FOUR YEAR UNDER GRADUATE PROGRAM(2024-28)

DEPARTMENT OF MATHEMATICS

COURSE CURRICULUM

Part A: Introduction			
Program: Bachelor in Science (Certificate/Diploma/Degree/Honors)		**Semester - II**	**Session:2024-2025**
1	Course Code	**MASC-02**	
2	Course Title	**Algebra**	
3	Course Type	**Discipline Specific Course (DSC)**	
4	Pre requisite	Knowledge of basic algebra , determinants and matrices.	
5	Course Learning Outcome (CLO)	**This Course will enable the students to:** ➢ Learn about the Matrix algebra. ➢ Understand Set theory, Function and Relation ➢ Learn about the theory of equations. ➢ Learn about the fundamental concepts of groups, Subgroups. ➢ Understand cosets and normal subgroups	
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	**Matrix Algebra :** Introduction, elementary operations of matrices, Inverse of a matrix. Special types of matrices: Transpose of a matrix, Symmetric and Skew symmetric matrices, Hermitian and Skew Hermitian matrix, Rank of a matrix, Echelon form of a matrix, Normal form, Application of matrices to a system of linear (both homogeneous and non-homogeneous) equations , Theorems on consistency of a system of linear equations.Eigen values and Eigen vectors, relation between Eigen values and Eigen vectors. Process of finding Eigen values and Eigen vectors, Cayley Hamilton theorem, and its use in finding inverse of a matrix.	**15**
II	**Sets Theory & Functions:**Sets, subsets Set operations and the laws of set theory and Venn diagrams. Examples of finite and infinite sets. Finite sets and counting principle. Empty set, properties of empty set. Standard set operations. Classes of a set. Power set of a set. Difference and symmetric difference of two sets. Set identities, Generalized union and intersection. **Relations and Functions:** Product set, Composition of relations, Types of relations, Partitions, Equivalence Relations with example of congruence modulo relation, Partial ordering relations. Function, Types of Function, Inverse Function, Composite of functions, Modular arithmetic and basic properties of congruences	**15**

Dr. S. Dashpute

(Dr. P. K. Sahu)

III	**Theory of equations:**Symmetric functions of the roots of an equation Root of a multiplicity, Synthetic division, Greatest common Divisors, Relation between the roots and coefficients of general polynomial equations in one variable. Transformation of equations. Descarte's rule of signs. Solutions of cubic equations (Cardon method) , Biquadrate equation.	**15**
IV	**Group Theory:**Definition and properties of a group, Abelian groups, Examples of groups, Subgroups and examples, Cosets and their properties, Lagrange's theorem and its applications, Normal subgroups and their properties, Simple groups, Factors groups .	**15**

Part C - Learning Resource

Text Books, Reference Books, Other Resources

Text Books Recommended-

1. RamjiLal (2017). *Algebra 1: Groups, Rings, Fields and Arithmetic*. Springer.
2. Nathan Jacobson (2009). *Basic Algebra* I (2nd edition). Dover Publications
3. John B. Fraleigh (2007). *A First Course in Abstract Algebra* (7th edition). Pearson

Reference Books Recommended-

4. Michael Artin (2014). *Algebra* (2nd edition). Pearson.
5. Stephen H. Friedberg, Arnold J.Insel& Lawrence E. Spence (2003). *Linear Algebra* (4thedition). Prentice-Hall of India Pvt. Lt
6. Joseph A. Gallian (2017). *Contemporary Abstract Algebra* (9th edition). Cengage.
7. Kenneth Hoffman & Ray Kunze (2015). *Linear Algebra* (2nd edition). Prentice-Hall.
8. I. N. Herstein (2006). *Topics in Algebra* (2nd edition). Wiley India.

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. Dashpute) (Dr. P. K. Sahu)

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

PART – A: INTRODUCTION

Program: Bachelor in Science (Certificate/ Diploma/ Degree/ Honors)	Semester: II	Session: 2024-25

1	**Course Code**	**PHSC-02T**	
2	**Course Title**	**ELECTRICITY AND MAGNETISM**	
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: ➢ State various laws related with electrostatics, dielectric, electric current, magnetism and electromagnetic induction. ➢ Apply vector (electric fields, Coulomb's law) and scalar (electric potential, electric potential energy) formalisms of electrostatics. ➢ Compare rise and decay of current in LR, CR, LCR circuits. ➢ Apply Biot-Savart law for calculation of magnetic field in simple geographic situations. ➢ Derive and analyze Maxwell's equations.	
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	**Power plants in Chhattisgarh:** An overview of thermal and hydroelectric power plants in Chhattisgarh. **Vector Analysis**: Divergence & Curl of Vector fields, Line, surface and volume integrals of Vector fields, Gauss-divergence theorem and Stoke's theorem of vectors and its application in electrostatics and magnetostatics.**Electrostatics field:** Electrostatic Field, electric flux, Gauss's theorem of electrostatics, Applications of Gauss theorem- Electric field due to point charge, infinite line of charge, plane charged sheet, charged conductor.	12
II	**Electrostatic potential:**Electric potential as line integral of electric field, potential due to a point charge, Calculation of electric field from potential, Capacitance of Parallel plate capacitor, Energy per unit volume in electrostatic field. **Dielectric & Electric Currents:** Dielectric medium, Polarisation, Displacement vector, Gauss's theorem in dielectrics, Parallel plate capacitor completely filled with dielectric.Steady current, current density J, non – steady current and Continuity equation, Rise and decay of current in LR, CR, LCR circuits.	13
III	**Magnetism:** Magnetostatics: Biot-Savart's law and its applications- straight conductor, circular coil, solenoid carrying current, Divergence and curl of magnetic field, Magnetic vector potential, Ampere's circuital law, Magnetic properties of materials: Magnetic intensity, magnetic induction, permeability, magnetic susceptibility, Brief introduction of dia, para and ferro-magnetic materials.	10
IV	**Electromagnetic Induction:** Faraday's laws of electromagnetic induction, Lenz's law, self and mutual inductance, L of single coil, M of two coils, Energy stored in magnetic field. **Maxwell`s equations and Electromagnetic wave propagation:** Equation of continuity of current, Displacement current, Maxwell's equations, Wave equation in free space.	10
Keywords:	Vector calculus, Electrostatics, Dielectrics and Electric Current, Magnetism, Electromagnetic Induction, Maxwell's Equation and Electromagnetic Wave Propagation	

SignatureofConvener&Members (CBoS) :

10/6/24

PART – C: LEARNING RESOURCES

Text Books, Reference Books and Others

Text Books

1. Electricity and Magnetism, D C Tayal, 1988, Himalaya Publishing House.
2. Unified Physics – Part II, R. P.Goyal, Shivlal Agrawal and Sons
3. Unified Physics – Navbodh Publications
4. Introduction to Electrodynamics and Electromagnetism, H.C.Verma,

Reference Books

1. Vector analysis – Schaum's Outline, M.R. Spiegel, S. Lipschutz, D. Spellman, 2nd Edn., 2009, McGraw- Hill Education.
2. University Physics, Ronald Lane Reese, 2003, Thomson Brooks/Cole.

