles.
3. Learn about the strategies of writing efficient and well-structured computer algorithms/programs.
4. Develop the skills for formulating iterative solutions to a problem.
5. Learn array processing algorithms coupled with iterative methods.
6. Learn text and string processing efficient algorithms.
7. Learn searching techniques and use of pointers.
8. Understand recursive techniques in programming.

DATA STRUCTURES

1. To be familiar with fundamental data structures and with the manner in which these data structures can best be implemented; become accustomed to the description of algorithms in both functional and procedural styles
2. To have a knowledge of complexity of basic operations like insert, delete, search on these data structures.
3. Ability to choose a data structure to suitably model any data used in computer applications.
4. Design programs using various data structures including hash tables, Binary and general search trees, heaps, graphs etc.
5. Ability to assess efficiency tradeoffs among different data structure implementations.
6. Implement and know the applications of algorithms for sorting, pattern matching etc.

OPERATING SYSTEM

1. Describe the important computer system resources and the role of operating system in their management policies and algorithms.
2. To understand various functions, structures and history of operating systems and should be able to specify objectives of modern operating systems and describe how operating systems have evolved over time.
3. Understanding of design issues associated with operating systems.
4. Understand various process management concepts including scheduling, synchronization, and deadlocks.
5. To have a basic knowledge about multithreading.
6. To understand concepts of memory management including virtual memory.
7. To understand issues related to file system interface and implementation, disk management.
8. To understand and identify potential threats to operating systems and the security features design to guard against them.
9. To have sound knowledge of various types of operating systems including Unix and Android.

COMPUTER NETWORKS

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

SOFTWARE ENGINEERING

1. Basic knowledge and understanding of the analysis and design of complex systems.
2. Ability to apply software engineering principles and techniques.
3. To produce efficient, reliable, robust and cost-effective software solutions.
4. Ability to work as an effective member or leader of software engineering teams.
5. To manage time, processes and resources effectively by prioritising competing demands to achieve personal and team goals Identify and analyzes the common threats in each domain.

DATABASE MANAGEMENT SYSTEMS

1. Gain knowledge of database systems and database management systems software.
2. Ability to model data in applications using conceptual modelling tools such as
   ER Diagrams and design data base schemas based on the model.
3. Formulate, using SQL, solutions to a broad range of query and data update problems.
4. Demonstrate an understanding of normalization theory and apply such knowledge to the normalization of a database.
5. Be acquainted with the basics of transaction processing and concurrency control.
6. Familiarity with database storage structures and access techniques.

7. Compare, contrast and analyse the various emerging technologies for database systems such as NoSQL.
8. Analyse strengths and weaknesses of the applications of database technologies to various subject areas.

OBJECT ORIENTED PROGRAMMING

1. Learn the concepts of data, abstraction and encapsulation 2. Be able to write programs using classes and objects, packages.
3. Understand conceptually principles of Inheritance and Polymorphism and their use and program level implementation.
4. Learn exception and basic event handling mechanisms in a program
5. To learn typical object-oriented constructs of specific object oriented programming language

WEB TECHNOLOGIES

1. To understand the terms related to the Internet and how the Internet is changing the world.
2. To understand how computers are connected to the Internet and demonstrate the ability to use the World Wide Web.
3. Demonstrate an understanding of and the ability to use electronic mail and other internet based services
4. Understand the design principles of Web pages and how they are created
5. To develop an ability to create basic Web pages with HTML.

PROGRAMMING IN JAVA

1. Knowledge of the structure and model of the Java programming language,
2. Use the Java programming language for various programming technologies
3. Develop software in the Java programming language,
4. Evaluate user requirements for software functionality required to decide whether the Java programming language can meet userrequirements

PYTHON PROGRAMMING

1. Develop and Execute simple Python programs.
2. Structure a Python program into functions.
3. Using Python lists, tuples to represent compound data

Develop Python Programs for file processing

COURSE OUTCOMES OF PHYSICS

After completion of three year degree course, students should be able to

SEMESTER –I, PAPER-I : MECHANICS AND OSCILLATIONS

CO1: Students will attain a common level in basic mechanics and oscillations and laid a secure foundation in mathematics for their future courses.

CO2: To analyze vector algebra to solve mathematical problems related with different areas of physics.

