FOUR YEAR UNDER GRADUATE PROGRAM (2024-28)

DEPARTMENT OF MATHEMATICS

COURSE CURRICULUM

Part A: Introduction

Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Semester - I	Session:2024-2025
1	Course Code	MASC-01	
2	Course Title	Elementary Calculus	
3	Course Type	DSC	
4	Pre-requisite(if any)	Knowledge of basic Differential and Integral calculus	
5	Course Learning Outcome (CLO)	**This Course will enable the students to:** ➢ Know about ancient Indian Mathematicians and their contribution ➢ Calculate the limit and examine the continuity and understand the geometrical interpretation of differentiability. Apply various tests to determine convergence. ➢ Understand the consequences of various mean value theorems. ➢ Understand concepts of Curvature and Asymptotes . ➢ Draw curves in Cartesian and polar coordinate systems ➢ Understand the elementary integration of transcendental function and understand applications of reduction formulae.	
6	Credit Value	**4 C**	1Credit = 15 hours- Learning and observation
7	Total Marks	Maximum Marks : 100	Minimum Passing Marks:40

Part B: Content of the Course

Total no of teaching – learning period =60 Periods (60 Hours)

UNIT	Topics	No of Periods
I	**Contributions and Biography of Indian Mathematicians:** Bodhayan, Apasthamb, Katyayan, Mahaveeracharya, Brahmagupta and Bhaskarachaya in special context of Leelavati. **Sequences, Continuity and Differentiability** : Notion of convergence of sequences and series of real numbers, Definition of limit and continuity of a real valued function; Differentiability and its geometrical interpretation. Elementary Differentiation.	15
II	**Expansion of Functions:** Rolle's Theorem, Lagrange's mean value theorem, Cauchy's mean value theorem and their geometrical interpretations, Successive differentiation and Leibnitz theorem, Maclaurin's and Taylor's theorems for expansion of a function.	15
III	**Curvature, Asymptotes , Curve Tracing:** Curvature; Asymptotes of general algebraic curves, Parallel asymptotes, Asymptotes parallel to axes; Symmetry, Concavity and convexity, Points of inflection, Tangents at origin, Multiple points, Position and nature of double points; Tracing of Cartesian, polar and parametric curves.	15

(Dr. S. Dashpute) Dr. Omkar Kolshivantaye Dr. Madhu Shinde

(Dr. P. K. Sahu) Dr. S. Kishan

IV	**Integration:** Elementary integration, Integration of Transcendental function, Reduction formulae, Definite integral.	**15**

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Text Books Recommended-

1. Howard Anton, I. Bivens& Stephan Davis (2016). Calculus (10th edition). Wiley India.
2. Gabriel Klambauer (1986). Aspects of Calculus. Springer-Verlag.
3. Wieslaw Krawcewicz & BindhyachalRai (2003). Calculus with Maple Labs. Narosa.
4. Gorakh Prasad (2016). Differential Calculus (19th edition). Pothishala Pvt. Ltd.

Reference Books Recommended-

5. George B. Thomas Jr., Joel Hass, Christopher Heil& Maurice D. Weir (2018). Thomas' Calculus (14th edition). Pearson Education.
6. Jerrold Marsden, Anthony J. Tromba& Alan Weinstein (2009). Basic Multivariable Calculus, Springer India Pvt. Limited.
7. James Stewart (2012). Multivariable Calculus (7th edition). Brooks/Cole. Cengage.
8. Monty J. Strauss, Gerald L. Bradley & Karl J. Smith (2011). Calculus (3rd edition). Pearson Education. Dorling Kindersley (India) Pvt. Ltd.

E-resources: https://onlinecourses.nptel.ac.in
https://epgp.inflibnet.aci.in
https://swayam.gov.in
https://www.mooc.org

Part D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	**100 Marks**
Continuous Internal Assessment (CIA):	**30 Marks**
End Semester Examination (ESE):	**70 Marks**

Continuous Internal Assessment (CIA) (Conducted by course teacher)	Test /Quiz – 20+20 Marks Assignment/Seminar- 10 Marks	Better marks out of two test/quiz + obtained marks in Assignment shall be considered against 30 marks
End Semester Examination (ESE)	**Two Section**-A&B Section-A: Q1.Objective- 10x1=10 marks Q2. Short answer type question-5x4=20marks Section-B: Descriptive answer type question, 1 out of 2 from each unit- 10x4= 40 Marks	

Name and signature of convener & members of CBOS-

(Dr. S. Dashputre) (Dr. Omkar Nath Shivastava) (Dr. P. K. Sahu) (Dr. S. Khan)

FOUR YEARS UNDERGRADUATE PROGRAM (2024-28)
DEPARTMENT OF PHYSICS
COURSE CURRICULUM

PART – A: INTRODUCTION				
Program: Bachelor in Science (Certificate/ Diploma/ Degree/ Honors)			**Semester: I**	**Session: 2024-25**
1	**Course Code**	**PHSC-01T**		
2	**Course Title**	**Mechanics**		
3	**Course Type**	**Discipline Specific Course**		
4	**Pre-requisite (if any)**	**As per Program**		
5	**Course Learning Outcomes (CLO)**	*After going through the course, the student should be able to:* ➢ *Analyze and apply the laws of motion to various dynamical situations.* ➢ *Explain and demonstrate the principle of conservation of momentum and energy including their application in real-world scenario such as collision and energy transformation.* ➢ *Evaluate and calculate moment of inertia for objects of different shapes and analyze how these properties affect the motion of rotating bodies.* ➢ *Analyze flow of fluids.* ➢ *Describe special relativistic effects and their effects on the mass and energy of a moving object.*		
6	**Credit Value**	**03 Credits**	**1 Credit= 15 Hours for Learning &Observation**	
7	**Total Marks**	**Maximum Marks: 100**	**Minimum Pass Marks: 40**	

PART – B: CONTENT OF THE COURSE

TotalNo.of Teaching–learning Periods (01 Hr. per period) - 45 Periods (45 Hours)

Unit	Topics (Course contents)	No. of Periods
I	**Historical Background:** Contribution of Aryabhatta and Varahmihir to science and society, Brief biography of Vikram Sarabhai with his contribution.**Vectors:** Scalar and vector quantities &fields, Scalar & Vector products of two vectors, Derivatives of a vector, Gradient of scalar field and its physical significance.**Laws of Motion:** Review of Newton's Laws of motion, Dynamics of a system of particles, Concept of Center of Mass, Motion of center of mass, Conservation of linear momentum, Motion of Rocket.**Work and Energy:** Work-Energy theorem for conservative forces, Force as a gradient of Potential Energy, Conservation of energy, Elastic and in-elastic Collisions	12
II	**Rotational Dynamics**: Angular momentum, Torque, Conservation of angular momentum, Moment of Inertia, Theorem of parallel and perpendicular axes(statements only), Calculation of Moment of Inertia of discrete and continuous objects (Rectangular lamina, disc, solid cylinder, solid sphere).**Elasticity:** Stress & Strain, Hooke's law, Elastic constants, Poisson's Ratio,Relationship between various elastic modulii (without derivation), Work done in twisting a cylinder.**Fluid Dynamics**: Flow of fluids, Coefficient of viscosity,Derivation of Poiseulli's formula, Motion of a spherical body falling in a viscous fluid, Stoke's law, Expression for terminal velocity.	12
III	**Gravitation**: Newton's Law of Gravitation, Motion of a particle in a central force field (motion is in a plane, angular momentum is conserved, areal velocity is constant), Kepler's Laws (statements only), Satellite in circular orbit and applications, Geosynchronous orbits. **Oscillations**: Simple harmonic motion, Differential equation of SHM and its solutions, Kinetic and Potential Energy, Total Energy and their time averages, Compound pendulum, Differential equations of damped oscillations and forced oscillations (Conceptual only).	11
IV	**Special Theory of Relativity:** Frame of reference, Galilean Transformations, Inertial and Non-inertial frames, Outcomes of Michelson Morley's Experiment, Postulates of Special Theory of Relativity, Lorentz Transformation, Length contraction, Time dilation, Relativistic transformation of velocity, Relativistic variation of mass, Mass-energy equivalence, Transformation of Energy and Momentum.	10