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* https://www.motionmountain.net/?gclid=CjwKCAjwmq3kBRB_EiwAjkNDp5v8Yy6xK1s0Kma0VR0AWGlichRwFfCC0-vpZK1jrPoEOAnBq8fcqRoCILsQAvD_BwE
3. *Cambridge University Books for Physics* https://www.cambridgeindia.org/
4. *Books for solving physics problems* https://bookboon.com/en/physics-ebooks
5. *NPTEL Online courses:* https://onlinecourses.nptel.ac.in/noc21_ph05/preview
6. https://archive.nptel.ac.in/courses/115/104/115104088/
7. *Classical Electromagnetism - 1 (Electrostatics)* https://bsc.hcverma.in/course/cee1
8. *Classical Electromagnetism - 2 (Electrostatics)* https://bsc.hcverma.in/course/cee2

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 Examination (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:

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

PART – A: INTRODUCTION

Program:Bachelor in Science (Certificate/ Diploma/ Degree/ Honors)	Semester: II	Session: 2024-25

1	Course Code	PHSC- 02P	
2	Course Title	Electricity & Magnetism	
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 laws of Electricity, Magnetism and EMWs. The students will also be able to* ➢ *Verify various circuit laws, network theorems, using simple electric circuits. Assemble required parts/devices and arrange them to perform experiments.* ➢ *Verify various laws in electricity and magnetism such as Lenz's law, Faraday's law and learn about the construction, working of various measuring instruments* ➢ *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 Electricity, Magnetism and its applications*	
6	Credit Value	01 Credit	1 Credit = 30 Hours Laboratory 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 Periods
1	To use a Multimeter for measuring (a) Resistances, (b) AC and DCVoltages,(c) DC Current, and (d) checking electrical fuses.	30
2	To compare capacitances using De'Sauty's bridge.	
3	Measurement of field strength B and its variation in a Solenoid Determine (dB/dx).	
4	To study the Characteristics of a Series RC Circuit.	
5	To study a series LCR circuit and determine its (a) Resonant Frequency, (b) Quality Factor.	
6	To study a parallel LCR circuit and determine its (a) Anti-resonant frequency and(b) Quality factor Q.	
7	To determine a Low Resistance by Carey Foster's Bridge.	
8	To verify the Thevenin and Norton theorem.	
9	To verify the Superposition, and Maximum Power Transfer Theorem.	
10	To use a vibration magnetometer and study magnetic field.	
11	Study of magnetic field due to a current loop.	
12	Study of magnetic fields using Deflection Magnetometer	
13	Mini Project: Construction and Study of Solenoid and measurement of its magnetic field	

Keywords:	Multimeter, Capacitance Comparison, Magnetic Field, RC Circuit, Series LCR Circuit, Parallel LCR Circuit, Low Resistance Measurement, Electrical Theorems

SignatureofConvener&Members (CBoS) :

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PART – C: LEARNING RESOURCES

Text Books, Reference Books and Others

Text Books Recommended-

1. Engineering Practical Physics, S.Panigrahi&B.Mallick,2015, Cengage Learning India Pvt. Ltd.
2. A Text Book of Practical Physics, Indu Prakash and Ramakrishna, 11th Edition, 2011, Kitab Mahal, New Delhi.
3. Unified Practical Physics : R P Goyal, Shivlal Agrawal & Sons
4. Unified Practical Physics: YugbodhPrakashan
5. Unified Practical Physics: NavbodhPrakashan

Reference Books Recommended-

1. Basic Electrical and Electronics Engineering by S. K. Bhattacharya
2. A Textbook of Electrical Technology by B.L. Theraja and A.K. Theraja (Volumes 1 and 2)
3. Engineering Circuit Analysis by William H. Hayt, Jack E. Kemmerly, and Steven M. Durbin
4. Practical Physics by G.L. Squires

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/index.php?sub=1&brch=192
3. http://emv-au.vlabs.ac.in/#
4. https://www.ae.msstate.edu/vlsm/
5. https://nationalmaglab.org/magnet-academy/watch-play/interactive-tutorials
6. https://jigyasa-csir.in/cgcri/n12-t4-a3/

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 - II**	Session: **2024-2025**
1	**Course Code**	**CHSC-02T**		
2	**Course Title**	**FUNDAMENTAL CHEMISTRY-II**		
3	**Course Type**	**DSC**		
4	**Pre-requisite** (if, any)	***As per Program***		
5	**Course Learning. Outcomes (CLO)**	➢ *To understand different acid-base theories and solvent system .* ➢ *To learn the preparation, bonding, and reactions of C-C σ- & π- bonded compounds* ➢ *To understand the concept and chemistry of aromatic compounds and their reactions* ➢ *To learn the basic concepts of various states of matter &understand the basic concepts of surface chemistry and chemical kinetics*		
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	**Acid, Base and Solvent System** **Theories of acids and bases**: Arrhenius, Bronsted-Lowry, conjugate acids and bases, relative strengths of acids and bases, the Lux-flood, solvent system and Lewis concepts of acids and bases. **HSAB concept**: Classification of Acids and Bases According to HSAB Theory (Hard, Borderline, Soft). Applications of HSAB Theory in Inorganic Reactions - Solubility, Selectivity, Redox Reactions Non-aqueous solvents: .Physical properties of a solvent, types of solvents and their general characteristics, Liquid ammonia as a solvent. Acid-base, precipitation and complex, formation reactions. Solutions of alkali and alkaline earth metals in ammonia-application)	11
II	**CHEMISTRY OF C-C σ–BONDING** Alkanes: Preparation (Wurtz reaction, reduction/hydrogenation of alkenes, Corey-House method). Reactions (mechanisms): halogenation, free radical substitution. Cycloalkanes: Preparation (Dieckmann's ring closure, reduction of aromatic hydrocarbons), Reactions (mechanisms): substitution and ring-opening reactions. Stability of cycloalkanes -Baeyer's strain theory, Sachse and Mohr predictions, Conformational structures of ethane, n-butane and cyclohexane. **CHEMISTRY OF C-C π–BONDING** Alkenes: Preparation methods (dehydration, dehydrohalogenation, dehydrogenation, Hoffmann and Saytzeff rules, cis and trans eliminations). Reactions (mechanisms): electrophilic and free radical addition (hydrogen, halogen, hydrogen halide, hydrogen bromide, water, hydroboration, ozonolysis, dihydroxylation with $KMnO_4$). Dienes: 1,2- and 1,4-additions, Diels-Alder reactions. Alkynes: Preparation (dehydrohalogenation, dehydrogenation), Reactions: Acidity, formation of acetylides, addition of water, hydrogen halides and halogens, oxidation,	12