CO3: Able to solve the equations of motion for any mechanical system like variable mass system, rigid bodies.

CO4: Understand the application of central force to the stability of circular orbits, Kepler's Laws of planetary motion.

CO5: Develop understanding of Special theory of relativity and its applications to various inertial non- inertial frames.

CO6: Apply the laws of simple harmonic motion of various oscillating systems like Simple harmonic oscillator, Damped harmonic oscillator and Forced oscillator.

Laboratory CO: Develop their experimental and data analysis skills through a wide range of experiments in the practical laboratories.

SEMESTER –II, PAPER-II: THERMAL PHYSICS

CO1: To understand the fundamental ideas and methods applicable to all systems in thermo dynamical equilibrium.

CO2: Understand the Thermodynamic Potentials and Maxwell Relations and apply them to thermo dynamical problems.

CO3: To acquire knowledge of Low Temperature Physics and its applications in different methods of liquefaction of Hydrogen and Helium, Refrigeration.

CO4: Understanding different Ensembles, concept of phase space, classical and quantum statistics, Maxwell- Boltzmann velocity distribution law, Bose- Einstein statistics and Fermi- Dirac statistics.

CO5: To study quantum theory of black body radiations and various laws, Wien's law, Rayleigh-Jeans law, Planck's law. Methods of measurement of radiation using Pyrometers and Pyroheliometers.

Laboratory CO: The ability to formulate, conduct, analyze and interprets experiments related to thermal physics.

SEMESTER –III, PAPER III: ELECTROMAGNETIC THEORY

CO1: To acquire knowledge all areas of Electromagnetism including Electrostatics, Magneto statics, Electromagnetic Induction and Electromagnetic waves.

CO2: Able to apply Gauss's law to different electric surfaces and relation between Electric field intensity and Electric Potential.

CO3: Students get an idea about how to apply Biot-Savart law and Ampere's circuital law to different electromagnetic fields.

CO4: To study Faraday's laws of electromagnetic Induction, difference between Self Induction and Mutual Induction.

CO5: Analyze Maxwell's Equations in Integral and differential form and basic plane wave phenomenon such as Reflection, Transmission and Absorption characteristics at interfaces in different medias.

CO6: Able to apply Network Theorems to a wide range of electric circuits.

CO7: Acquire knowledge of growth and decay of currents in LR, CR circuits and LCR series and parallel resonant circuits, AC and DC motors.

Laboratory CO: Students get confidence in working with different electric circuits and Verify Network Theorems like Thevenin's , Norton's, Superposition, Maxmimum power transfer Theorems.

SEMESTER –IV, PAPER- IV: WAVES AND OPTICS

CO1: To understand transverse wave propagation along stretched strings and it's wave equation, Study of longitudinal wave propagation in Bars under different boundary condition.

CO2: Study of Interference by Division of wave front and Division of amplitude, application of principles of interference to light reflected by thin films and wedge shaped films.

CO3: Application of the principles of Fraunhofer Diffraction to waves that pass through a single, double slit and diffraction grating- Fresnel Diffraction through zone plates.

CO4: To study different methods of polarization by reflection, refraction, double refraction and selective absorption using Polarizer and Analyzer.

Laboratory CO: Understanding different optical phenomena like Reflection, Refraction, Interference, Diffraction and Polarization by performing experiments.

SEMESTER –V, PAPER- V: MODERN PHYSICS

CO1: To understand Atomic and Molecular Spectroscopy and to briefly discuss about Emission and Absorption spectrum, selection and intensity rules, L-S and J-J Coupling Schemes, Zeeman, Stark, Paschen -Back effects.

CO2: Understanding Inadequacy of classical physics which lead to Quantum mechanics, which covers topics like Dual nature of matter, matter waves, Uncertainty principle, Schrodinger Time independent and Time dependent wave equations.

CO3: To study Nuclear physics and to briefly understand disintegration law, nuclear structure, nuclear models, Alpha and Beta Decay and particle Detectors.

CO4: To understand basic crystal structures (SC, BCC, FCC, CsCl, NaCl, Diamond and Zinc Blend)crystallography, X-Ray Diffraction and Bonding in crystals.

Laboratory CO: Students get hand on experience of performing experiments of modern physics like Measurement of Planck constant, verification of inverse square law, Energy gap of semiconductor, Photo-cell, G-M Counter.