Keywords:	Aryabhatta, Vectors, Newton's Laws, Angular Momentum, Elasticity, Gravitation, Oscillations, Relativity

SignatureofConvener&Members (CBoS) :

10/6/24

FOUR YEARS UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF PHYSICS
COURSE CURRICULUM

PART – A: INTRODUCTION

Program:Bachelor in Science (Certificate/ Diploma/ Degree/ Honors)		Semester: I	Session: 2024-25
1	Course Code	PHSC- 01P	
2	Course Title	Mechanics	
3	Course Type	Discipline Specific Course	
4	Pre-requisite (if any)	As per Program	
5	Course Learning Outcomes (CLO)	After the completion of the course, Students are expected to understand working mechanism and laws of classical mechanics. The Students will be able to ➢ Assemble required parts/devices and arrange them to perform experiments. ➢ Record/ observe data as required by the experimental objectives. ➢ Analyze recorded data and formulate it to get desired results. ➢ Interpret results and check for attainment of proposed objectives related to laws of mechanics and its applications	
6	Credit Value	01 Credit	1 Credit = 30 HoursLaboratory Work
7	Total Marks	Maximum Marks: 50	Minimum Pass Marks: 20

PART – B: CONTENT OF THE COURSE

TotalNo.of learning-Training/performance Periods-30 Periods (30 Hours)

Sr. No.	Objects (At least 10 of the following or related Experiments)	No. of Period
1	Measurements of length (or diameter) using vernier caliper, screw gauge and travelling microscope.	30
2	To study the random error in observations.	
3	To study the motion of the spring and calculate (a) Spring constant and, (b) g.	
4	To determine the Moment of Inertia of a Flywheel.	
5	To determine g and velocity for a freely falling body using Digital Timing Technique.	
6	To determine Coefficient of Viscosity of water by Capillary Flow Method (Poiseuille's method).	
7	To determine the Young's Modulus of a Wire by Optical Lever Method.	
8	To determine the Modulus of Rigidity of a Wire by Maxwell's needle.	
9	To determine the elastic constants of a wire by Searle's method	
10	To determine the value of g using Bar Pendulum.	
11	To determine the value of g using Kater's Pendulum.	
12	Study of bending of a beam/ cantilever	
13	To determine Moment of Inertia of an irregular body by Inertia Table	
Keywords	Moment of Inertia, Pendulum,VernierCallipers, Screw Gauge, Travelling microscope, Elastic Constant, Searle's Method, Stoke's Method, Cappilary Rise Method, Viscosity, Surface Tension	

SignatureofConvener&Members (CBoS) :

10/6/24

PART – C: LEARNING RESOURCES

Text Books, Reference Books Recommended and Others

Text Books Recommended-

1. Mechanics & Properties of matter, D.C. Tayal & P. Tayal, 2023, Pub. By Authors.
2. Unified Physics I –R.P.Goyal, Shivlal Agrawal Publication
3. Unified Physics I, Navbodh Publication

Reference Books Recommended-

1. Mechanics, Berkeley Physics, vol.1, C.Kittel, W.Knight, et.al. 2007, Tata McGraw-Hill.
2. Physics, Resnick, Halliday and Walker 8/e. 2008, Wiley.
3. Introduction to Special Relativity, R. Resnick, 2005, John Wiley and Sons.

Online Resources (e-books/ learning portals/ other e-resources)

1. All e-books of physics https://www.e-booksdirectory.com/listing.php?category=2
2. Free physics text book in PDF
3. https://www.motionmountain.net/?gclid=CjwKCAjwmq3kBRB_EiwAjkNDp5v8Yy6xK1s0Kma0VR0AWGlichRwFfCC0-vpZK1jrPoEOAnBq8fcqRoCILsQAvD_BwE
4. Cambridge University Books for Physics https://www.cambridgeindia.org/
5. Books for solving physics problems https://bookboon.com/en/physics-ebooks
6. NPTEL Online courses https://nptel.ac.in/courses/115105098; https://archive.nptel.ac.in/courses/115/106/115106123/;
7. BSc Lectures by Prof. H C Verma: https://bsc.hcverma.in/index.php/course/relativity; https://bsc.hcverma.in/index.php/course/cm1

PART – D: ASSESSMENT AND EVALUATION

Suggested Continuous Evaluation Methods:
Maximum Marks: 100Marks
Continuous Internal Assessment (CIA):30 Marks
End Semester Examination (ESE): 70 Marks

Continuous Internal Assessment (CIA): (By course teacher)	Internal Test/ Quiz (2): **20~~+~~20** Assignment/ Seminar (1):**10** Total Marks: **30**	Better marks out of the two Test / Quiz **+** marks obtained in Assignment shall be considered against **30 Marks**
End Semester Exam (ESE):	**Two section – A & B** Section A: **Q1**. Objective – **10 x1= 10** Mark; **Q2**. Short answer type- **5x4 =20Marks** Section B: Descriptive answer type,**1out of 2** from each unit-**4x10=40 Marks**	

Name and Signature of Convener & Members of CBoS:

PART – C: Learning Resources

Text Books, Reference Books and others

Text Books Recommended-

1. Advanced Practical Physics for students, B.L.Flint&H.T.Worsnop, 1971, Asia Publishing House.
2. Engineering Practical Physics, S.Panigrahi& B.Mallick,2015, Cengage Learning India Pvt. Ltd.
3. A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
4. Practical Physics B.Sc. I : R P Goyal, Shivlal Publications

Reference Books Recommended-

1. Advanced Practical Physics for Students by B.L. Worsnop and H.T. Flint
2. Practical Physics by G.L. Squires
3. An Introduction to Error Analysis: The Study of Uncertainties in Physical Measurements by John R. Taylor
4. Mechanics and Properties of Matter by J.C. Upadhyaya

Online Resources (e-books/ learning portals/ other e-resources)

1. Link for e-Books for Physics:Physics Practical:
   https://www.uou.ac.in/sites//default/files/slm/BSCPH-104.pdf
2. Virtual Lab :https://vlab.amrita.edu/?sub=1&brch=74
3. https://vlab.amrita.edu/?sub=1&brch=74&sim=571&cnt=1
4. https://www.ae.msstate.edu/vlsm/

PART – D : ASSESSMENT AND EVALUATION

Suggested Continuous Evaluation Methods:
Maximum Marks: 50 Marks
Continuous Internal Assessment(CIA):15 Marks
EndSemester Exam(ESE):35 Marks

Continuous InternalAssessment(CIA): (By Course Teacher)	Internal Test / Quiz - (2): **10 & 10** Assignment/Seminar +Attendance –**05** Total Marks - **15**	Better marks out of the two Test/Quiz **+Marks** obtained in Assignment shall be considered against **15** Marks

End Semester Exam (ESE):	**Laboratory Performance: On spot Assessment** **Performed the Task based on lab. work -20 Marks** **Spotting based on tools & technology (written) – 10 Marks** **Viva-voce (based on principle/technology) - 05 Marks**	**Managed by Course teacher as per lab. status**

Name and Signature of Convener & Members of CBoS:

10/6/24

FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF CHEMISTRY
COURSE CURRICULUM

PART- A: Introduction				
Program: Bachelor in Science *(Certificate / Diploma / Degree/Honors)*			**Semester - I**	Session: 2024-2025
1	**Course Code**	**CHSC-01T**		
2	**Course Title**	**FUNDAMENTAL CHEMISTRY-I**		
3	**Course Type**	**DSC**		
4	**Pre-requisite** (if, any)	***As per Program***		
5	**Course Learning. Outcomes (CLO)**	➢ *To know the contributions of ancient Indian scientists, study atomic structure, and periodic properties.* ➢ *To explore the concept of chemical bonding, including ionic and covalent bonding, hybridization, molecular orbital theory and intermolecular interactions.* ➢ *To learn about reaction mechanisms of inorganic reactions and their stoichiometry.* ➢ *To understand basics principles of organic chemistry.*		
6	**Credit Value**	**3 Credits**	***Credit = 15 Hours - learning & Observation***	
7	**Total Marks**	**Max. Marks: 100**		**Min Passing Marks: 40**

PART -B: Content of the Course

Total No. of Teaching–learning Periods (01 Hr. per period) - 45 Periods (45 Hours)

Unit	Topics (Course contents)	No. of Period
I	**A. Chemistry in Ancient India:** (a) Chemical techniques in ancient India: General Introduction (b) Contribution of ancient Indian scientists in chemistry, e.g., metallurgy, dyes, pigments, cosmetics, Ayurveda, Charak Sanhita. **Ancient Indian Chemist-** Their Contribution and Books- Rishi Kanad, Aacharya Nagarjuna, Vagbhatta, Govindacharya, Yashodhar, Ramchandra, Somadava, Gopalbhatta etc. Indian Chemist of 19th century- Aacharya Prafulla Chandra Ray- His Contribution and work for Indian Chemistry. **B. Atomic Structure and Periodic Properties:** (i) Review of Bohr's theory and its limitations. Dual nature of particles and waves, de Broglie's equation, Heisenberg's Uncertainty principle and its significance. (ii) Quantum numbers and their significance. Rules for filling electrons in various orbitals, Pauli's Exclusion Principle, Hund's rule of maximum multiplicity, Aufbau principle and its limitations, Electronic configurations of the atoms. Stability of half-filled and completely filled orbitals, concept of exchange energy. Relative energies of atomic orbitals. Anomalous electronic configurations. (iii)Effective nuclear charge (ENC), shielding or screening effect, Slater rules, Atomic and Ionic radii. Ionization energy and factors affecting ionization energy. Electron affinity, Electronegativity—Pauling's/Mulliken's electronegativity scales. Relation of electronegativity with hybridization.	11
II	**Chemical Bonding – I A) Ionic Bonding:** General characteristics of ionic bonding. **Ionic Bonding & Energy:** Lattice and solvation energies and their importance in the context of stability and solubility of ionic compounds. **Born-Haber Cycle and its Applications:** Covalent character in ionic compounds, polarizing power and polarizability. Fajan's rules. **B) Covalent Bonding:** Lewis structures, Valence Bond theory, Hybridization (concept and types with suitable examples), dipole moment and percentage ionic character. Valence shell electron pair repulsion theory (VSEPR) and structure of NH_3, H_2O, SF_4, ClF_3, PCl_5, SF_6, XeF_2, XeF_6, XeO_3, $XeOF_4$, XeF_4.	12

	Chemical Bonding - II **A) MO theory:** LCAO method-criteria of orbital overlapping, types of molecular orbitals-σ-, π- and, δ-MOs; formation of σ- and π-MOs and their, schematic illustration; qualitative MO energy level diagram of homo- (N_2 & O_2(including peroxide, superoxide)) and hetero-diatomic molecules (NO, CO), magnetic properties, bond order and stability of molecules and ions. **B)** Weak Chemical Forces: van der Waals forces, ion-dipole forces, dipole-dipole interactions, ion-induced dipole interactions, dipole-induced dipole interactions. Repulsive forces, Hydrogen bonding (theories of hydrogen bonding, valence bond treatment).	
III	**A. Chemical properties of s-block metals** Reaction with water, air, and nitrogen, Anomalous behavior of Li and Be, Compounds of s-block metals: Oxides, hydroxides, peroxides, and superoxides (preparation and properties) Complexes of s-block metals, Complexes with crown ethers **B. Chemistry of p-Block Elements** **Boron group:** Hydrides (classification of boranes), Diborane (preparation, properties, and structure elucidation), Borazine (preparation and structure) **Carbon group:** Carbides (salt-like carbides, interstitial carbides, covalent carbides), Silicates (classification, three-dimensional silicates - properties and structures) **Nitrogen group:** Hydrides of Nitrogen (hydrazine, hydroxylamine, hydrazoic acid) Structure of oxides of nitrogen (N_2O, NO, NO_2, N_2O_4, and N_2O_5), Structure of oxyacids of nitrogen (HNO_2, HNO_3, $H_2N_2O_7$,), Nitrides (classification, preparation, properties, and uses) Structure of Oxides and oxoacids of phosphorus: (P_2O_3, P_2O_5) H_3PO_2, H_3PO_3, H_3PO_4, $H_4P_2O_7$ **Halogen:** Hydrides, Oxides and oxyacids of halogens (structure only) – Inter halogen compounds and pseudo halogens	**11**
IV	**Electronic Effects in Organic Compounds** Bond Cleavage: Homolytic and heterolytic cleavages, bond energy, bond length, and bond angle. Electron Displacement Effects: Inductive, inductomeric, electromeric, mesomeric (resonance), hyperconjugation, and steric effects. Tautomerism (keto-enol, amido-imidol, and nitro-acinitro forms). Reaction Intermediates: Formation and stability of carbocations, carbanions, free radicals, carbenes, nitrene and benzyne. **B. Stereochemistry of Organic Compounds** **i) Optical Isomerism** Elements of symmetry, chirality, enantiomers, and optical activity, Chiral and achiral molecules with two stereogenic centers (Tartaric acid as an example),Erythro & Threo, Diastereomers and meso compounds, Inversion, retention, and racemization, Relative configuration (D/L), and absolute configuration (R/S nomenclature: sequence rules). **ii) Geometrical Isomerism** Geometric isomerism (cis-trans isomerism) in alkenes with examples (maleic acid, fumaric acid, and 2-butene), E/Z system of nomenclature.	**11**
Keywords	***Ancient Indian Chemistry, Atomic Structure, Periodic Properties, Chemical Bonding, s- &p-block elements, Electronic effects, Stereochemistry***	

Signature of Convener & Members (CBoS) :

PART–C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended –
Text Books

1. Puri, B. R., Sharma, L. R., & Kalia, K. C. (2018). *Principles of Inorganic Chemistry*. Nagin Chand and Co., New Delhi.
2. Satyaprakash, G., Tuli, S. K., Basu, S. K., & Madan, R. D. (2017). *Advanced Inorganic Chemistry* (Vol. 1, 5th Ed.). S. Chand & Company.
3. Lee, J. D. (2010). *Concise Inorganic Chemistry* (5th Ed.). Blackwell Science.
4. Housecroft, C. E., & Sharpe, A. G. (2012). *Inorganic Chemistry* (4th Ed.). Pearson Education Limited.
5. Ray, Acharya Prafulla Charndra, ***History of Chemistry in Ancient And Medieval India***, Chowkhamba Krishnadas Academy (Reprint 2004).