	ozonolysis, hydroboration/oxidation. **Aromatic Hydrocarbons** Aromatic hydrocarbons: Aromaticity: Hückel's rule, aromatic character of arenes, cyclic carbocations/ carbanions and heterocyclic compounds with suitable examples. Electrophilic aromatic substitution: halogenation, nitration, sulphonation and Friedel-Craft's alkylation/acylation with their mechanism. Directive effects of the groups.	
III	**Behaviour of ideal gases:** Kinetic theory of gases – postulates and derivation of the equation, $PV = 1/3\ mnc^2$ and derivation of the gas laws- Maxwell's distribution of molecular velocities-effect of temperature-types of molecular velocities-degrees of freedom-Principle of equipartition of energy. **Behaviour of Real gases:** Deviation from ideal behaviour, derivation of van der Waals, equation of state and critical constants. **Liquid state chemistry:** structure of liquids(Eyring Theory), Properties of liquids, viscosity and surface tension. **Solid state chemistry:** Nature of the solid state, law of constancy of interfacial angles, law of rational indices, Miller indices, elementary ideas of symmetry, symmetry elements and symmetry operations, seven crystal systems and fourteen Bravais lattices; X-ray diffraction, Bragg's law, Crystal defects.	**11**
IV	**A. Colloids and surface chemistry:** Classification, Optical, Kinetic and Electrical Properties of colloids, Coagulation, Hardy Schulze law, flocculation value, Protection, Gold number, Emulsion, micelles and types, Gel, Syneresis and thixotropy, Physical adsorption, chemisorption, **B. Chemical kinetics:** Rate of reaction, Factors influencing rate of reaction, rate law, rate constant, Order and molecularity of reactions, rate determining step, Zero, First and Second order reactions, Rate and Rate Law, methods of determining order of reaction, Chain reactions. Temperature dependence of reaction rate, Arrhenius theory, Physical significance of Activation energy, collision theory, demerits of collision theory, non-mathematical concept of transition state theory. **C. Catalysis:** Homogeneous and Heterogeneous Catalysis, types of catalyst, characteristics of catalyst, Enzyme catalyzed reactions, Industrial applications of catalysis.	**11**
Keywords	***Acid & Bases, Alkanes, Cycloalkanes, Alkenes, Dienes, Alkynes, Aromatic Hydrocarbons, Kinetic theory of gases, Real gases, Intermolecular forces, Crystal structure, Chemical kinetics***	

Signature of Convener & Members (CBoS) :

PART–C: Learning Resources

Text Books, Reference Books and Others

Textbooks Recommended:

1. *Bahl, A., & Bahl, B. S. (2014). Organic Chemistry (22nd Ed.). S. Chand & Sons.*
2. *Ahluwalia, V. K., & Goyal, M. (2001). A Textbook of Organic Chemistry. Narosa Publishing House.*
3. *Jain, M. K., & Sharma, S. C. (2017). Modern Organic Chemistry. Vishal Publishing Company.*
4. *Puri, B. R., Sharma, L. R., & Pathania, M. S. (2013). Principles of Physical Chemistry (46th Ed.). Shoban Lal Nagin Chand And Co.*
5. *Bahl, B. S. A., & Tuli, G. D. (2009). Essentials of Physical Chemistry (Multicolour Ed.). S. Chand & Company Pvt Ltd.*
6. *Puri, B. R., Sharma, L. R., & Kalia, K. C. (2018). Principles of Inorganic Chemistry. Nagin Chand and Co., New Delhi.*

Reference Books Recommended:

1. *Paula, B. Y. (2014). Organic Chemistry (7th Ed.). Pearson Education, Inc. (Singapore).*
2. *Solomons, T. W. G. (2017). Organic Chemistry (Global Ed.). John Wiley & Sons.*
3. *Morrison, R. T., & Boyd, R. N. (2010). Organic Chemistry (7th Ed.). Prentice-Hall Of India Limited.*
4. *Laidler, K. J., & Meiser, J. H. (2006). Physical Chemistry (2nd Indian Ed.). CBS Publishers.*
5. *Atkins, P. W., & De Paula, J. (2006). Physical Chemistry (8th Ed.). Oxford University Press.*
6. *Dogra, S., & Dogra, S. (2006). Physical Chemistry through Problems (2nd Ed.). New Age International.*
7. *Sangaranarayanan, M. V., & Mahadevan, V. (2011). Textbook of Physical Chemistry. University Press.*

Online Resources–

- https://bit.ly/3Gb99iy
- https://www.organic-chemistry.org/
- https://bit.ly/3GduvMi
- https://bit.ly/30TXm8d
- https://application.wiley-vch.de/books/sample/3527316728_c01.pdf
- https://www.ncbi.nlm.nih.gov/books/NBK547716/

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** ~~/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- II**	Session: **2024-2025**
1	**Course Code**	**CHSC-02P**		
2	**Course Title**	**CHEMISTRY LAB. COURSE-II**		
3	**Course Type**	**DSC**		
4	**Pre-requisite** (if, any)	***As per Program***		
5	**Course Learning. Outcomes (CLO)**	➢ *Demonstrating and using common glassware for accurate measurements* ➢ *Studying the functional group analysis organic compounds* ➢ *Determining melting points to assess compound purity and employing distillation and sublimation techniques to establish boiling points* ➢ *Equipping with essential skills in measuring liquid surface tension and solution viscosity*		
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	**Basic Laboratory Techniques** Demonstration of Laboratory Glassware and Equipment, Calibration of Thermometer : 80-82°C (Naphthalene), 113.5°-114°C (Acetanilide), 132.5°C - 133°C (Urea), 100°C (Distilled Water) **Functional group Analysis of Organic Compounds,** Detection of elements (N, S, and halogens) and functional groups **Physical chemistry** Surface tension measurements: Determine the surface tension by (i) drop number (ii) drop weight method. Surface tension composition curve for a binary liquid mixture. Viscosity measurement using Ostwald's viscometer, Determination of viscosity of aqueous solutions of (i) sugar (ii) ethanol at room temperature. Study of the variation of viscosity of sucrose solution with the concentration of solute. Viscosity Composition curve for a binary liquid mixture	**30**
Keywords	***Basic laboratory techniques, Equipments, Calibration, Melting points, Qualitative analysis, Physical chemistry, Surface tension, Viscosity***	