SEMESTER-VI, PAPER-VI: ELECTRONICS

CO1: Students acquire knowledge of band theory of solids, difference of intrinsic and extrinsic semiconductors , N-type , P-type semiconductors, P-N Junction diode, Zener diode, halfwave and full wave and bridge rectifier.

CO2: Get an idea of bipolar junction transistor(CB,CE, CC configuration), RC coupled amplifier, concepts of Feedback and Oscillators.

CO3: Study of construction and characteristics of special devices like Photo diode, Shockley diode, Solar cell, Opto couplers, FET, UJT, SCR.

CO4: Understanding the basics of Digital Electronics, Inter conversion of Binary, Decimal and Hexadecimal number systems. Realization of Logic Gates using descrete components.

Laboratory CO: Students get practical experience of simple electronic circuits, Diodes, Logic Gates, verification of
Demorgan Laws

Department of Political Science:

COURSE OUTCOME (HONOURS)

CO 1. POLITICAL THOUGHT WESTERN POLITICAL THOUGHT

- It helps students discover the political philosophy that forms the basis of politics in the Western world, to interpret the political philosophies of the Greek, Roman, French, English and German philosophers in historical context as well as relate them to contemporary politics.
- Origin of the knowledge in Political Thought.
- Concretizing their base in political thought.
- Differences of thought in the different phases of the History of political thought:
- Getting enlightened with fundamental features of political thought.
- Helping the students in the future preparation of their course of study in political thought.

INDIAN POLITICAL THOUGHT

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

CO 2. POLITICAL THEORY

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

CO 3. GOVERNMENT AND POLITICS IN INDIA

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

CO 4. COMPARATIVE GOVERNMENT AND POLITICS

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

CO 5. INTERNATIONAL RELATIONS

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

CO 6. SOCIETY, STATE and POLITICS

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

CO7. PUBLIC ADMINISTRATION

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

CO8. COLONIALISM & NATIONALISM IN INDIA & WOMEN POLITICS

- It acquaints the students with the various facets of British rule in India.
- Helps in understanding the process of the growth of Indian national movement.
- Appraises about the various social movements in India, both pre & post-independent.

- It promotes knowledge on how feminist movement has developed & influenced present-day Indian political system.
- Helping the students in preparing them for different competitive examinations, particularly for civil services examinations.

Course Outcomes:

Animal Diversity – Invertebrates & Vertebrates

CO1. Describe general taxonomic rules on animal classification.

CO2. Classify Phylum Protozoa to Echinodermata with taxonomic keys.

CO3. Imparts conceptual knowledge of vertebrates, their adaptations and associations in relation to their environment.

CO4. Classify phylum Protochordates to Mammalia.

CO5. Complex Vertebrate interactions.

Comparative Anatomy and Developmental Biology of Vertebrates:

CO1. Comparative knowledge of Integumentary, Digestive, Circulatory, Urinogenital, Nervous and Skeletal system of various classes of vertebrates.

CO2. Basic concepts of developmental biology.

CO3. Concept of hormonal regulation of reproduction.

Physiology and Biochemistry:

CO1. Students gain fundamental knowledge of animal physiology

CO2. Seeks to understand the mechanisms that work to keep the animal body alive and functioning.

CO3. Interactions and interdependence of physiological and biochemical processes.

CO4. Students are taught the detailed concepts of digestion, respiration, excretion, the functioning of nerves and muscles, cardiovascular system, endocrine system and reproductive system.

CO5. Physiological and biochemical understanding through scientific enquiry into the nature of mechanical, physical, and biochemical functions of animals, their organs, and the cells of which they are composed.

CO6. Students learn the concepts of endocrine systems and homeostasis.

Genetics and Evolutionary Biology:

CO1. Division aspects of basic unit of life i.e. cell.

CO2. Mendelian and non-mandilion inheritance.

CO3. Understanding of basic concepts of genetics and laws of inheritance.

CO3. Concept behind genetic disorder, gene mutations- various causes associated with inborn errors of metabolism.

CO4. Theories of evolution and knowledge of evolution of species

CO5. Knowledge about eras and population genetics.

CO6. Understanding of genetic basis of evolution, human karyotyping and speciation

Applied Zoology

CO1. Understands concepts of fisheries, fishing tools and site selection.