Reference Books

1. Cotton, F. A., Wilkinson, G., & Gaus, P. L. (2002). *Basic Inorganic Chemistry* (3rd Ed.). John Wiley & Sons.
2. Douglas, B. E., Mcdaniel, D. T., & Alexander, J. J. (1994). *Concepts and Models Of Inorganic Chemistry* (3rd Ed.). John Wiley & Sons.
3. Huheey, J. E., Keiter, E. A., & Keiter, R. L. (1993). *Inorganic Chemistry* (4th Ed.). Harpercollins College Publishers.
4. Shriver, D. F., Atkins, P. W., & Langford, C. H. (2010). *Inorganic Chemistry* (5th Ed.). W. H. Freeman And Company.
5. Moeller, T. (1990). *Inorganic Chemistry: A Modern Introduction*. Wiley.

Online Resources–

- https://bit.ly/3AyV3mZ
- https://nptel.ac.in/courses/104/104/104104101/
- https://nptel.ac.in/courses/104/103/104103019/
- https://nptel.ac.in/courses/104/101/104101090/
- https://nptel.ac.in/courses/104/105/104105103/

Online Resources–

- **e-Resources / e-books and e-learning portals**

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	**100 Marks**
Continuous Internal Assessment (CIA):	**30 Marks**
End Semester Exam (ESE):	**70 Marks**

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): **20** Assignment / Seminar - **10** Total Marks - **30**	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against **30** Marks
End Semester Exam (ESE):	**Two section – A & B** Section A: **Q1**. Objective – **10 x1= 10** Mark; **Q2**. Short answer type- **5x4 =20 Marks** Section B: Descriptive answer type qts.,**1out of 2** from each unit-**4x10=40 Marks**	

Name and Signature of Convener & Members of CBoS:

FOUR YEAR UNDERGRADUATE PROGRAM (2024 – 28)
DEPARTMENT OF CHEMISTRY
COURSE CURRICULUM

PART- A: Introduction				
Program: Bachelor in Science *(Certificate / Diploma / Degree/Honors)*			**Semester-I**	Session: **2024-2025**
1	**Course Code**	**CHSC-01P**		
2	**Course Title**	**CHEMISTRY LAB. COURSE-I**		
3	**Course Type**	**DSC**		
4	**Pre-requisite** (if, any)	***As per Program***		
5	**Course Learning. Outcomes (CLO)**	➢ *Analyze mixtures for cations (NH_4^+, Pb^{2+}, etc.) & anions (CO_3^{2-}, S^{2-}, etc.) using H_2S or other methods.* ➢ *Perform titrimetric analysis (standardization, unknown conc. determination).* ➢ *Estimate the concentration of acetic acid in vinegar (using NaOH), alkali content in antacids (using HCl), and free alkali in soaps/detergents.* ➢ *Utilize complexometric titrations for calcium (Ca^{2+}), water hardness, Fe^{2+}/Fe^{3+}, and Cu^{2+}.*		
6	**Credit Value**	**1 Credits**	*Credit =30 Hours Laboratory or Field learning/Training*	
7	**Total Marks**	**Max. Marks: 50**		**Min Passing Marks: 20**

PART -B: Content of the Course		
Total No. of learning-Training/performance Periods: 30 Periods (30 Hours)		
Module	**Topics (Course contents)**	**No. of Period**
Lab./Field Training/ Experiment Contents of Course	**QUALITATIVE INORGANIC MIXTURE ANALYSIS:** Inorganic mixture analysis containing up to four ionic species (two cations and two anions) using H_2S (hydrogen sulfide) or other appropriate methods (Excluded are interfering and insoluble salts) Cations and anions that may be encountered include: **Cations:** NH_4^+, Pb^{2+}, Bi^{3+}, Cu^{2+}, Cd^{2+}, Fe^{2+}/Fe^{3+}, Al^{3+}, Co^{2+}, Ni^{2+}, Mn^{2+}, Zn^{2+}, Ba^{2+}, Sr^{2+}, Ca^{2+}, Na^+ **Anions:** CO_3^{2-}, S^{2-}, SO_4^{2-}, NO_3^-, CH_3COO^-, Cl^-, Br^-, I^-, NO_2^-, SO_3^{2-} (Spot tests may be used wherever feasible.) **TITRIMETRIC ANALYSIS** Standardize sodium hydroxide solution using a standard oxalic acid solution. Determine the concentration of hydrochloric acid (HCl) solution using standardized sodium hydroxide solution as an intermediate.	**30**
Keywords	*Qualitative Analysis (H_2S method, Cations (NH_4^+, Pb^{2+}, etc.), Anions (CO_3^{2-}, S^{2-}, etc.), Titrimetric Analysis, Standardization (NaOH solution), Concentration Determination (HCl solution)*	

Signature of Convener & Members (CBoS) :

Indira

PART–C: Learning Resources

Text Books, Reference Books and Others

Textbooks Recommended:

1. Gurtu, J. N., & Kapoor, R. (1987). *Experimental Chemistry*. S. Chand & Co.
2. Bajpai, D. N., Pandey, O. P., & Giri, S. (2013). *Practical Chemistry*. S. Chand & Co.
3. Ahluwalia, V. K., Dhingra, S., & Dhingram, S. (2005). *College Practical Chemistry*. Universities Press.
4. Kamboj, P. C. (2014). *Advanced University Practical Chemistry* (Part I). Vishal Publishing Co.
5. Fultariya, C., & Harsora, J. (2017). *Volumetric Analysis: Concepts and Experiments*.

Reference Books Recommended:

1. Mcpherson, P. A. (2015). *Practical Volumetric Analysis*. Royal Society Of Chemistry.
2. Shobha, R., & Banani, M. (2017). *Essentials of Analytical Chemistry*. Pearson.
3. Venkateswaran, V., Veeraswamy, R., & Kulandaivelu, A. R. (2004). *Basic Principles Of Practical Chemistry* (2nd Ed.). S. Chand Publications.
4. Sundaram, S., & Raghavan, K. (1996). *Practical Chemistry*. S. Viswanathan Co. Pvt.
5. Svehla, G. (2011). *Vogel's Textbook of Inorganic Qualitative Analysis* (7th Ed.). Pearson Education

Online Resources–

- https://bit.ly/3B7tOQV
- https://bit.ly/30V85ze
- https://bit.ly/3B5WOIQ
- https://bit.ly/3C9PXPS
- https://bit.ly/30Ip9rZ
- https://bit.ly/3BPnwqc

Online Resources–

- **e-Resources / e-books and e-learning portals**

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	**50 Marks**
Continuous Internal Assessment (CIA):	**15 Marks**
End Semester Exam (ESE):	**35 Marks**

Continuous Internal Assessment (CIA): **(By Course Teacher)**	Internal Test / Quiz-(2): **10 & 10** Assignment/Seminar +Attendance - **05** Total Marks - **15**	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against **15** Marks
End Semester Exam (ESE):	**Laboratory / Field Skill Performance: On spot Assessment** **A. Performed the Task based on lab. work - 20 Marks** **B. Spotting based on tools & technology (written) – 10 Marks** **C. Viva-voce (based on principle/technology) - 05 Marks**	**Managed by Course teacher as per lab. status**

Name and Signature of Convener & Members of CBoS:

FOUR YEAR UNDERGRADUATE PROGRAM
DEPARTMENT OF ECONOMICS
COURSE CURRICULUM – 2024-28

PART-A, INTRODUCTION			
PROGRAM: Bachelor in Art (Certificate/Diploma/Degree)		**Sem -I**	**SESSION:2024-2025**
SUBJECT: **ECONOMICS**			
1	COURSE CODE:	ECGE -01	
2	COURSE TITLE:	**BASICS OF ECONOMICS**	
3	COURSE TYPE:	DSC	
4	Pre-requisite	As per program	
5	COURSE LEARNING OUTCOME (CLO):	• This course gives a general idea about the basics of economics. • It tries to bridge the gap between higher secondary syllabus and higher education. • This paper creates eagerness and enthusiasm among students to know more about economics. • It also envisages the basic knowledge of micro and macroeconomics and tries to create an interest.	
6	CREDIT VALUE:	4 Credits	Credit= 15 Hours-Learning and observation
7	TOTAL MARKS:	Max Marks:100	Min Passing Marks:40