Signature of Convener & Members (CBoS) :

PART–C: Learning Resources

Text Books, Reference Books and Others

Textbooks Recommended:

1. *Ahluwalia, V. K., Dhingra, S., & Gulati, A. (N.D.). College Practical Chemistry. University Press.*
2. *Khosla, B. D., Garg, V. C., & Gulati, A. (2011). Senior Practical Physical Chemistry. S. Chand & Co.*

Reference Books Recommended:

3. *Garland, C. W., Nibler, J. W., & Shoemaker, D. P. (2003). Experiments in Physical Chemistry (8th Ed.). Mcgraw-Hill.*
4. *Mendham, J. (2009). Vogel's Quantitative Chemical Analysis (6th Ed.). Pearson Education.*
5. *Mann, F. G., & Saunders, B. C. (2009). Practical Organic Chemistry. Pearson Education.*
6. *Furniss, B. S., Hannaford, A. J., Smith, P. W. G., & Tatchell, A. R. (2012). Practical Organic Chemistry (5th Ed.). Pearson Education.*

Online Resources–

- http://heecontent.upsdc.gov.in/Home.aspx
- https://nptel.ac.in/courses/104/106/104106096/
- http://heecontent.upsdc.gov.in/Home.aspx
- https://nptel.ac.in/courses/104/106/104106096/
- https://www2.chemistry.msu.edu/faculty/reusch/VirtTxtml/introl.htm
- https://nptel.ac.in/courses/104/103/104103071/W

Online Resources–

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

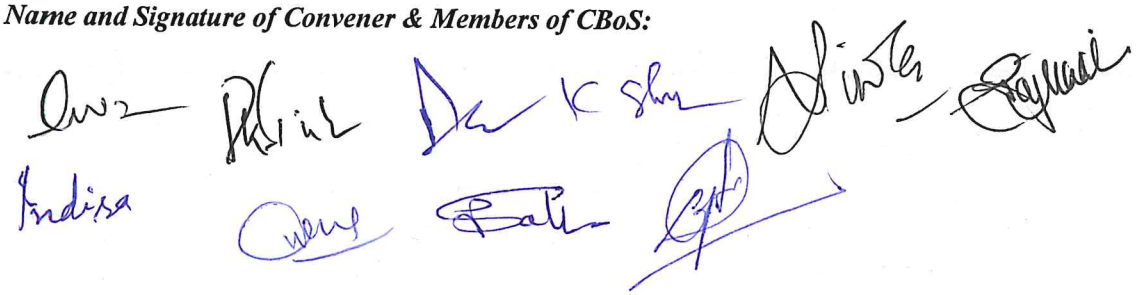
PART -D: Assessment and Evaluation

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** **D. Performed the Task based on lab. work - 20 Marks** **E. Spotting based on tools & technology (written) – 10 Marks** **F. 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 (2024 - 28)
DEPARTMENT OF ENGLISH
COURSE CURRICULUM

PART- A: Introduction				
Program: Bachelor in Arts *(Certificate/Diploma/Degree/Honors)*			**Semester - II**	Session: **2024-2025**
1	**Course Code**	**ENGE-02**		
2	**Course Title**	**History 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: ➢ Be aware of the characteristics of the various ages of English Literature. ➢ Understand different factors responsible for the literary developments that have taken place over the centuries in English Literature. ➢ Understand the development of English literature through historical Timeline. ➢ Comprehend the defining ethos and characteristics of different periods in English Literature. ➢ Develop a comprehensive understanding of the history of English Literature. ➢ Take cognizance of the historical, social and cultural context of each literary age and thereby make connections between literature and society & appreciate literature's ability to stimulate feeling.		
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	**Age of Chaucer: (1350-1400):** **Section A:** ***a) Salient Features:*** Hundred Years War, The Black Death, Religious Writings, Ballad Writing ***Prominent Author:*** Geoffery Chaucer **Section B: (any one)** ***a) Geoffrey Chaucer:*** *The Knight,* *The Pardoner (from The Prologue to The Canterbury Tales)* **Renaissance: (1516-1625):** **Section A:** ***a) Salient Features:*** *Intellectual Rebirth, Freedom of thought & action, Thirst for knowledge, Love for Adventure and unlimited power, University wits, Elizabethan Lyric and Sonnets,* ***b) Prominent Authors:*** *Francis Bacon, Christopher Marlowe, Edmund Spenser, William Shakespeare*	**15**

	Section B: (any one) ***a) Francis Bacon (Prose):*** *Of Revenge* ***b) William Shakespeare (Sonnet):*** *From Fairest Creatures We Desire Increase*	
II	**Puritan Age (1625-1660)** **Section A:** ***a) Salient Features:*** *Purification of Church, Religious Fervour, Supremacy of Bible, Political Supremacy, Rise of Religious Verses. Metaphysical Poetry* ***b) Prominent Authors:** John Milton, John Donne, George Herbert, Thomas Browne, Henry Vaughan* **Section B: (any one)** ***a) John Milton:*** *i. On His Blindness* *ii. How Soon Hath Time* ***b) John Donne:*** *i. The Sun Rising* *ii. Death Be Not Proud* **Restoration (1660-1700)** **Section A:** ***a) Salient Features:*** *Social & Political Conflict, Imitation of the ancients, Opening of Theaters, Rise of Neo-Classicism, Heroic Drama, Comedy of Manners, Cavalier Poetry* ***b) Prominent Authors:** John Dryden, John Bunyan, Samuel Butler, William Congreve.* ***Section B: (any one)*** ***a) John Dryden:*** *Happy The Man* ***b) John Bunyan:*** *Of The Boy and Butterfly*	**15**
III	**Neo-Classical Age:(1700-1798)** **Section A:** ***a) Salient Features:*** *Emphasis on order, accuracy and structure, Periodical Essay, Literature of Sensibility, Graveyard Poetry* ***b) Prominent Authors:** Alexander Pope, Dr. Samuel Johnson, Thomas Gray, Joseph Addison, Oliver Goldsmith* **Section B: (Any one author)** ***Alexander Pope:*** *Ode on Solitude* ***Joseph Addison:*** *Sir Roger at Home* **The Romantic Age (1798-1850)** **Section A:** ***Salient features:*** *Nature Poetry, Gothic Novel, Jacobean Novel Celebration of Nature, Focus on the Individual, Idealization of Common man and woman* ***Prominent Authors:** William Wordsworth, P.B. Shelley, John Keats, Jane Austen, Charles Lamb, William Hazlitt* **Section B:(Any one author)** ***William Wordworth:*** *Daffodils* ***Charles lamb:*** *A Bachelor's Complaint of the Behaviour of Married People*	**15**
IV	**The Victorian Age:** **Section A:** ***Salient Features:***	