CO2. Understands about parasites and epidemiology of parasites in human and animals.

CO3. Use of recombinant DNA technology in genetic manipulations and in a variety of industrial processes.

CO4. Understanding of in vitro culturing of organisms and production of transgenic animals.

CO5. Types of breeds in animal farming and poultry farming along with their management.

CO6. Aqua culture systems, induced breeding techniques and post harvesting techniques.

Insect Vectors and Diseases

CO1. Imparts knowledge of non-beneficial insects.

CO2 Interaction of insect vectors with humans and spread of diseases.

CO3. Managements and control of vector and vector born diseases.

Apiculture:

CO1. Knowledge about honey bee and bee rearing.

CO2. Knowing beehives, bee keeping equipment, methods of extraction of honey and processing of honey.

CO3. Bee enemies and diseases.

CO4. Bee economy and entrepreneurship in apiculture

Sericulture:

CO1. Gives knowledge of silk worm rearing.

CO2. Mulberry cultivation.

CO3. Pests and diseases associated with silk worm and mulberry.

CO4. Various process involved in silk production

Aquarium Fish Keeping:

CO1. Provides knowledge of ornamental fish breeding which is highly professional and attractive avenue for youth.

CO2. Aquarium fish keeping, aquarium setup and accessories.

CO3. Aquarium fishes, their food and feeding.

CO4. Fish transportation and management.

CO5. Maintenance of aquarium.

COURSE OUTCOMES OF BIOTECHNOLOGY

B. Sc Biotechn010kY (Three years-Sis Semester)

On completion of the course, students are able to:

- Comprehend about the introduction and history of biotechnology
- The scopes in agriculture, medicinal, agriculture and environment.
- The cell biology and basic structural and functional study of prokaryotic and eukaryotic cells
- The growth, nutrition and factors affecting microbial growth
- Principle, general features and significance of biophysical terms like density, sedimentation, centrifugation, surface tension, adsorption • Monochrome staining, Negative staining, Gram•s staining.
- Motility testing by hanging drop method
- The definition, classification, biological function, chemical and physical properties, structural characteristic of proteins and nucleic acids
- Principle, working and applications of instruments viz, pH meters, spectrophotometer, centrifuge, viscometer, and laminar air flow
- Concept of enzyme activity and enzyme inhibition
- Metabolic pathways EMP, TCA, ETC, Gluconeogenesis
- The fundamentals of DNA damage and repair, including types of mutation and repair mechanisms.
- The Transcription, enzymes involved in transcription and its inhibitors.
- The Translation, enzymes involved in translation and its inhibitors.
- The concept of operon and its structure and regulation

Department of Botany:

COURSE OUTCOMES

SEMESTER -1

PAPER -1, MICROBIAL DIVERSITY, ALGAE, FUNGI

1. Students know about the biodiversity and classification of different forms of Algae and Fungi in environment.
2. Students will understand advantages and disadvantages of microbes.
3. Students will clearly understand the differences between autotrophs and hetertrophs.
4. The Students will gain the knowledge about eco-friendly microbes, pathogens and their control measures.
5. Students will understand life history, classification, organization and multiplication of various organisms.
6. Students will know the economic importance of some algae and fungi.

SEMESTER -II

PAPER—II, GYMNOSPERM, TAXONOMY OF ANGIOSPERM AND ECOLOGY

OUTCOMES:

1 Students will understand the Ptridophyta and gymnosperms.

2 After completion of course students have knowledge about of gymnosperms, geological periods of fossils formation types etc.

3 Students will know about the floral distribution, nomenclature and classification according to ICBN rules.

4 Students will learn about the morphology, vegetative and floral characters in terms of technical distribution.

5 Students will able to identify plant species with scientific names.

6 Students gain knowledge about the different ecosystem.

7 Students will be able to understand the ecological deviation in different environment.

SEMESTER –III

PAPER-III, PLANT ANATOMY AND EMBRYOLOGY

OUTCOMES:

1. Students will be able to understand the internal structure of leaves, stems roots and also various tissues and tissue systems.
2. They gain more practical knowledge by observing primary and anomalous secondary growth with the help of section cutting.

3. Students will learn about the male and female gamets, its development, process of pollination and fertilization in angiosperm.
4. Student will able to know about the development of embryos and endosperms in angiosperm.