PART-B, CONTENT OF THE COURSE		
Total No. of Teaching-Learning Periods (01Hr per period) -60 Periods (60 Hours)		
UNIT	**TOPICS (Course Contents)**	**No of Periods**
UNIT I- What is Economics	1. Origin of economics in Indian culture 2. Definition, Nature and Scope of Economics. 3. Major fields- Micro and Macro 4. Classical, Neo-classical and Modern Economists. 5. Major contribution by various economists (in brief) – Adam Smith, J M Keynes, Marshal, Pigou.	15
UNIT II- Basics of Macro Economics	1. Circular Flow of Income 2. Measurement of National Income 3. Basics of GDP, GNP, NNP 4. Money and its functions 5. Demand and supply of money 6. Concept of consumption and saving	15
UNIT III- Basics of Micro Economics	1. Meaning of consumer behavior 2. Concept of utility 3. Demand and elasticity 4. Basics of Production function 5. Various markets in the economy (In brief) .	15

UNIT IV- Economy of Chhattisgarh	1. Agriculture in Chhattisgarh- Agricultural Production, Land use, Irrigation facilities. 2. Industries in Chhattisgarh – Major Industries, Mineral based industries in Chhattisgarh 3. Infrastructure in Chhattisgarh, Road and Railways. 4. Per Capita income and Gross State domestic Product in C.G.	15

Signature of Convener & Members CBoS:-

PART-C, LEARNING RESOURCES

AUTHOR	TITLE	PUBLISHER
सिन्हा, वी.सी., पुष्पा सिन्हा	व्यष्टि अर्थशास्त्र	SBPD
पंत जे॰सी॰ एवं मिश्रा	सूक्ष्म अर्थशास्त्र	साहित्य भवन
जैन, के. पी.	आधुनिक माइक्रो अर्थशास्त्र	रतन प्रकाशन मंदिर
Jhingan, M.L.	Micro Economic Theories (Hindi & English)	Vrinda Publications
Ahuja, H.L.	Principles of Micro Economics (Hindi & English)	S Chand & Co
Seth, M.L.	Micro Economics (Hindi & English)	L.N Agrawal
Dhingra, I. C., V. K. Garg	Principles of Micro Economics (Reference)	Sultan Chand & Sons
Bose, D., A. Marimuthu	An Introduction to Micro Economics (Reference)	Himalaya Publishing House

Online Resources

1	https://www.swayamprabha.gov.in/index.php
2	https://vidyamitra.inflibnet.ac.in/index.php
3	https://epgp.inflibnet.ac.in/Home/ViewSubject
4	https://descg.gov.in/

PART-D ASSESSMENT & EVALUATION

Suggested Continuous Evaluation Methods:

Maximum Marks :100 Marks
Continuous Internal Assessment (CIA) : 30 Marks,
End Semester Exams (ESE) :70 marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Tests/Quiz–(2) : 20 & 20 Assignment/Seminar/Attendance - 10 Total Marks - 30	Better marks out of the two Test /Quiz +Obtained marks in Assignment shall be considered against 30 Marks

FOUR YEAR UNDERGRADUATE PROGRAM - (2024-28)
DEPARTMENT OF HINDI
COURSE CURRICULUM

PART -A : Introduction				
Program: Bachelor in Arts Certificate/Diploma/Degree/Honors		Semester - I		Session: 2024-25
1	Course Code	HNGE-01		
2	Course Title	हिन्दी साहित्य का इतिहास (आदिकाल से रीतिकाल तक)		
3	Course Type	GE		
4	Pre-requisite (if any)	As per requirement		
5	Course Learning Outcome (CLO)	1. विद्यार्थी साहित्येतिहास, काल विभाजन एवं नामकरण संबंधी ज्ञान से अवगत हो सकेंगे। 2. युगीन परिस्थितियों और साहित्यिक प्रवृत्तियों के आधार पर साहित्य और समाज के अन्तर्संबंधो को समझ पाने में सक्षम हो सकेंगे। 3. युगीन सामाजिक सांस्कृतिक परिस्थितियों के परिपेक्ष्य में व्यापक दृष्टिकोण की समझ का विकास हो सकेगा। 4. आदिकाल से रीतिकाल तक के सम्पूर्ण रचनाकारों की रचनाओं और उसके विविध विषयों पर विश्लेषणात्मक विचारशीलता का विकास हो सकेगा। 5. हिन्दी गद्य के आविर्भाव के प्रधान कारणों एवं परिस्थितियों को समझ सकेंगे।		
6	Credit Value	4 Credits	(01 Credit = 15 Hours - learning & Observation)	
7	Total Marks	Maximum Marks : 100	Minimum Passing Marks : 40	

PART -B : Content of the Course		
Total No. of Teaching-Learning Periods (01 Hr. Per Period) - 60 Periods (60 Hours)		
Unit	Topics (Course Contents)	No. of Period
I	**हिन्दी साहित्य का इतिहास व काल विभाजन –** अ. हिन्दी साहित्य के इतिहास लेखन की परम्परा, समस्या ब. हिन्दी साहित्य के इतिहास का कालविभाजन व नामकरण	15
II	**आदिकाल –** अ. आदिकाल : सामान्य परिचय प्रमुख प्रवृत्तियां व कवि, सिद्ध साहित्य, नाथ साहित्य ब. रासो काव्य, लौकिक साहित्य, जैन साहित्य	15
III	**भक्तिकाल –** अ. भक्तिकाल : सामान्य परिचय, प्रमुख प्रवृत्तियां व कवि । निर्गुण भक्तिधारा (प्रेममार्गी, ज्ञानमार्गी) ब. सगुण भक्तिधारा (रामकाव्य, कृष्णकाव्य)	15
IV	**रीतिकाल –** अ. रीतिकाल : सामान्य परिचय, प्रमुख प्रवृत्तियां व कवि ब. रीतिबद्ध, रीतिसिद्ध एवं रीतिमुक्त काव्यधारा	15
Keywords		

Signature of Convener & members (CBos) :

Date

11-06-24

11/6/2024

11/6/24

PART -C : Learning Resource
Text Books, Reference Books and Others
1. हिन्दी साहित्य का इतिहास – आचार्य रामचन्द्र शुक्ल, लोक भारती प्रकाशन, इलाहाबाद 2. हिन्दी साहित्य का इतिहास – डॉ. नगेन्द्र, राजकमल प्रकाशन, नई दिल्ली 3. हिन्दी साहित्य का आदिकाल – आचार्य हजारीप्रसाद द्विवेदी, राजकमल प्रकाशन, नई दिल्ली 4. हिन्दी साहित्य उदभव और विकास – आचार्य हजारीप्रसाद द्विवेदी, राजकमल प्रकाशन, नई दिल्ली 5. हिन्दी साहित्य युग और प्रवित्तियॉ – डॉ. शिवकुमार शर्मा 6. हिन्दी साहित्य का विवेचनात्मक इतिहास – डॉ. सरयूकांत शास्त्री 7. हिन्दी साहित्य की भूमिका – हजारी प्रसाद द्विवेदी 8. हिन्दी साहित्य का आलोचनात्मक इतिहास – राम कुमार वर्मा, लोक भारती प्रकाशन प्रयागराज 9. हिन्दी भाषा साहित्य का इतिहास तथा काव्यांग विवेचन – डॉ. आर.के.पाण्डेय, शताक्षी प्रकाशन रायपुर
Online Resources -
1. epgpathshala 2. https://www.hindwi.org