	Conflict between Science and Religion, Prominence of Novels, Dramatic Monologues, Periodicals, Children Literature, Oxford Movement, Pre-Raphaelite Movement. ***Prominent Authors:*** *Robert Browning, Matthew Arnold, Charles Dickens, George Eliot, Emily Bronte, Thomas Carlyle, Thomas Macaulay.* **Section B:** ***Robert Browning:*** *My Last Duchess/* ***Alfred Tennyson**: Lotus Eater/* ***Mathhew Arnold:** Dover Beech/* ***Thomas Carlyle:*** *Hero as Poet* **Modern Age** **Section A:** ***Salient Features:*** *Shift from external to inner reality of human mind, psychological detailing of mind, stream of consciousness and interior monologue, Imagism, Dadaism, Surrealism, Georgian Poetry.* ***Prominent Authors:*** *W.B. Yeats, Siegfried Sassoon, T.S. Eliot, W.H. Auden, Dylan Thomas, G.B. Shaw, Samuel Becket, Thomas Hardy, Rudyard Kipling, Virginia Woolf, George Orwell* **Section B: (any one)** ***W.B. Yeats:*** *A Prayer for my Daughter* ***T.S. Eliot:** Portrait of a Lady* ***George Orwell:*** *Animal Farm*	
Key-words	*Hundred Years war, Black Death, Intellectual Rebirth, Supremacy of Bible, Metaphysical Poetry, Neo-Classicism, Comedy of Manners, Periodic Essay, Gothic Novel.*	

Signature of Convener & Members (CBoS) :

PART–C: Learning Resources

Text Books, Reference Books and Others

Reference Books:

Albert, E., "History of English Literature", Oxford University Press, London, 2015.

- Homer: The Iliad, (Book I) tr. E.V. Rieu Harmondsworth: Penguin, 1985.
- Sophocles: Oedipus, the King, tr. Robert Fagles in Sophocles: The Three Theban Plays Harmondsworth: Penguin, 1984.
- Gilbert Murray, A History of Ancient Greek Literature, Andesite Press, 2017.
- Plato, The Republic, Book X, tr. Desmond Lee London: Penguin, 2007.
- Gregory, J. (ed.) The Blackwell Companion to Greek Tragedy. Oxford, 2005.
- Cuddon, J.A., "Dictionary of Literary Terms and Literary Theory", Penguin Books, London, 1999.
- Drabble, M., (ed.), "The Oxford Companion to English Literature", Oxford University Press, Oxford, 1996.
- Prasad, B., "A Background to the Study of English Literature", Trinity Press, New Delhi, 2014
- Harmon & Holman., (ed.), "A Handbook to English Literature", Prentice Hall, New York, 1996.
- Wynne-Davies, M., "The Bloomsbury Guide to English Literature", Prentice Hall, New York,1990.

Online Resources

- *https://www.britannica.com/art/English-literature*
- *https://leverageedu.com/blog/history-of-english-literature/*
- *https://www.edvisehub.com/history-of-english-literature/*
- *https://www.worldwidejournals.com/paripex/recent_issues_pdf/2015/April/April_2015_1429622759_169.pdf*

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 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 **HINDI**
COURSE CURRICULUM

PART -A : Introduction				
Program: Bachelor in Arts Certificate/Diploma/Degree/Honors		Semester - **II**		Session: 2024-25
1	Course Code	HNGE-02		
2	Course Title	**हिन्दी साहित्य का इतिहास – आधुनिक काल**		
3	Course Type	GE		
4	Pre-requisite (if any)	As per requirement		
5	Course Learning Outcome (CLO)	1. युगीन परिस्थितियों और साहित्यिक प्रवृत्तियों के आधार पर विद्यार्थी पुनर्जागरण काल एवं जागरण सुधार काल के प्रमुख रचानाकारों की उपादेयता को गहनता से समझ सकेंगे। 2. हिन्दी पद्य के साथ गद्य के क्रमबद्ध विकास को समझ सकेंगे। 3. छायावाद एवं छायावादोत्तर काव्य के माध्यम से तात्कालीन स्वतंत्रता आंदोलन की पृष्ठ भूमि से विद्यार्थी अवगत होगे। 4. स्वातंत्र्योत्तर पद्य और गद्य की विभिन्न विधाओं के माध्यम से विद्यार्थी बदलते हुए सामाजिक–सांस्कृतिक मूल्यों को समझने में सक्षम हो सकेंगे। 5. भूमण्डलीकरण के दौर में युगीन हिन्दी साहित्य को विश्व साहित्य के सामानान्तर रख कर मूल्यांकनपरक दृष्टि एवं समझ का विकास हो सकेगा।		
6	Credit Value	4 Credits	(01 Credit = 15 Hours - learning & Observation)	
7	Total Marks	Maximum Marks : 100		Minimum Passing Marks : 40

11-06-24

11/6/2024

11/6/24

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	**आधुनिक काल व हिन्दी नवजागरण – भातेन्दु युग** अ. आधुनिक काल की राजनैतिक, सामाजिक, आर्थिक एवं सांस्कृतिक पृष्ठभूमि, हिन्दी नवजागरण ब. भारतेन्दु युग – प्रमुख साहित्यकार, साहित्य एवं साहित्यिक विशेषताएं	15
II	**द्विवेदी युग व छायावाद** अ. द्विवेदी युग के प्रमुख साहित्यकार, साहित्य एवं विशेषताएं ब. छायावाद के प्रमुख साहित्यकार, साहित्य एवं विशेषताएं	15
III	**छायावादोत्तर काल (विभिन्न प्रवृत्तियॉं)** अ. प्रगतिवाद व प्रयोगवाद के प्रमुख साहित्यकार, साहित्य एवं विशेषताएं ब. नई कविता व समकालीन कविता के प्रमुख साहित्यकार, साहित्य एवं विशेषताएं	15
IV	**हिन्दी गद्य का विकास** अ. कहानी एवं उपन्यास का उद्‌भव एवं विकास, सामान्य प्रवृत्तियां व प्रमुख कथाकार, उपन्यासकार ब. निबंध एवं नाटक का उद्‌भव एवं विकास, सामान्य प्रवृत्तियां व प्रमुख निबंधकार तथा नाटककार	15
Keywords		

Signature of Convener & members (CBos) :

PART -C : Learning Resource
Text Books, Reference Books and Others
1. महावीर प्रसाद द्विवेदी और हिन्दी नवजागरण – डॉ. रामविलास शर्मा, राजकमल प्रकाशन, नई दिल्ली 2. भारतेन्दु हरिशचंद्र और हिन्दी नवजागरण – डॉ. रामविलास शर्मा, राजकमल प्रकाशन, नई दिल्ली 3. छायावाद की प्रासंगिकता – रमेशचन्द्र शाह, वाग्देवी प्रकाशन बिकानेर 4. नवजागरण की समस्याएं – डॉ. रामविलास शर्मा, राजकमल प्रकाशन, नई दिल्ली 5. भारतेन्दु की रंग परिकल्पना – सत्येन्द्र तनेजा 6. छायावादोत्तर प्रतिनिधि कवि और उनकी कविताएं – विश्वविद्यालय प्रकाशन वाराणसी 7. हिन्दी गद्य का विकास – भारतेन्दु हरिशचंद्र 8. आधुनिक हिन्दी गद्य का इतिहास – आचार्य रामचन्द्र शुक्ल, राजकमल प्रकाशन, नई दिल्ली 9. भारतेन्दु युग – डॉ.सत्यपाल शर्मा 10. हिन्दी नाटक उदभव और विकास – दशरथ ओझा, राजपाल प्रकाशन 11. आधुनिक साहित्य की प्रवित्तियां – नामवर सिंह, राजकमल प्रकाशन, दिल्ली
Online Resources -
1. E-Adhyayan 2. https://epustakalay.com.book 3. info@hindibook.com
PART -D : Assessment And Evaluation

11-06-24

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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

(Dr. Rajeet Kaur)
11/11/2024.

11/6/24

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

PART-A : INTRODUCTION

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

SUBJECT: **SOCIOLOGY**

1	COURSE CODE:	SOGE-02	
2	COURSE TITLE:	**CHANGING SOCIAL INSTITUTIONS IN INDIA**	
3	COURSE TYPE:	DGE 02	
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 students will learn and understand the classical background ofIndian society. • Students will learn about the Indian social structure. • The course will enhance understanding about pre dominant issues of Indian society. • This course will enhance the understanding about rural structure, development and issues. • The students will learn about social problems of India.	
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 Classical Indian: Society and Changes	1. Classical Indian Society and Changes 2. Ashram, Purusharth 3. Karma: Views on Past and Present 4. Caste Roles and Varna Formulations	15
UNIT-II Indian Social Structure	1. Family Roles and its Changing Nature 2. Marriage and its Challenges 3. Kinship: Principle and Pattern 4. Jajmani and Agrarian Relationship	15
UNIT-III Rural Social System	1. Rural Development and Change 2. Rural Migration and Urbanisation 3. Religiosity and superstition in rural society 4. Problem of Peasants	15
UNIT-IV Social Issues in India	1. Poverty and Unemployment : Causes and Remedies 2. Problem of Corruption: Causes and Remedies 3. Drugs Abuse: Types, Causes and Remedies 4. Cyber Crime: Types, Causes and Remedies	15

Signature of Convener & Members :

1. 2. 10-6-24 3. 4. 5. 6. 7. 10-6-24

PART-C : LEARNING RESOURCES, REFERENCE BOOKS& OTHERS		
AUTHOR	**TITLE**	**PUBLISHER**
TEXTBOOK		
C.N.Shankar Rao	Indian Social Problems	S Chand
Ram Ahuja	Social Problems in India	Rawat Publication
C.N.Shankar Rao	Sociology of Indian Society	S Chand Publication
REFERENCE		
Rajendra Kumar Sharma	Indian Society: Institutions and Change	Atlantic Publication
B.R.Chauhan	Indian Villages	Rawat Publication
Indra Dewa	Society and Culture in India	Rawat Publucation

Online Resources	
1	https://epgp.inflibnet.ac.in
2	https;//vidyamitra.inflibnet.ac.in
3	https://vidyamitra.inflibnet.ac.in/index.php/search
4	https://www.swayamprabha.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

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

PART-A, INTRODUCTION			
PROGRAM: Bachelor in Art (Certificate/Diploma/Degree/Honors)		**Sem -II**	**SESSION:2024-2025**
SUBJECT: **ECONOMICS**			
1	COURSE CODE:	ECSC-02	
2	COURSE TITLE:	**BASICS OF INDIAN ECONOMY**	
3	COURSE TYPE:	DSC	
4	Pre-requisite	As per program	
5	COURSE LEARNING OUTCOME (CLO):	• The students learn about the state of Indian economy pre and post-independence. • The students learn about the planning process and its achievements in Indian economy. • The students come across with the new economic reforms introduced in Indian economy in the year 1991 and its role in India's development. • The students will come to know about some social problems like overpopulation, education, health & malnutrition, poverty, unemployment etc. • The students learn the problems and prospects of agriculture sector in India. • The students learn various aspects of industrial development and reforms process in the industrial economy. • The students learn the role of foreign trade on Indian economy. They will also learn various aspects of foreign trade in India. • The students learn the state income of Chhattisgarh in the form of GSDP, Per capita income, sectorial contribution etc. • The students also learn about the importance of agriculture in Chhattisgarh's economy. • The students learn about various crops their production and productivity. • The students learn about various industries and infrastructure facilities in Chhattisgarh.	
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- AN INTRODUCTION TO INDIAN ECONOMY	1. INDIAN ECONOMY AT THE TIME OF INDEPENDENCE 2. POST INDEPENDENCE INDIAN ECONOMY	15

	3. DEVELOPMENT THROUGH FIVE YEAR PLANS 4. NITI AAYOG 5. NEW ECONOMIC REFORMS	
UNIT II- DEMOGRAPHY	1. DEMOGRAPHIC TRENDS OF INDIA 2. ISSUES OF EDUCATION, HEALTH, MALNUTRITION AND MIGRATION. 3. POVERTY AND INEQUALITY 4. UNEMPLOYMENT & OCCUPATIONAL DISTRIBUTION	15
UNIT III- AGRICULTURE	1. NATURE & IMPORTANCE OF AGRICULTURE 2. AGRICULTURE PRODUCTION & PRODUCTIVITY 3. MAJOR PROBLEMS IN INDIAN AGRICULTURE 4. LAND USE PATTERN & LAND REFORMS 5. NEW AGRICULTURE STRATIGIES & GREEN REVOLUTION	15
UNIT IV- INDUSTRY & FOREIGN TRADE	1. INDUSTRIAL GROWTH & PRODUCTIVITY 2. INDUSTRIAL POLICY & ECONOMIC REFORMS 3. MICRO, SMALL & MEDIUM INDUSTRIES (MSME) 4. PROBLEMS OF SMALL SCALE INDUSTRIES 5. PUBLIC ENTERPRIZES IN INDIA 6. ROLE OF FOREIGN TRADE IN INDIA'S DEVELOPMENT	15

Signature of Convener & Members CBoS:-

PART-C, LEARNING RESOURCES ,Reference Books& others

AUTHOR	TITLE	PUBLISHER
Uma Kapila	India Economy: Performance & Policies	Academic Foundation
Datt, Ruddar & K.P.M. Sundharam	Indian Economy	S. Chand & Co. new Delhi
Mishra & Puri	Indian Economy	Himalaya Publishing House
Govt. of India	Economic Survey (Various Issues)	Govt. of India
Brahmanand, P.R. & V.R. Panchmukhi (Eds)	The development process of the Indian Economy	Himalaya Publishing, Mumbai

मिश्रा एवं पुरी	भारतीय अर्थव्यवस्था	हिमालया पब्लिशिंग हाउस
अग्रवाल, ए. एन.	भारतीय अर्थव्यवस्था	न्यू ऐज इंटरनेशनल पब्लिशर्स
मिश्र, जे. पी.	भारतीय अर्थव्यवस्था	साहित्य भवन पब्लिकेशन, आगरा
छत्तीसगढ़ सरकार	आर्थिक सर्वेक्षण	आर्थिक एवं सांख्यिकीय संचालनालय, रायपुर
Uma Kapila	India Economy: Performance & Policies	Academic Foundation

Online Resources

1	https://epgp.inflibnet.ac.in
2	https;//vidyamitra.inflibnet.ac.in
3	https://vidyamitra.inflibnet.ac.in/index.php/search
4	https://www.swayamprabha.gov.in
5	https://www.rbi.org.in/
6	http://descg.gov.in
7	https://www.indiabudget.gov.in/economicsurvey/
8	https://www.cso.ie/en/index.html

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
End Semester Exams (ESE) :	**Two Section – A & B** **Section A:** Q 1- Objective- 10x1=10 Marks Q 2-Short answer type- 5x4=20 Marks **Section B:** Descriptive answer type questions, 1 out of 2 from each unit - 4x10=40 Marks	

Signature of Convener & Members CBoS:-

चार वर्षीय स्नातक पाठ्यक्रम (2024-28)

अर्थशास्त्र विभाग

कोर्स करिकुलम

खंड – अ : परिचय			
पाठ्यक्रम : बैचलर इन आर्ट्स (सर्टिफ़िकेट / डिप्लोमा / डिग्री / आनर्स / आनर्स सह रिसर्च		**सेमेस्टर – II**	**सत्र – 2024-2025**
1	**कोर्स कूट**	ECSC - 02	
2	**कोर्स शीर्षक**	**भारतीय अर्थव्यवस्था की सामान्य जानकारी**	
3	**कोर्स प्रकार**	DSC	
4	**पूर्व अपेक्षित (यदि हो)**	आवश्यकता अनुरूप	
5	**कोर्स लर्निंग आउटकम (CLO)**	• छात्र आजादी से पहले और आजादी के बाद भारतीय अर्थव्यवस्था की स्थिति के बारे में सीखते हैं। • छात्र भारतीय अर्थव्यवस्था में योजना प्रक्रिया और इसकी उपलब्धियों के बारे में सीखते हैं। • छात्र वर्ष 1991 में भारतीय अर्थव्यवस्था में शुरू किए गए नए आर्थिक सुधारों और भारत के विकास में इसकी भूमिका से परिचित हुए। • छात्रों को कुछ सामाजिक समस्याओं जैसे अधिक जनसंख्या, शिक्षा, स्वास्थ्य और कुपोषण, गरीबी, बेरोजगारी आदि के बारे में पता चलेगा। • छात्र भारत में कृषि क्षेत्र की समस्याओं और संभावनाओं को सीखते हैं। • छात्र औद्योगिक विकास और औद्योगिक अर्थव्यवस्था में सुधार प्रक्रिया के विभिन्न पहलुओं को सीखते हैं। • छात्र भारतीय अर्थव्यवस्था पर विदेशी व्यापार की भूमिका सीखते हैं। वे भारत में विदेशी व्यापार के विभिन्न पहलुओं को भी सीखेंगे। • छात्र जीएसडीपी, प्रति व्यक्ति आय, क्षेत्रीय योगदान आदि के रूप में छत्तीसगढ़ की राज्य आय सीखते हैं। • छात्र छत्तीसगढ़ की अर्थव्यवस्था में कृषि के महत्व के बारे में भी सीखते हैं। • छात्र विभिन्न फसलों, उनके उत्पादन और उत्पादकता के बारे में सीखते हैं। • छात्र छत्तीसगढ़ में विभिन्न उद्योगों और बुनियादी सुविधाओं के बारे में सीखते हैं।	
6	**क्रेडिट महत्व**	4 क्रेडिट	क्रेडिट = 15 घंटे का अध्ययन / प्रशिक्षण/ प्रवेक्षण
7	**कुल अंक**	पूर्णांक - 100	उत्तीर्णांक - 40

खंड – ब : कोर्स की विषयवस्तु

कुल अध्यापन कालखंड (01घंटा प्रति काल खंड) – 60 कालखंड (60 घंटे)

इकाई	**प्रसंग (विषय वस्तु)**	**कालखंड की संख्या**
I - भारतीय अर्थव्यवस्था का परिचय	1. स्वतंत्रता के समय भारतीय अर्थव्यवस्था 2. स्वतंत्रता के बाद की भारतीय अर्थव्यवस्था 3. पंचवर्षीय योजनाओं के माध्यम से विकास 4. नीति आयोग 5. नए आर्थिक सुधार	**15**
II- जनांकिकी	1. भारत की जनसांख्यिकीय प्रवृत्तियाँ 2. शिक्षा, स्वास्थ्य, कुपोषण और प्रवासन के मुद्दे	**15**

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

PART- A: Introduction

Program: Bachelor of Science (CS) *(Certificate / Diploma / Degree)*	Semester - II/IV/V/VI	Session: 2024-2025

1	Course Code	**CSSEC-01**	
2	Course Title	**Multimedia and Animation**	
3	Course Type	**Skill Enhance Course (SEC)**	
4	Prerequisite	***As Per Program***	
5	Course Learning. Outcomes (CLO)	After Completing this course, students will be able to: • Understand about Multimedia Framework. • Work with Adobe Flash. • Create games using Flash. • Film editing using VFX.	
6	Credit Value	**2 Credits (1C+1C)**	***Credit =15 Hours Theoretical Learning and = 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 Teaching-learning periods:
Theory- 15 Periods (15 Hrs.) and Laboratory or Field learning/Training Periods: 30 Periods (30 Hours)

Module	Topics (Course contents)	No. of Period
Theory Content	1. Introduction to multimedia, multimedia hardware, multimedia software and frameworks. 2. Introduction to flash, creating games, making presentations, animation, visualizations. 3. Introduction to VFX, VFX compositing and editing, animation, motion, modelling artist, texture artist, painting, rigging.	15
Lab/Field Training Content	1. Create and Edit 2D animation using Flash. 2. Create and Edit 3D animation using Flash. 3. Making presentation using Flash. 4. Creating games using Flash. 5. Audio/video Editing using VFX. 6. Film editing using VFX. 7. Color grading using VFX. 8. Motion graphics designing using VFX.	30
Keywords	*Multimedia, Animation, Flash, VFX.*	

Name and Signature of Convener & Members of CBoS:

Dr. H.S. Hota
Chairman

ANJEETA KUJUR

PART–C: Learning Resources

Text Books, Reference Books and Others

Text Books Recommended:

- Brian Underdahl, Macromedia Flash MX: The Complete Reference, McGraw-Hill
- Ibis Fernandez, Flash Animation and Cartooning: a creative guide
- Tony white, The animators to Adobe Flash.
- Ian failes, Masters of FX.

Reference Books ***Recommended:***

- Jan Marrelli , A Guide to Web Development Using Adobe Dreamweaver CS3 with Fireworks and Flash, Lawrenceville Press
- Codex Jeffrey A. Okun and Susan Zwerman, The VES handbook of Visual Effects: Indutry Standard VFX Practices and Procedures.

Online Resources:

- Introduction to Multimedia: https://www.javatpoint.com/multimedia-definition#:~:text=Multimedia%20combines%20several%20media%20formats,users%20engage%20with%20the%20information.
- Introduction to Multimedia: https://www.w3schools.com/html/html_media.asp
- Introduction to Flash: https://www.javatpoint.com/what-is-flash#:~:text=Adobe%20Flash%20is%20usually%20installed,of%20disabling%20the%20browser%20extension.
- Introduction-To-Macromedia-Flash-8: https://www.geeksforgeeks.org/introduction-to-macromedia-flash-8/

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:

Dr. H.S. Hota
Chairman

ANJEETA KUJUR

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	AEC-03		
2	Course Title	हिन्दी भाषा–1		
3	Course Type	Ability Enhancement Course		
4	Pre-requisite (if any)	As per requirement		
5	Course Learning Outcome (CLO)	1. विद्यार्थी हिन्दी भाषा एवं व्याकरण संबंधी ज्ञान से समृद्ध होंगे। 2. भाषा ज्ञान के माध्यम से भारतीय संस्कृति एवं भावनात्मक एकता के महत्व को समझने की क्षमता विकसित हो सकेगी। 3. मुहावरे एवं लोकोक्तियों का महत्व समझ सकेंगे। 4. व्यंग्य, निबंध एवं कविता विधा से परिचित होंगे। 5. निबंध लेखन एवं अपठित गंद्याश के माध्यम से विद्यार्थियो का बौद्धिक विकास हो सकेगा।		
6	Credit Value	2 Credits	(01 Credit = 15 Hours - learning & Observation)	
7	Total Marks	Maximum Marks : 50		Minimum 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	**रचनाएं** भारत वंदना – सूर्यकांत त्रिपाठी 'निराला' (कविता) भोलाराम का जीव – हरिशंकर परसाई (व्यंग्य) चोरी और प्रायश्चित – महात्मा गांधी (निबंध)	8
II	**हिन्दी व्याकरण एवं शब्द रचना** उपसर्ग, प्रत्यय, संधि, समास पर्यायवाची शब्द, विलोम शब्द, अनेकार्थी शब्द, समश्रुत शब्द, अनेक शब्दों के लिए एक शब्द	7
III	**हिन्दी व्याकरण एवं रचना पक्ष** मुहावरे एवं लोकोक्तियां पारिभाषिक शब्दावली एवं हिन्दी में पदनाम, शब्द शुद्धि, वाक्य शुद्धि	8
IV	**रचनात्मक लेखन** निबंध लेखन अपठित गद्यांश (नोट विद्यार्थी को किसी एक विषय पर निबंध व प्रदत्त गद्यांश का शीर्षक तथा सारांश लिखना होगा।)	7
Keywords		

Signature of Convener & members (CBoS):

11/6/2024 11/6/2024 11/6/24 11-06-2024

PART -C : Learning Resource
Text Books, Reference Books and Others
1. भारतीयता के अमर स्वर – डॉ. धनंजय वर्मा, मध्यप्रदेश हिन्दी अकादमी 2. आधुनिक हिन्दी व्याकरण और रचना – डॉ. वासुदेव नंदन 3. हिन्दी भाषा और व्यवहार – डॉ. गंगा चरण त्रिपाठी 4. हिन्दी व्याकरण माला – डॉ. के.आर. गहिया, डॉ. विमलेश शर्मा 5. हिन्दी व्याकरण – कामता प्रसाद गुरू
Online Resources -
1 www.bookspace.in 2 https://libgmm.com 3 https://www.gkexams.com

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	
Coninuous Internal Assessment : (CIA) : (By Course Teacher)	Internal Test/Quiz-(2) : 10 & 10 Marks Assignment/Seminar+Attendance - 05 Total Marks 15	Better marks out of the two Text/Quiz obtained marks in assignment shall be considered against 15 Marks
End Semester Exam (ESE) :	Two Section - A&B Section A : Q1 Objective - 05X1=05 Marks Section A : Q2 Short Answer Type - 5X2=10 Marks Section B : Descriptive Answer Type Qts. 1 out of 2 From Each Unit - 4X5=20 Marks Total =35 Marks	

11/6/2024

11/6/24

11-06-2024

11/06/24