SEMESTER –IV

PAPER –IV, CELL BIOLOGY, GENETICS AND PLANT PHYSIOLOGY

OUTCOMES:

1 Students gain knowledge about various cell organelles of plant body and their biological

activities such as photosynthesis, respiration and transpiration.

2 Students will gain the knowledge on history of origin and formation of macromolecules.

3 Students can able to understand inheritance of genes from one generation to another generation.

4 Students gain knowledge about on gene and allelic interaction.

5 The course deals with various metabolic activities in plants related to environment.

6 Knowledge of mineral nutrition in plants improvements.

7 Plant disease can be identified and control measures can be adopted in scientific methods.

SEMESTER-V

PAPER-V, BIODIVERSITY AND CONSERVATION

OUTCOMES:

Semester - V

Paper - V - Biodiversity and Conservation

Outcomes ; -

1 Learn and approaches to the study of ecology (Autecology, Synecology and Genecology).

2 Understand the population and community ecology.

3 Students gain the knowledge about role of plants in relation to human welfare.

4 They understand about biodiversity.

SEMESTER –VI

PAPER –VI, TISSUE CULTURE AND BIOTECHNOLOY

OUTCOMES;

1 After completion of course students gain knowledge of cells, tissues and organ cultures.

2 To get the knowledge of preparation of medium.

3 Understand sterilization method.

4 Handling of tissue culture instruments like incubators, hot air oven, laminar air flow etc.

5 Students acquire the basic knowledge of basic concept of tissue culture techniques.

6 Understand the recombinant DNA technology and methods of seed transfer.

COURSE OUTCOME OF POLITICAL SCIENCE

SEM-I B.A I Year - POLITICAL SCIENCE; POLITICAL THEORY (Concepts, Theories, Institutions)

- To understand the nature and scope of political theory.
- To understand the significance of political theory.
- To acquaint with the theories, approaches, concepts and principles of political theory.
- To appreciate the procedure of different theoretical ideas in political theory.
- To Interpret and assess information regarding a variety of political theory.
- To understand the various traditional and modern theories of political science. To evaluate the theories of origin of the state.
- To comprehend the sources of political information's

SEM-II B.A I Year - POLITICAL THEORY. (Concepts, Theories and Institutions)

- To understand the concept of state, nation and civil society.
- To understand the elements and factors of state and nation.
- To know about the meaning sovereignty, types and characteristics.
- To analyse critically the theories of monism and pluralism.
- To learn the origin of the concepts such as Law, power, authority, and legitimacy. To understand the forms of government in various countries and their working pattern To compare with procedure of various social institutions and government institutions. To analyze the meaning of organs of government and theory of separation of power.

SEM-III B.A II Year - INDIAN GOVERNMENT AND POLITICS (Government and Politics)

- To understand the philosophy of Indian constitutions.
- To identify the causes, impact of British colonial rule.
- To appreciate the various phases of Indian national movement.
- To create value in young youth regarding the patriotism.
- To understand the various Government of Indian acts their provision and reforms. To know the salient features in making of Indian constitution
- To appreciate the socio-economic political factors which lead to the freedom struggle.
- To understand the constitutional orderings and institutional arrangement.
- To appreciate the fundamental rights and duties and the directive principle of state policy
- To evaluate the evolution, functioning and consequences of political parties in India.
- To identify how electoral rules and procedure in India effect election outcomes.

B.A.III - POLITICAL THEORY. (ANCIENT & MEDIEVAL POLITICAL THOUGH).

- To demonstrate knowledge of key thinkers and concepts
- To understand the nature, methods and significance of political thought.
- To analyse the theory of ancient & medieval political thought of Greek and India.
- To appreciate the ideas of them in context of classification of government, law and revolutions and slavery.
- To understand the relationship between religion and politics in early modern western political thought.
- To acquire knowledge about modern political thinkers and theirs view on state craft.
- To compare with the social contractualists thoughts of Hobbes, lock, and Rousseau and their view regarding state, government and general will. To appreciate the concept of liberty, representative government., To analyse the Marxist philosophy in making a better society.
- To thoroughly compare the democratic revolution and creation of civil society.
- To appreciate the various social and political ideas of Indian political thinker
- To inculcate the spirit of ahimsa, satyagraha, through Gandhi ideology
- To criticizes the causes for the theory of caste system in India and their impact.