PART -D : Assessment And Evaluation		
Suggested Continuous Evaluation Methods : Maximum Marks : 100 Marks Continuous Internal Assessment (CIA) : 30 Marks End Semester Exam (ESE) : 70 Marks		
Coninuous Internal Assessment : (CIA) : (By Course Teacher)	Internal Test/Quiz-(2) : 20 & 20 Marks Assignment/Seminar - 10 Total Marks 30	Better marks out of the two Text/Quiz obtained marks in assignment shall be considered against 30 Marks
End Semester Exam (ESE) :	Two Section - A&B Section A : Q1 Objective - 10X1=10 Marks Section A : Q2 Short Answer Type - 5X4=20 Marks Section B : Descriptive Answer Type Qts. 1 out of 2 From Each Unit - 4X10=40 Marks Total =70 Marks	

Name and Signature of Convener & Members of CBoS:

11-06-24

11/6/2024

11/6/24

FOUR YEAR UNDERGRADUATE PROGRAM (2024 - 28)
DEPARTMENT OF ENGLISH
COURSE CURRICULUM

PART- A: Introduction				
Program: Bachelor in Arts *(Certificate/Diploma/Degree/Honors)*			**Semester - I**	**Session: 2024-2025**
1	**Course Code**	**ENGE-01**		
2	**Course Title**	**Introduction to the study of English Literature**		
3	**Course Type**	**DSC (Discipline Specific Course)**		
4	**Pre-requisite**	***As per Program***		
5	**Course Learning. Outcomes (CLO)**	After completion of this course, the students will be able to: ➢ Have a deep insight into various genres of English Literature and write clearly, coherently and effectively about them. ➢ Recognize the culture and context of the work of literature. ➢ Develop sensitivity to nature and fellow human beings. ➢ Understand the growth of Indian Literature in English. ➢ Apply the knowledge of literary genres in interdisciplinary fields. ➢ Read and analyze the representative texts as categorized under the various genres		
6	**Credit Value**	**4 Credits**	***Credit = 15 Hours - learning & Observation***	
7	**Total Marks**	**Max. Marks: 100**		**Min Passing Marks: 40**

PART -B: Content of the Course

Total No. of Teaching–learning Periods (01 Hr. per period) – 60 Periods (60 Hours)

Unit	Topics (Course contents)	No. of Periods
I	**Section A:** ***Types of Poetry:*** *The Sonnet, The Elegy, The Ode, The Epic, The Ballad,The Lyric, The Dramatic Monologue, Allegory.* **Section B:** ***(Any Two)*** ***1.William Shakespeare:*** *Shall I Compare Thee to a Summer's Day?* ***2.William Wordsworth:*** *The Solitary Reaper* ***3.Rabindranath Tagore:*** *Waiting* ***4.Sarojini Naidu:*** *The Autumn Song* ***5.Toru Dutt:*** *Our Casuarina Tree*	15
II	**Section A:** ***Types of Prose:*** *Autobiography, Biography, Memoir, Travelogue; Periodical Essay; FormalEssay; Personal Essay.* **Section B:** ***(Any Two)*** ***1.Francis Bacon-*** *Of Studies* ***2.Charles Lamb-*** *Dream Children* ***3.Joseph Addison-*** *Sir Roger at the Church* ***4. A.P.J. Kalam-*** *Patriotism Beyond Politics & Religion (from Our Ignited Mind* ***5. Amartya Sen-*** *Tagore & His India (from The Argumentative Indian)*	15
III	**Section A:** ***Types of Drama:*** *Tragedy, Comedy, Tragicomedy, Farce, Melodrama, The Problem Play;Theatre of Absurd* ***Elements of Drama:*** *Plot, Character, Diction, Thought, Music, Spectacle.* **Section-B** ***Drama: (Any Two)*** ***1.William Shakespeare:*** *The Merchant of Venice* ***2.Oliver Goldsmith:*** *She Stoops to Conquer*	15

	3.Kalidas: *Abhigyan Shakuntalam* ***4.Mohan Rakesh-*** *Adhe Adhure (Halfway House)* ***Vijay Tendulkar-*** *Kanyadan*	
IV	**Section A:** ***Types of Novel****: Bildungsroman, Picaresque, Epistolary, Stream-of-Consciousness, Novel of Social Reality, Psychological Novel,Historical Novel, Science Fiction, Gothic Novel and Graphic Novel.* **Section B:** ***Novels (Any Two)*** ***1.Jane Austen:*** *Pride and Prejudice* ***2.Robert Louis Stevenson:*** *Dr. Jekyll and Mr. Hyde* ***3.Mulk Raj Anand:*** *The Untouchable* ***4.R.K. Narayan:*** *The Guide 5. Bheesham Sahni: Amritsar Aa Gaya*	**15**

Signature of Convener & Members (CBoS):

PART–C: Learning Resources

Text Books, Reference Books and Others

Reference Books–

- Daiches, D., "A Critical History of English Literature", Supernova Publishers, 2010.
- Compton- Rickett, A., "A History of English Literature" Nabu Press, 2010.
- Boulton, M., "The Anatomy of Prose", Kalyani, New Delhi, 1982.
- Chambers, E., "The Development of English Prose", Oxford University Press, London, 1957.
- Kalam, A.P.J., "Ignited Minds: Unleashing the power within India" Penguin, 2014.
- W H Hudson, An Introduction to the Study of English Literature, Maple Press, 2003 ed.
- P.Varghese, Introduction to English Literature, Alfa Publications, 2011.
- Martin Gray, A Dictionary of Literary Terms, Blackwell, 1998.

Online Resources–

- https://www.britannica.com/art/English-literature
- https://www.slideshare.net/RahilaKhan6/introduction-to-english-literature-70272809
- https://guides.library.illinois.edu/c.php?g=964117&p=7731764
- https://researchguides.library.tufts.edu/EnglishUndergraduateResources
- ***https://instr.iastate.libguides.com/englitres***

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks:100 Marks
Continuous Internal Assessment (CIA):30 Marks
End Semester Exam (ESE):70 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): **20 & 20** Assignment / Seminar - **10** Total Marks - **30**	Better marks out of the two Test / Quiz + obtained marks in Assignment shall beconsidered against **30** Marks
End Semester Exam (ESE):	**Two section – A & B** Section A: **Q1**. Objective – 10 x1= **10** Mark; **Q2**. Short answer type- **5x4 =20 Marks** Section B: Descriptive answer type qts.,**1out of 2** from each unit-**4x10=40 Marks**	

Name and Signature of Convener & Members of CBoS:

FOUR YEAR UNDERGRADUATE PROGRAM (2024–28)
Department of Commerce and Management
COURSE CURRICULUM

PART-A: Introduction				
Program: Bachelor in Business Administration *(Certificate / Diploma / Degree/Honors)*			**Semester-I**	Session: **2024-2025**
1	**CourseCode**	**BBSC-01**		
2	**CourseTitle**	**Principles of Management**		
	CourseType	**Discipline Specific Course (DSC)**		
4	**Pre-requisite**(if,any)	*Asperrequirement*		
5	**CourseLearning Outcomes(CLO)**	➢ *The students will understand concepts, rules or procedures of Principles ofManagement.* ➢ *Improve their cognitive thinking.* ➢ *The students will learn proficient and effective use of knowledge and abilityin performance..*		
6	**CreditValue**	**4Credits**	*Credit=15Hours-learning&Observation*	
7	**TotalMarks**	**Max.Marks: 100**	**MinPassingMarks: 40**	