B.A. III YEAR - PAPER IV- INTERNATIONAL RELATIONS

- To understand the evolution, scope and significance of international relations and the rise of sovereign state system

 To analyze the history of international relational through the causes and phases of colonialism.

 To know the impact of first world war and second world war and its causes and consequences

 To criticizes the various ideologies which lead to the destruction of world.

 To appreciates the post war developments through the emergence of third world. To understand the concept of power, national, regional ,global and peace security To acquaint with the international organizations and their modules nations.

 To understand the international political economy.

 To analyse the international security Arms Race. Arms control and Disarmament.

 To understand the emerging area in international relations.

 To appreciate the foreign policy their determinants features& its relevance.

 To critically analyse the Indian's bilateral relations with major power and neighboring countries.

 To identify various issues and challenges towards international relations

 To learn about issues of diversity and internationalism

MAHABUBNAGAR DEPARTMENT OF COMMERCE ACADAMIC YEAR 2022-23

COURSE OUTCOMES

BASIC COMPUTER SKILLS

1. To impact a basic level understanding of working of a computer and its usage.

2. What is operating system, opening and closing of different windows? Text creation and manipulations, formatting of text.

FINANCIAL ACCOUNTING

1. Acquire conceptual knowledge of accounting and preparation of final accounts of sole trader.

2. Bank reconciliation statement cash book and pass book, revenue expenditure errors, diminishing balance method with problems

BUSINESS ORGANISATION AND MANAGEMENT

1. Acquaint students with basic of commerce and business concepts and functions and form of business organization and management.

2. Levels of management, joint stock Company, factors influencing span of supervision. Decentralization of authority and effective control.

FUNDAMENTALS OF INFORMATION TECHNOLOGY

1. Basic concepts and terminology of information technology and to identify issue related to information security.

2. Inputs and outputs units' primary and secondary storage, application s/w time sharing relating to network.

BUSINESS LAWS

1. To understand basic of contract act, sales of goods act, IPRs provisions applicable for establishment, management and winding up of companies in India.

2. Agreement and contract and its types, cosumer protection act 1986,copy rights infringement, board meeting, insolvency and bankrupted code 2016

PROGRAMMING WITH C&C++

1. Understand the fundamental concepts of programming in c and object oriented programming using c++.2.Variables and data types, looping statement, built function, strings and types of union. Object inheritance polymorphism and structure unions.

DEPARTMENT OF SANSKRIT

Course Outcomes **(CO):**

Upon completion of this course students will have following opportunities and skills.

CO1.Students will be able to know not only ancient literature and their classification but also modern Sanskrit literature.

they will be manage their cognition, emotive apparatus, confusion and conflict of mind.

CO3.They should general introduction of Indian Petrology and definitions and examples of various artharlankara.

CO4.The students would learn about the ancient Indian Educational system and Polity, their nature, concepts through the text of Dharmasastra and Arthasastra.

CO5.The students would know about the historical importance of Indian Epigraphy, Paleography, Chronology and Inscription.

CO6.They will be able to know the importance, propagation across the world of this language.

CO7.Students would know about the Vedic mantras, their application, Vedic grammar, socio-cultural life.

CO8. Grammar is very important part of this language for the making of sentences, to know appropriate meaning of texts, oral communication and perfection.

CO9.Linguisticts should also help them to know the source of this language and the relation between other languages.

CO10.The students will take the knowledge about of Indian philosophy, Philosophers and their thoughts. They could relate the philosophical theory in practical life.

Course Outcomes **(CO):**

After becoming successful completion of all undergraduate general degree students should be able to achieve the following objectives.

CO1.Students will be able to know ancient Indian history of literature and literary criticism.

CO2. Grammar is very important part of this language to make a sentence, to know appropriate meaning of texts, oral communication and perfection. Grammar is the only way to know this language well.

CO3. They will learn about the Indian Philosophy, Religion and Culture in Sanskrit tradition.

CO4.Through Gita they also develop their personality.

CO5.Ayurveda will help them to know the Indian medical tradition.

CO6.They will also know Nation and Nationalism through Sanskrit literature.

CO7.The students will able to learn the yoga, their concept, features etc.