PART-B: ContentoftheCourse

TotalNo.of Teaching–learningPeriods(01 Hr.perperiod)– 60Periods(60 Hours)

Unit	Topics(Coursecontents)	No.of Period
I	**Introduction:** Concept, Nature, Process and Significance ofManagement, Role, Function and Responsibility of Management,Management Thought; Classical and Neo-classical system; Concept Approaches. (Learning through experience in Chhattisgarh area.)	15
II	**Planning:** Concept of Planning, Characteristics of Planning, Steps inPlanning Process; Benefits and Limitations of Planning, Types ofPlanning, Objective, Strategies, Policies, Environment analysis and diagnosis; Strategy formulation search for advantages and businesspossibilities in Chhattisgarh.	15
III	**Organizing :** Concept, nature, process and significance; authorityand resident relationship; Centralization and Decentralization;Departmentalization, Organization structure – forms and contingency factors. **Decision making:** Features of Decision making, Role of Decisionmaking in Management, Types of Managerial Decision, Steps inDecision making process, Decision techniques; Principles of Decisionmaking.	15
IV	**Controlling and Budgeting:** Nature of Control, Relationship between Planning and Control, Need for Control; Significance and Limitations of Control, Types of Control, Process of Control; Budgetary Control, Performance Budgeting; Zero Based Budgeting; Management Audit; Networks Techniques.	15
Keywords	*Management, Planning, Organising, Decision Making, Controlling and Budgeting.*	

PART–C: LearningResources

TextBooks,ReferenceBooksand Others

TextBooksRecommended –

1. Drucker Peter F: Management Challenges for the 21 st century; Butterworth Heinemann.
2. Weihrich and Koontz, Essentials of Management; Tata Mc Graw Hill, New Delhi.
3. P.C. Tripathi : Principles of Management Mc Graw Hill Education 6 thedtion.
4. Terry and Frankin; Principles of Management; AITBS, New Delhi.
5. M.Gupta: Principles of Management; Motilal U.K. Books of India New Delhi

Online Resources–
https://www.kopykitab.com/
https://www.hitbullseye.com/grad-

PART-D:AssessmentandEvaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 100Marks
ContinuousInternalAssessment(CIA): 30Marks
EndSemesterExam(ESE): 70 Marks

ContinuousInternal Assessment (CIA): (ByCourseTeacher)	InternalTest/Quiz-(2):**20&20** Assignment/Seminar- **10** TotalMarks- **30**	Bettermarks outofthetwoTest/ Quiz +obtainedmarksinAssignmentshallbe considered against **30** Marks
EndSemester Exam (ESE):	**Twosection– A &B** SectionA:**Q1**.Objective–10x1=**10**Mark;**Q2**.Short answertype-**5x4=20Marks** SectionB:Descriptiveanswertypeqts.,**1outof2**fromeachunit-**4x10=40Marks**	

Name and Signature of Convenor & Members (CBoS):

FOUR YEAR UNDERGRADUATE PROGRAM (2024-28)
DEPARTMENT OF SOCIOLOGY COURSE CURRICULUM

PART-A : INTRODUCTION

PROGRAM: PROGRAM: Bachelor in Arts (Certificate/Diploma/Degree/Honors)	SEMESTER-I	SESSION:2024-25

SUBJECT: **SOCIOLOGY**

1	COURSE CODE:	SOGE -01	
2	COURSE TITLE:	**INTRODUCTION TO SOCIOLOGY**	
3	COURSE TYPE:	DGE 01	
4	Pre-requisite	As per Government norms	
5	COURSE LEARNING OUTCOME (CLO):	**After completion of the course, the student will be able to achieve the following objectives-** • The course is designed to incorporate all the key concept of sociology which would enable the learner to develop keen insight to distinguish between the common sense knowledge and sociological knowledge • The conceptual learning of society association institution community will help the student with their day to day understanding of society • The concept of Indian social institution such as family marriage kinship will enable students to consider their roles in solving many problems. • Concept of globalization and media imperialism will make students to understand global geopolitical scenario conceptually. • Concept of social stratification and social change will make the students better understand the concept of different generational gap and minimize it in due course.	
6	CREDIT VALUE:	04(Credit= 15 Hour- Learning and observation)	
7	TOTAL MARKS:	MAX MARKS:100	MIN PASS MARKS:40

PART-B : CONTENT OF THE COURSE

Total Number of Teaching-Learning Periods(01 hr. Per Period)- 60 Period (60 Hours)

UNIT	TOPICS	No. of Periods
UNIT-I Introduction to Sociology	1. Sociology as a Discipline: Meaning Emergence and Scope 2. Community and Society, Institution and Association 3. Relationship with other social Sciences 4. Concept of Role and Status	15
UNIT-II Social Institution	1. Relationship between Individual and Society 2. Socialization: Process and Importance 3. Family, Marriage and Kinship 4. Mutual Relationship between Culture and Civilization	15
UNIT-III Social Process	1. Interaction, Cooperation, Competition, Conflict 2. Caste and Class: Concept and Critique 3. Social Control: Characteristics and Impact 4. Industrialization and its Impact	15
UNIT-IV Social Stratification and Social Change	1. Social Stratification: Concept 2. Social Stratification: Factors 3. Social Change : Concept 4. Social Change: Types	15

Signature of Convener & Members :

10-6-24

10/6/24

PART-C : LEARNING RESOURCES ,REFERENCE BOOKS& OTHERS

AUTHOR	TITLE	PUBLISHER
TEXTBOOK		
Haralambos and Holborn	Sociology :Themes and Prespective	Collins
Anthony Giddens and Philip W. Sutton	Sociology	Atlantic Publisher and Distributors Private Limited
C.N.Shankar Rao	Sociology: Principles of Sociology with an introduction of social thought	S Chand and Co.
Vidya Bhushan and D.R. Sachdeva	An Introduction to Sociology	Kitab Bhawan Publication
REFERENCE		
Anthony Giddens	Sociology	Oxford University Press
Vineeta Pandey	Indian Society and Culture	Rawat Publucation
Hortun and Hunt	Sociology- The Discipline and its Dimensions	New Central Book Agency

Online Resources	
1	https://www.swayamprabha.gov.in/index.php
2	https://vidyamitra.inflibnet.ac.in/index.php
3	https://epgp.inflibnet.ac.in/Home/ViewSubject
4	https://descg.gov.in/

PART-D : ASSESSMENTANDEVALUATION

SuggestedContinuousEvaluationMethods:
MaximumMarks: **100MarksContinuousInternalAssessment(CIA):** **30Marks**
EndSemesterExam(ESE): **70Marks**

ContinuousInternal Assessment(CIA): (ByCourseTeacher)	InternalTest/Quiz-(2):**20&20** Assignment/Seminar- **10** TotalMarks- **30**	BettermarksoutofthetwoTest/Quiz +obtainedmarksinAssignmentshallbeconsidered against**30**Marks
EndSemesterExam(ESE):	**Twosection–A&B** SectionA:**Q1**.Objective–10x1=**10**Mark;**Q2**.Shortanswertype-**5x4=20Marks** SectionB:Descriptiveanswertypeqts.,**1outof2**fromeachunit-**4x10=40Marks**	

NameandSignatureofConvener&MembersofCBoS

(1) (6)
(2) 10.6.24
(3)
(4) 10.6.24
(5)

FOUR YEAR UNDER GRADUATE PROGRAM(2024-28)

DEPARTMENT OF MATHEMATICS

COURSE CURRICULUM

Part A: Introduction			
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		Class: B.Sc. I/III/V Sem	Session:2024-2025
1	Course Code	**MAVAC-1**	
2	Course Title	**Basic Mathematics and Logic**	
3	Course Type	**Value Addition Course**	
4	Course Learning Outcome (CLO)	**This Course will enable the students-** ➢ To orient them towards life-long learning, to develop power of concentration and to overcome the fear of mathematics from their mind. ➢ To cultivate scientific temper through systematic, critical and lateral thinking. ➢ To enhance their logical, analytical and reasoning skills useful for competitive exams. ➢ To make understand the relevance and need of quantitative methods for making business decisions.	
5	Credit Value	2 Credits	*Credit = 15 Hours - learning & Observation*
6	Total Marks	Max. Marks: 50	Min Passing Marks: 20

PART -B: Content of the Course		
Total No. of Teaching–learning Periods (01 Hr. per period) - 30 Periods (30 Hours)		
Unit	Topics (Course contents)	No. of Period
	Basic Mathematics	
I	Brief history of Vedic Mathematics (In Indian Knowledge Tradition), Sanskrit terminology involved in 16 Sutras and 13 Sub-Sutras and their meaning , Addition , Subtraction , Multiplication & Division using different techniques of Vedic Mathematics , Squaring numbers , Square roots of perfect squares , Cube roots of perfect cubes , Methods of quick verification of answers through Digit Sum Method	**8**
II	Problem based on Numbers, Decimal Fractions, Average, Simple Interest , Percentage ,Clocks	**8**
III	Problems on Profit & Loss , Discount, Ages, Speed, Time & Distance, Train , Ratio & Proportion, Mixture	**8**

(Dr. P. K. Sahu)

IV	**Logical Ability:** Problems on Series Completion , Coding- Decoding , Inserting the Missing Character , Problems on Mirror Image & Water Image Problems on Blood relations , Direction Sense Tests , Cubes & Dice , Logical Deductions based on Universal, Particular, Affermative & Negative Premises.	6

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Text Books Recommended-

1. Dr. R.S. Aggarwal, Quantitative Aptitude, S. Chand and Company Ltd., New Delhi.
2. AbhijitGuha, Quantitative Aptitude, Tata McGraw Hill Publishing Company Limited.,New Delhi.
3. Dr. R.S. Aggarwal , Verbal & Non –Verbal Reasoning , S. Chand and Company Ltd., New Delhi

Reference Books Recommended-

4. Rajesh Kumar Singh , Tricky Mathematics , Success Mantra Publications , Patna
5. Govind Prasad Singh &Rakesh Kumar , Text Book of Quickest Mathematics (For all Competitive Examinations)
6. Vedic Mathematics Made Easy Published by Dhaval Bhatia

PART -D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:

Maximum Marks:	50 Marks
Continuous Internal Assessment (CIA):	15 Marks
End Semester Exam (ESE):	35 Marks

Continuous Internal Assessment (CIA): (By Course Teacher)	Internal Test / Quiz-(2): 10 & 10 Assignment/Seminar +Attendance - 05 Total Marks - 15	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against 15 Marks
End Semester Exam (ESE):	Two section – A & B Section A: Q1. Objective – 05 x1= 05 Mark; Q2. Short answer type- 5x2 =10 Marks Section B: Descriptive answer type qts.,1out of 2 from each unit- 4x05 =20 Marks	

Name and signature of convener & members of CBOS-

Dr. S. Das Mpred

Dr. Omkar Nath Shivastava

Dr. Madhu Shivastava

(Dr. P. K. Sahu)

Dr. S. Khan

Dr. Aradhana Shaw

FOUR YEAR UNDERGRADUATE PROGRAM(2024 – 28)
DEPARTMENT OF ENGLISH
COURSE CURRICULUM

PART-A: Introduction				
Program: Bachelor in Arts / Commerce / Science *(Certificate/Diploma/Degree/Honors)*			**Semester – I/ II/III**	**Session: 2024-2025**
1	**Course Code**	**AEC 02**		
2	**Course Title**	**English Language**		
3	**Course Type**	**AEC (Ability Enhancement Course)**		
4	**Pre-requisite** (if any)	***As per Program***		
5	**Course Learning. Outcomes(CLO)**	**After the completion of this course, the students will be able to –** ➢ Understand and apply the use of Articles and Tenses in day to day life. ➢ Analyze the power of imagination and creativity and critically appreciate the poems. ➢ Identify and develop different types of writing skills. ➢ Appreciate and value the use of idioms and phrases as enriching elements of language expression.		
6	**Credit Value**	**2 Credits**	***Credit = 15 Hours -learning & Observation***	
7	**Total Marks**	**Max.Marks:50**		**Min Passing Marks:20**

PART -B: Content of the Course

Total No. of Teaching–learning Periods(01 Hr. per period) - 30 Periods (30 Hours)

Unit	Topics(Course contents)	No. of Period
I	**Prose:** 1. Darshana Dholakia : Baa – My Mother – A Person, A Woman 2. Anita Desai : A Devoted Son 3. Rabindranath Tagore : The Home Coming	**08**
II	**Poetry :** 1. William Wordsworth: The Solitary Reaper 2. Robert Lee Frost: Stopping by the Woods on a Snowy Evening	**07**
III	**Letter Writing :** 1. Formal Letter 2. Informal Letter **Composition :** 1. Describing a Place or a Person 2. Writing a Biographical Sketch 3. Narrating an Event or Experience	**08**
IV	**Writing Skills :** Word Formation, Idioms and Phrases Coordination and Subordination, One Word Substitutes **Grammar :** 1. Articles 2. Tenses	**07**

Keywords	*Love, admire, alone, devote, solitary, frozen lake, darkest evening.*

Signature of Convener & Members (CBoS):

PART–C: Learning Resources

Text Books, Reference Books and Others

Text Book:

1. Flamingo : A textbook for college students publication : Macmillan Publishers.

Reference Books:

2. Essential English Grammar, 2nd Edition by Raymond Murphy, Cambridge Publication.
3. English Grammar in use 5th Edition by Raymond Murphy, Cambridge Publication
4. Advanced English Grammar by Martine Hewings Cambridge University Press.

Online Resources–

- **e-Resources / e-books and e-learning portals**
  - **i)** **https://englishsummary.com/devoted-son-summary-anita-desai/**
  - **ii)** **https://litmarked.com/the-homecoming-by-rabindranath-tagore-summary/**
  - **iii)** **https://www.litcharts.com/poetry/william-wordsworth/the-solitary-reaper**
  - **iv)** **https://www.sparknotes.com/poetry/frost/section10/**
  - **v)** **https://www.wikihow.com/Write-a-Biographical-Sketch**
  - **vi)** **https://study.com/learn/lesson/composition-writing-rules-format.html**
  - **vii)** **https://www.thelearninglab.com.sg/blog/2021/02/how-to-write-an-impressive-composition/**

PART-D: Assessment and Evaluation

Suggested Continuous Evaluation Methods:
Maximum Marks: 50 Marks
Continuous Internal Assessment(CIA):15 Marks
End Semester Exam (ESE):35Marks

Continuous Internal Assessment(CIA): (By Course Teacher)	Internal Test / Quiz-(2): **10 &10** Assignment/Seminar +Attendance- **05** otal Marks -**15**	Better marks out of the two Test / Quiz + obtained marks in Assignment shall be considered against **15** Marks
End Semester Exam (ESE):	**Two section – A & B** Section A: **Q1**. Objective – 10 x1= **10** Mark; **Q2**. Short answer type- **5x4 =20 Marks** Section B: Descriptive answer type qts.,**1out of 2** from each unit-**4x10=40 Marks**	

Name and Signature of Convener & Members of CBoS: