RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
TEACHING PLAN
Period : Jan/Aug .... June/Dec ....   YEAR: 2024

Name of the Teacher: Dr. Gayatri Gogoi	**Subject: Chemistry**
Semester : 1st Semester	**Paper code: CHE0100104**
Number of Classes: 08	**Unit 1: Atomic Structure**

Objective of the Lesson:

1. To enlighten the background history of structure of atoms

2. To give the theoretical understanding about the atomic structure and the shapes of different orbitals on the basis of quantum chemistry concepts
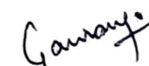
Class No.	Day/Hours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1 hour	• Historical Development of Atomic Structure; Bohr's Model; Hydrogen Atom Spectrum	✓ Overview of the evolution of atomic models, detailed study of Bohr's model, and the significance of the hydrogen atom spectrum.	❖ Offline ☑ ❖ flipped classroom ❖ online 　▪ Recorded video 　▪ Zoom 　▪ Google meet	The student would have clear understanding of ✓ the evolution of atomic models. ✓ Bohr's model and its application to hydrogen atom. ✓ the hydrogen atom spectrum.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia • Inorganic chemistry by Huheey

2nd	1 hour	• Black Body Radiation; Photoelectric Effect (Qualitative Treatment)	✓ Explanation of black body radiation and its significance; qualitative understanding of the photoelectric effect.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	The student would have clear understanding of ✓ the concept of black body radiation. ✓ the photoelectric effect qualitatively.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey
3rd	1 hour	• The Dual Behaviour of Matter and Uncertainty Principle	✓ Introduction to wave-particle duality and Heisenberg's Uncertainty Principle with examples.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ❖ Google meet	The student would have clear understanding of ✓ wave-particle duality. ✓ Heisenberg's Uncertainty Principle	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey
4th	1 hour	• Quantum Mechanical Approach: Concept of Wave Function, Well-behaved Functions, Operators Radial and angular wave functions for hydrogen atom	✓ Introduction to quantum mechanics: wave functions, well-behaved functions, and operators.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom Google meet	The student would have clear understanding of ✓ the basics of quantum mechanics: wave functions, well-behaved functions, and operators.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey
5th	1 hour	• Normalized and Orthogonal Wave Functions; Schrodinger Wave Equation (Qualitative)	✓ Explanation of normalized and orthogonal wave functions; qualitative treatment of Schrodinger wave equation.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom Google meet	The student would have clear understanding of ✓ normalized and orthogonal wave functions. ✓ the basics of the Schrodinger wave equation.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey
6th	1 hour	• Eigenfunction, Significance of Ψ and Ψ^2; Particle in a 1-D Box	✓ Discussion on eigenfunctions and their significance, understanding the significance of $\Psi\backslash Psi\Psi$ and $\Psi 2\backslash Psi^2\Psi 2$, application of Schrodinger equation to a particle in a 1-D box.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom Google meet	The student would have clear understanding of ✓ eigenfunctions and their significance. ✓ the significance of Ψ and Ψ^2. ✓ application Schrodinger equation to a particle in a 1-D box.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey
7th	1 hour	• Schrodinger Equation of Hydrogen Atom (No Derivation); Radial and Angular Wave Functions for Hydrogen Atom; Probability	✓ Detailed discussion on Schrodinger equation applied to hydrogen atom, explanation and visualization of radial and angular wave functions, and understanding probability distribution.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom Google meet	The student would have clear understanding of ✓ the Schrodinger equation applied to hydrogen atom. ✓ radial and angular wave functions for hydrogen atom. ✓ probability distribution.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by

		Distribution					Huheey
8th	1 hour	• Quantum Numbers; Pauli's Exclusion Principle; Hund's Rule of Maximum Multiplicity; Aufbau's Principle and Its Limitations	✓ Explanation of quantum numbers, Pauli's Exclusion Principle, Hund's Rule, Aufbau's Principle, and analysis of the limitations of Aufbau's Principle.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ❖ Google meet	The student would have clear understanding of ✓ the significance of quantum numbers. ✓ Pauli's Exclusion Principle, Hund's Rule, and Aufbau's Principle. ✓ the limitations of Aufbau's Principle.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey

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TEACHING PLAN
Period : Jan/Aug .... June/Dec ....   YEAR: 2024

Name of the Teacher: Dr. Gayatri Gogoi	**Subject: Chemistry**
Semester : 1ˢᵗ Semester	**Paper code: CHE0100104**
Number of Classes: 03	**Unit 2: Periodicity and Chemical Behaviour**

Objective of the Lesson:

The objective is to understand effective nuclear charge, apply Slater's Rule, compare covalent and ionic radii, analyze ionization energies, evaluate electronegativity using various scales, and determine electron affinities

Class No.	Day/Hours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1ˢᵗ	1 hour	• Effective Nuclear Charge and Slater's Rule	✓ Introduction to effective nuclear charge and Slater's Rule for calculating it.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	The student would have clear understanding of ✓ effective nuclear charge. ✓ Slater's Rule.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia • Inorganic chemistry by Huheey
2ⁿᵈ	1 hour	• Covalent and Ionic Radii, Ionization Energies	✓ Discussion on covalent and ionic radii, and the concept of ionization	❖ Offline ☑ ❖ flipped classroom ❖ online	The student would have clear understanding of ✓ covalent and ionic radii.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by

			energies.	▪ Recorded video ▪ Zoom ▪ Google meet	✓ionization energies and their trends		Puri Sharma and Kalia Inorganic chemistry by Huheey
3rd	1 hour	• Electronegativity and Electron Affinities	✓Overview of electronegativity (various scales) and electron affinities.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ❖ Google meet	The student would have clear understanding of ✓electronegativity and its scales. ✓electron affinities and their trends	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey

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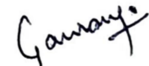Period : Jan/Aug .... June/Dec ....   YEAR: 2024

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Name of the Teacher: Dr. Gayatri Gogoi	**Subject: Chemistry**
Semester : 1st Semester	**Paper code: CHE0100104**
Number of Classes: 04	**Unit 3: Chemical bonding I (ionic interaction)**
Objective of the Lesson: To understanding the key concepts related to ionic compounds and lattice energy.	

Class No.	Day/H ours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1 hour	• General Characteristics of Ionic Compounds	✓Overview of ionic compounds including their formation, properties, and typical examples.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓Understand the nature of ionic bonds. ✓Identify general properties of ionic compounds.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia • Inorganic chemistry by Huheey

2nd	1 hour	• Lattice Energy and Solvation Energy	✓ Introduction to lattice energy and solvation energy, their definitions, and significance.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding of lattice energy and solvation energy. ✓ Understand their roles in ionic compounds.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey
3rd	1 hour	• Born-Lande Equation, Kapustinski Equation, Madelung Constant	✓ Detailed study of the Born-Lande equation, Kapustinski equation, and Madelung constant.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ❖ Google meet	✓ Application of the Born-Lande and Kapustinski equations. ✓ the role of the Madelung constant.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey
4th	1 hour	• Born-Haber Cycle for Lattice Energy Calculation	✓ Explanation of the Born-Haber cycle and its application in calculating lattice energy.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom Google meet	✓ Understanding of the Born-Haber cycle. ✓ Application of the cycle to calculate lattice energy.	✓ Assignment ✓ Test	Books: • Inorganic Chemistry by Puri Sharma and Kalia Inorganic chemistry by Huheey

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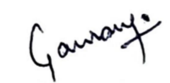## RANGAPARA::SONITPUR::ASSAM
TEACHING PLAN
Period : Jan/Aug .... June/Dec ....   YEAR: 2024

Name of the Teacher: Dr. Gaurango Chakrabarty	**Subject: Chemistry**
Semester : 1ˢᵗ Semester	**Paper code: CHE0100104**
Number of Classes: 04	**Unit 4: Structure of organic molecules**
Objective of the Lesson: To understand hybridization and bonding in organic molecules.	

Class No.	Day/Hours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1ˢᵗ	1 hour	• Nature of Bonding: Introduction to Bonding Theories	✓ Overview of bonding theories including Valence Bond (VB) and Molecular Orbital (MO) approaches.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding of the basic concepts of VB and MO theories.	✓ Assignment ✓ Test	Book: Organic Chemistry by Clayden

2nd	1 hour	• Hybridization of Atomic Orbitals: VB Approach	✓ Introduction to hybridization of atomic orbitals using the Valence Bond (VB) approach.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding of different types of hybridization (sp, sp², sp³) and how hybridization affects bonding.	✓ Assignment ✓ Test	Book: Organic Chemistry by Clayden
3rd	1 hour	• Hybridization of Atomic Orbitals: MO Approach	✓ Exploration of hybridization using the Molecular Orbital (MO) approach and comparison with VB approach.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ❖ Google meet	✓ Understanding the MO approach to hybridization and Comparison between MO and VB approaches.	✓ Assignment ✓ Test	Book: Organic Chemistry by Clayden
4th	1 hour	• Effect of Hybridization on Bond Properties	✓ Analysis of how hybridization influences bond properties such as bond length, bond strength, and bond angles.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom Google meet	✓ Understanding about the impact of hybridization on bond properties. ✓ Analyzing the real-world examples.	✓ Assignment ✓ Test	Book: Organic Chemistry by Clayden

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Period : Jan/Aug .... June/Dec ....   YEAR: 2024

Name of the Teacher: Dr. Gaurango Chakrabarty	**Subject: Chemistry**
Semester : 1st Semester	**Paper code: CHE0100104**
Number of Classes: 08	**Unit 5: Stereochemistry of organic molecules**

Objective of the Lesson:

To understand about the representation, isomerism, and conformation of organic molecules, with a focus on providing both theoretical understanding and practical applications

Class No.	Day/Hours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1 hour	• Representation of Organic Molecules: Fischer Projection	✓ Introduction to Fischer projections, their use, and interpretation.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understand about Fischer projection and interpretation of Fischer projections.	✓ Assignment ✓ Test	• Organic Chemistry by Clayden
2nd	1 hour	• Representation of Organic Molecules: Newman Projections	✓ Overview of Newman projections and their application in visualizing molecular conformations.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understand about Newman projection.	✓ Assignment ✓ Test	Organic Chemistry by Clayden

3rd	1 hour	• Representation of Organic Molecules: Sawhorse Projections	✓Introduction to Sawhorse projections and their usage in 3D molecular visualization.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪Recorded video ▪Zoom ❖ Google meet	✓Understand about the Sawhorse projection, drawing and interpreting Sawhorse projections.	✓ Assignment ✓ Test	Organic Chemistry by Clayden
4th	1 hour	• Interconversions Between Projections	✓Techniques for converting between Fischer, Newman, and Sawhorse projections.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪Recorded video ▪Zoom Google meet	✓Understand about the methods to interconvert between different projection types and application of these techniques in various exercises.	✓ Assignment ✓ Test	Organic Chemistry by Clayden
5th	1 hour	• Geometrical Isomerism: Cis-Trans and Syn-Anti	✓Explanation of geometrical isomerism, including cis-trans and syn-anti notations.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪Recorded video ▪Zoom Google meet	✓Understanding about cis-trans and syn-anti isomerism. ✓examples of isomers.	✓ Assignment ✓ Test	Organic Chemistry by Clayden
6th	1 hour	• Geometrical Isomerism: E/Z Notations	✓Introduction to E/Z notations for identifying geometrical isomers in complex molecules.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪Recorded video ▪Zoom Google meet	✓Understanding about the E/Z notation system.	✓ Assignment ✓ Test	Organic Chemistry by Clayden
7th	1 hour	• Chirality: Enantiomers and Diastereomers	✓Overview of chirality, enantiomers, and diastereomers.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪Recorded video ▪Zoom Google meet	✓ - Understanding about the concept of chirality and the differences between enantiomers and diastereomers.	✓ Assignment ✓ Test	Organic Chemistry by Clayden
8th	1 hour	• Configuration, Conformation, Barriers to Rotation, and Conformational Analysis	✓Analysis of configuration vs. conformation, barriers to rotation, and conformational analysis of ethane, butane, and cyclohexane.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪Recorded video ▪Zoom ❖ Google meet	✓Understanding about the differences between configuration and conformation and analysis of barriers to rotation and perform conformational analysis.	✓ Assignment ✓ Test	Organic Chemistry by Clayden

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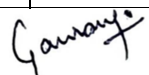## RANGAPARA::SONITPUR::ASSAM
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Period : Jan/Aug .... June/Dec ....   YEAR: 2024
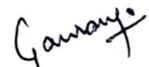
Name of the Teacher: Dr. Gaurango Chakrabarty	**Subject: Chemistry**
Semester : 1st Semester	**Paper code: CHE0100104**
Number of Classes: 03	**Unit 6: Electronic effects in organic molecules**
Objective of the Lesson: To understand electrophiles, nucleophiles, and the related concepts of inductive effects, resonance, conjugation, and delocalisation.	

Class No.	Day/Hours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1 hour	• Concept of Electrophiles and Nucleophiles	✓Introduction to electrophiles and nucleophiles, their definitions, and roles in chemical reactions.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓Understanding about electrophiles and nucleophiles. and their roles in chemical reactions.	✓ Assignment ✓ Test	Books: • Organic Chemistry by Clayden
2nd	1 hour	• Inductive Effects and Resonance	✓Explanation of inductive effects, resonance structures, and their influence on molecular	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video	✓Understanding inductive effects and their impact. ✓Understanding about resonance and how it	✓ Assignment ✓ Test	Books: Organic Chemistry by Clayden

				Zoom Google meet	affects molecular stability.		
3rd	1 hour	• Conjugation and Delocalisation	✓Overview of conjugation, delocalisation, and their effects on molecular properties and stability.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ❖ Google meet	✓Understanding about the concepts of conjugation and delocalization and their influence on molecular stability and reactivity.	✓ Assignment ✓ Test	Books: Organic Chemistry by Clayden

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Period : Jan/Aug .... June/Dec ....   YEAR: 2024

Name of the Teacher: Dr. Kiranjyoti Mohan	**Subject: Chemistry**
Semester : 1st Semester	**Paper code: CHE0100104**
Number of Classes: 08	**Unit 7: Gaseous state**
Objective of the Lesson: **To understand the essential concepts related to real gas behavior, including the derivation and application of key equations.**	
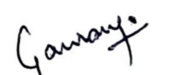
Class No.	Day/Hours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1 hour	• Deviation from Ideal Gas Behavior	✓ Introduction to why real gases deviate from ideal gas behavior.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding about the reasons for deviation from ideal behavior.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins

2nd	1 hour	• Compressibility Factor (Z) and Its Variation	✓ Explanation of the compressibility factor (Z), its calculation, and how it varies with pressure and temperature.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding of compressibility factor (Z) and its variation with pressure and temperature.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
3rd	1 hour	• State Variables and Equations of State for Real Gases	✓ Overview of state variables and equations of state used for real gases.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding about state variables and their role in describing real gases also about the different equations of state.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
4th	1 hour	• van der Waals Equation of State: Derivation and Application	Detailed study of the van der Waals equation, including its derivation and application in explaining real gas behavior.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding of how to derive the van der Waals equation and its application in real gas.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
5th	1 hour	• Failure of van der Waals Equation and Pressure-Volume Isotherm	✓ Reasons for the failure of the van der Waals equation in certain conditions and interpretation of the van der Waals pressure-volume isotherm.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ The limitations of the van der Waals equation ✓ Analysis of the pressure-volume isotherms.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
6th	1 hour	• Critical State and Phenomena	✓ Introduction to the critical state and phenomena, including mathematical definition and interpretation of the critical point.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ The critical state and critical point and critical phenomena.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins

7th	1 hour	• Relation Between Critical Constants and van der Waals Constants	Study of the relationship between critical constants and van der Waals constants, along with their thermodynamic interpretation.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ The relationship between critical and van der Waals constants. ✓ Interpretation of these constants thermodynamically.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
8th	1 hour	• Introduction to Virial Equation and Virial Coefficients; Boyle Temperature	✓ Overview of the virial equation and coefficients, including the derivation of Boyle temperature.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ The virial equation and its coefficients. ✓ Derivation and knowledge about Boyle temperature.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins

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TEACHING PLAN
Period : Jan/Aug .... June/Dec ....   YEAR: 2024

Name of the Teacher: Dr. Kiranjyoti Mohan	**Subject: Chemistry**
Semester : 1st Semester	**Paper code: CHE0100104**
Number of Classes: 07	**Unit 8: Liquid state**
Objective of the Lesson: **To understand the liquid state properties, their measurement, and practical applications, including the role of detergents in cleaning**	

Class No.	Day/Hours alloted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1 hour	• Structure of the Liquid State	✓ Qualitative treatment of the structure of liquids, including intermolecular forces and arrangement.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Understanding about the molecular structure and forces in liquids.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins

2nd	1 hour	• Vapor Pressure of Liquids	✓ Explanation of vapor pressure, how it is measured, and its significance.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ vapor pressure. ✓ how to measure and interpret it.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
3rd	1 hour	• Surface Tension and Coefficient of Viscosity	✓ Overview of surface tension and viscosity, including their definitions and methods of determination.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ surface tension and viscosity. ✓ methods to measure these properties.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
4th	1 hour	• Temperature Variation of Viscosity and Comparison with Gases	Study of how viscosity changes with temperature and comparison with gas viscosity.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ The temperature dependence of viscosity. ✓ Comparison between liquid and gas viscosities.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
5th	1 hour	• Effect of Solutes on Surface Tension and Viscosity	✓ Analysis of how different solutes affect the surface tension and viscosity of liquids.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Influence of solutes in surface tension and viscosity. ✓ Understanding about the mechanisms behind these effects.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins
6th	1 hour	• Cleansing Action of Detergents: Micelle Formation	✓ Explanation of micelle formation and critical micelle concentration (CMC) in detergents.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Micelle formation and its role in cleaning. ✓ critical micelle concentration.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins

7th	1 hour	• Review and Application of Concepts	Review of all concepts covered, with applications and problem-solving exercises.	❖ Offline ☑ ❖ flipped classroom ❖ online ▪ Recorded video ▪ Zoom ▪ Google meet	✓ Action of detergent.	✓ Assignment ✓ Test	Books: • Physical Chemistry by Puri Sharma and Pathania • Physical Chemistry by P. Atkins

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PERIOD: AUGUST TO DECEMBER   YEAR:2024
TEACHING PLAN
DEPARTMENT OF MATHEMATICS

Course Name: Programming in Mathematica (SEC)|| Credits : 3 || Credit Distribution: 2(Theory) + 1 (Practical)|| 2 lectures, 1 practical per week
Course Coordinator: Parishmita Boruah

Name of the Teacher: 1. Parishmita Boruah (PB) 2. Dr. Azizul Hoque (AH)	Subject: Mathematics
Semester: 3	Unit-I
Number of Classes: 12	Class Distribution/Week: 2(Theory: PB) +1(Practical: AH)

Objective of the Lesson: This course aims at familiarizing students with the usage of the Computer Algebra System Mathematica. The basic emphasis is on plotting and working with matrices using Mathematica.

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-1	Day-1 1 hour	Unit-I Introduction to Mathematica as a Calculator	Overview of Mathematica; using Mathematica for basic arithmetic operations; working with symbolic calculations.	Lecture, Demonstration, Discussion	Understand how to perform basic and symbolic calculations in Mathematica.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session	Torrence & Torrence (2009), Chapter 1
	Day-2 1 hour	Unit-I Computing and Plotting Functions in 2D	Plotting single-variable functions; customizing 2D plots (labels, styles); plotting multiple functions on the same graph.	Interactive demonstration, Hands-on practice	Create and customize 2D plots in Mathematica; overlay multiple functions on a single graph.		Torrence & Torrence (2009), Chapter 2
	Day-3 1 hour	Unit-I Practical Class	Hands-on practice with calculator functions; creating and customizing 2D plots.	Guided exercises, Q&A	Apply basic operations and 2D plotting techniques; troubleshoot common errors.		Torrence & Torrence (2009), Chapter 2

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PERIOD: AUGUST TO DECEMBER   YEAR:2024
TEACHING PLAN
DEPARTMENT OF MATHEMATICS

Course Name: Programming in Mathematica (SEC)|| Credits : 3 || Credit Distribution: 2(Theory) + 1 (Practical)|| 2 lectures, 1 practical per week

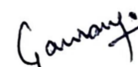|	
Name of the Teacher: 1. Parishmita Boruah (PB) 2. Dr. Azizul Hoque (AH)	**Subject: Mathematics**
Semester: 3	**Unit-I**
Number of Classes: 12	**Class Distribution/Week: 2(Theory: PB) +1(Practical: AH)**

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-2	Day-1 1 hour	Unit-I Plotting Functions of Two Variables Using Plot3D	Understanding 3D plots; creating basic 3D plots with Plot3D; customizing 3D plots (color, opacity, style).	Lecture, Interactive demonstration	Generate 3D plots and apply customization options in Mathematica.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session	Torrence & Torrence (2009), Chapter 3
	Day-2 1 hour	Unit-I Contour Plots and Parametric Curves	Creating contour plots for visualizing functions; plotting parametric curves in 2D and 3D.	Demonstration, Hands-on practice	Understand and create contour plots and parametric curves in Mathematica.		Torrence & Torrence (2009), Chapter 3
	Day-3 1 hour	Unit-I Practical Class	Practical exercises in generating 3D plots and contour plots; plotting parametric curves and customizing them.	Guided exercises, Group discussion	Apply 3D plotting and parametric curve techniques; enhance plotting skills with practical examples.		Torrence & Torrence (2009), Chapter 3

Signature of the Teacher   Signature of the HOD

TEACHING PLAN
DEPARTMENT OF MATHEMATICS

Course Name: Programming in Mathematica (SEC)|| Credits : 3 || Credit Distribution: 2(Theory) + 1 (Practical)|| 2 lectures, 1 practical per week

Name of the Teacher: 1. Parishmita Boruah (PB) 2. Dr. Azizul Hoque (AH)	Subject: Mathematics
Semester: 3	Unit-I
Number of Classes: 12	Class Distribution/Week: 2(Theory: PB) +1(Practical: AH)

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-3	Day-1 1 hour	Unit-I Customizing Plots	Advanced plot customizations (legends, annotations); working with styles and themes in plots.	Interactive demonstration, Hands-on practice	Enhance plot readability and presentation using advanced customization options in Mathematica.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session	Torrence & Torrence (2009), Chapter 4
	Day-2 1 hour	Unit-I Animating Plots	Creating animated plots; setting up dynamic visualizations for changing parameters.	Lecture, Demonstration, Hands-on practice	Develop animated visualizations to illustrate mathematical concepts dynamically in Mathematica.		Torrence & Torrence (2009), Chapter 4
	Day-3 1 hour	Unit-I Practical Class	Hands-on practice in customizing and animating plots; working on student-generated examples.	Guided exercises, Peer feedback	Apply customization and animation techniques in a practical setting; critique and improve peer-generated examples.		Torrence & Torrence (2009), Chapter 4

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RANGAPARA COLLEGE
RANGAPARA:: SONITPUR::ASSAM
PERIOD: AUGUST TO DECEMBER   YEAR:2024
TEACHING PLAN
DEPARTMENT OF MATHEMATICS
Course Name: Programming in Mathematica (SEC)|| Credits : 3 || Credit Distribution: 2(Theory) + 1 (Practical)|| 2 lectures, 1 practical per week

Name of the Teacher: 1. Parishmita Boruah (PB) 2. Dr. Azizul Hoque (AH)	**Subject: Mathematics**
Semester: 3	**Unit-I**
Number of Classes: 12	**Class Distribution/Week: 2(Theory: PB) +1(Practical: AH)**

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-4	Day-1 1 hour	Unit-I Producing Tables of Values	Generating tables of values for functions; using Table, Grid, and other commands for data representation.	Lecture, Demonstration, Hands-on practice	Create tables of function values and organize data effectively in Mathematica.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session	Torrence & Torrence (2009), Chapter 5
	Day-2 1 hour	Unit-I Working with Piecewise-Defined Functions	Defining piecewise functions; plotting and analyzing piecewise functions; applications in various contexts.	Demonstration, Guided exercises	Define and manipulate piecewise functions; plot them effectively to showcase discontinuities or specific behaviors.		Torrence & Torrence (2009), Chapter 5
	Day-3 1 hour	Unit-I Practical Class	Practical exercises in creating tables and working with piecewise functions; problem-solving session.	Guided exercises, Group problem-solving	Implement techniques for creating tables and defining piecewise functions; solve real-world problems using these methods.		Torrence & Torrence (2009), Chapter 5

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RANGAPARA COLLEGE
RANGAPARA:: SONITPUR::ASSAM
PERIOD: AUGUST TO DECEMBER   YEAR:2024
TEACHING PLAN
DEPARTMENT OF MATHEMATICS

Course Name: Programming in Mathematica (SEC)‖ Credits : 3 ‖ Credit Distribution: 2(Theory) + 1 (Practical)‖ 2 lectures, 1 practical per week

Name of the Teacher: 1. Dr. Saswati Purkayastha (SP) 2. Dr. Azizul Hoque (AH)	**Subject: Mathematics**
Semester: 3	**Unit-II**
Number of Classes: 12	**Class Distribution/Week: 2(Theory: SP) +1(Practical: AH)**

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-5	Day-1 1 hour	Unit-II Introduction to Simple Programming in Mathematica	Basic programming constructs (variables, loops, and conditionals) in Mathematica.	Lecture, Live coding demonstration	Understand basic programming structures in Mathematica and write simple scripts.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session	Torrence & Torrence (2009), Chapters 6, 7
	Day-2 1 hour	Unit-II Functions and Procedures in Mathematica	Writing and using functions; understanding built-in functions and creating custom functions.	Guided practice, Interactive coding	Write and use custom functions; distinguish between built-in and user-defined functions.		Torrence & Torrence (2009), Chapter 8
	Day-3 1 hour	Unit-II Practical Class	Basic Programming Practice	Hands-on lab session, Peer learning	Apply simple programming concepts in a practical setting; develop basic scripts to automate tasks in Mathematica.		Torrence & Torrence (2009)

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RANGAPARA COLLEGE
RANGAPARA:: SONITPUR::ASSAM
PERIOD: AUGUST TO DECEMBER   YEAR:2024
TEACHING PLAN
DEPARTMENT OF MATHEMATICS

Course Name: Programming in Mathematica (SEC)‖ Credits : 3 ‖ Credit Distribution: 2(Theory) + 1 (Practical)‖ 2 lectures, 1 practical per week

Name of the Teacher: 1. Dr. Saswati Purkayastha (SP) 2. Dr. Azizul Hoque (AH)	**Subject: Mathematics**
Semester: 3	**Unit-II**
Number of Classes: 12	**Class Distribution/Week: 2(Theory: SP) +1(Practical: AH)**

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-6	Day-1 1 hour	Unit-II Performing Gauss Elimination	Steps to perform Gauss elimination in Mathematica; solving linear systems.	Lecture, Step-by-step tutorial	Solve systems of linear equations using Gauss elimination method in Mathematica.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session	Bindner & Erickson (2011), Chapter 4
	Day-2 1 hour	Unit-II Matrix Operations: Transpose, Determinant, Inverse	Calculating transpose, determinant, and inverse of matrices in Mathematica.	Demonstration, Guided exercises.	Perform matrix operations and understand their mathematical significance in solving problems.		Torrence & Torrence (2009), Chapter 9
	Day-3 1 hour	Unit-II Practical Class	Matrix Operations Practice	Hands-on lab session, Collaborative tasks	Apply matrix operations in Mathematica to solve practical problems and verify results.		Bindner & Erickson (2011), Exercises

Signature of the Teacher   Signature of the HOD

Course Name: Programming in Mathematica (SEC)|| Credits : 3 || Credit Distribution: 2(Theory) + 1 (Practical)|| 2 lectures, 1 practical per week

Name of the Teacher: 1. Dr. Saswati Purkayastha (SP) 2. Dr. Azizul Hoque (AH)	**Subject: Mathematics**	
Semester: 3	**Unit-II**	
Number of Classes: 12	**Class Distribution/Week: 2(Theory: SP) +1(Practical: AH)**	

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-7	Day-1 1 hour	Unit-II Minors and Cofactors	Definition and calculation of minors and cofactors in matrices; their role in matrix algebra.	Lecture, Worked examples	Compute minors and cofactors; understand their use in matrix operations and determinants.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session • Practical Project	Torrence & Torrence (2009), Chapter 10
	Day-2 1 hour	Unit-II Working with Large Matrices	Techniques for handling large matrices in Mathematica, including memory management tips.	Lecture, Interactive session.	Manage and manipulate large matrices efficiently in Mathematica.		Torrence & Torrence (2009), Chapter 11
	Day-3 1 hour	Unit-II Practical Class	Working with Large Matrices	Lab session	Implement strategies to work with large matrices and analyze their properties using Mathematica tools.		- Bindner & Erickson (2011), Exercises

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TEACHING PLAN
DEPARTMENT OF MATHEMATICS

Course Name: Programming in Mathematica (SEC)|| Credits : 3 || Credit Distribution: 2(Theory) + 1 (Practical)|| 2 lectures, 1 practical per week

Name of the Teacher: 1. Dr. Saswati Purkayastha (SP) 2. Dr. Azizul Hoque (AH)	Subject: Mathematics
Semester: 3	Unit-II
Number of Classes: 12	Class Distribution/Week: 2(Theory: SP) +1(Practical: AH)

Week	Day/Hours allotted	Topic/Unit	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
Week-8	Day-1 1 hour	Unit-II Solving System of Linear Equations	Techniques for solving systems of linear equations; using built-in functions in Mathematica.	Lecture, Interactive problem solving.	Solve different types of linear systems using Mathematica, both exact and numerical solutions.	• Class participation, Q&A • Quiz • Assignment • Practical demonstration • Feedback session	- Torrence & Torrence (2009), Chapter 12
	Day-2 1 hour	Unit-II Rank and Nullity of a Matrix	Concepts of rank and nullity; calculating rank and nullity using Mathematica.	Demonstration, Interactive discussion	Calculate the rank and nullity of matrices and understand their implications in solving linear systems.		Torrence & Torrence (2009), Chapter 13
	Day-3 1 hour	Unit-II Practical Class	Solving Linear Equations and Matrix Analysis	Hands-on practice, Problem-solving	Apply learned methods to solve linear equations and analyze matrix properties effectively in Mathematica.		- Torrence & Torrence (2009), Exercises

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RANGAPARA COLLEGE
RANGAPARA:: SONITPUR::ASSAM
TEACHING PLAN
DEPARTMENT OF EDUCATION
Period : June/Dec   YEAR: 2023

Name of the Teacher: Sangeeta Kalita	Subject: Education
Semester : II (Major/Minor)	Paper code: EDU0100104
Number of Classes: 6	Unit: I (Psychology and Education)

Objective of the Lesson:
 a) To understand the application of Psychology in Education
 b) To understand the Methods, Branches and Scope of Educational Psychology.

Week	Day/Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	6	History of Psychology, Meaning and Methods of Educational Psychology	History of Psychology	Lecture Method Demonstration through Visual Aids	Students will get knowledge on the historical perspective of Psychology	Open Text-Book Test	Books, Articles
			Meaning of Educational Psychology	Lecture Method Discussion Method	Students will understand the conceptual base of Educational Psychology	Evaluation of Descriptive answers Through Class Test Evaluation of Objective answers through Quiz	E-Books

		Methods of Educational Psychology	Discussion Method	Students will get to know about the methods and implications of Educational Psychology	Class test for both Objectives and Descriptive Answer writing	Books

Sangeeta Kalita

Signature of the Teacher

Sangeeta Kalita

Signature of the HOD

TEACHING PLAN

Name of the Teacher: Monika Gohain	Subject: Education
Semester : I (Major/Minor)	Paper code: EDU0100104
Duration/Time : 3 months	Paper Name: Principles of Education
Number of Classes: 18	

OBJECTIVES OF THE PAPER

1. **To acquaint the students with the sound principles of education.**
2. **To acquaint the students with the important concepts of Education, Curriculum, Democracy, Discipline and Freedom.**

STEPS	TEACHING POINTS	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES (Teacher will record the responses of the students after the end of the Class)	EXPECTED OUTCOME
INTRODUCTION	• Meaning, scope and forms of education • Aims of education – Social, Individual, Vocational and Liberal • Democracy in Education	To test the previous knowledge of the student and in order to motivate them, the teacher put them the following questions: 1. Do you have any idea of formal education? 2. What do you mean by democracy? After testing the previous knowledge the teacher will announced the topic and will write the topic on the black-board.	The pupils will try to give the answers of the questions that is to be asked by the teacher.	Students will get interested to know something about the different concepts of education.

STEP	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES	EXPECTED OUTCOME
PRESENTATION	• Meaning, scope and forms of education • Aims of education – Social, Individual, Vocational and Liberal • Democracy in Education	The teacher will present a lecture on the particular topics and discuss over the matter along with the students in addition to this he/she will ask questions relevant to the topic to the students for active participation of the students.	The students will attentively listen to the teacher actively and write down the important topics that has been discussed by the teacher regarding the topic.	The learners will properly understand the topic and gain some information about the topic.

STEP	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES	EXPECTED OUTCOME
CLOSURE	After this, the teacher will sum up the class by giving a summary of the lesson. Then the teacher will give the students definite home assignments regarding the lesson.	The students will listen carefully to the teacher and will try to clarify their doubts regarding the lesson. The students will note down the questions of the home assignment in their respective notebooks.	Students will acquaint with the sound principles of education, aims of education and role of democracy in education.

Monika Gohain

Signature of the Teacher

Sangeeta Kalita

Signature of the HoD

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
CURRICULUM DELIVERY PLANNING
Period : August YEAR: 2023

Name of the Teacher: MALABIKA KALITA   **Subject: ECONOMICS**

Semester: I (FYUGP) PAPER NAME-INTRODUCTORY ECONOMICS /DATA COLLECTION AND PRESENTATION   **Paper code: ECO0100104/ SEC0102603**
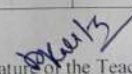
Number of Classes: Sem I : 8   **Unit: 2&3 (Major &Minor)- 2 (SEC)**

Objective of the Lesson: To expose the students to the basic idea of microeconomics, macroeconomics and to let know students about questionnaire, interview schedule and their uses for collecting real life data. The emphasis will be on thinking like an economist and the course will illustrate how the concepts of microeconomics and macroeconomics can be applied to analyze real life situations.

Week	Day/Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	Sem I : 2 hrs	Sem I(Major/Minor): Unit- 2 (Topic Discussed: Market and its role in the Economy)	Individual Supply & Market Supply, Price determination in the competitive market, Stability of the competitive market equilibrium, Consumers' & producers' surplus and efficiency of the market equilibrium.	Lecture Method	Students will get to know different concepts behind Market and its role.	Class Test/ Home Assignment/ Quiz/ Projects	H.L.Ahuja (Principles of Microeconomics)
		Sem I(SEC): Unit-2 (Topic: Questionnaires and Schedules)	Meaning, how to prepare a questionnaire.	Demonstration Method	Students will have the idea of how to prepare a questionnaire		Dr. S.P.Gupta (Statistical Methods)
2nd	Sem I : 2 hrs	Sem I(Major/Minor): Unit- 3 (Topic: National income & its measurements)	From Microeconomics to Macroeconomics, Income (Hick's Definition), Domestic and National income.	Lecture Method	Students can learn the aggregate concepts related to Domestic income and National	Class Test/ Home Assignment/ Quiz/ Group Discussion/Projects	H.L.Ahuja (Principles of Microeconomics)

		Sem I(SEC): Unit-2 (Topic:Questionnaires and Schedules)	How to prepare an interview schedule	Demonstration Method	Income. Students will know how to prepare Interview schedule and know how it is different from Questionnaire.		Dr. S.P.Gupta (*Statistical Methods*)
3rd	Sem I : 2 hrs	Sem I(Major/Minor): Unit- 3 (Topic: National income & its measurements)	GNP & its measurements, Circular flow of income, NDP at factor as domestic income.	Flipped learning Method	Students will understand the concept of GNP and its measurement, NDP etc.	Class Test/ Home Assignment/ Quiz/ Group Discussion/Projects	H.L Ahuja (Macroeconomics: Theory & Policy)
		Sem I(SEC): Unit-2 (Topic: Questionnaires and Schedules)	Use of Questionnaire for data collection	Demonstration Method	Students will know how the questionnaire can be used for collecting data.		Dr. S.P.Gupta (*Statistical Methods*)
4th	Sem I : 2 hrs	Sem I(Major/Minor): Unit- 3 (Topic Discussed: National income & its measurements)	Personal & Disposable income, PPP, Concept of Unemployment, Inflation and recession, BOP-Current and Capital Accounts.	Lecture/ Flipped learning Method	Students will learn about different macro variables, their workings in the real world.	Class Test/ Home Assignment/ Quiz/ Group Discussion/Projects	H.L Ahuja (Macroeconomics: Theory & Policy)
		Sem I(SEC): Unit-2 (Topic Discussed:Questionnaires and Schedules)	Use of interview schedule for data collection.	Demonstration Method	Students will know the how the interview schedule can be used for collecting data		Dr. S.P.Gupta (*Statistical Methods*)

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
CURRICULUM DELIVERY PLANNING
Period : August- December YEAR: 2023

Name of the Teacher: Monindro Hojai

Semester : I (FYUGP) INTRODUCTORY ECONOMICS & DATA COLLECTION AND PRESENTATION	Subject: ECONOMICS
	Paper code: ECO0100104/ SEC0102603
Number of Classes: Sem I: 8	
	Unit:1&2 (Major/Minor) & 2(SEC)

Objective of the Lesson: To expose the students to the basic idea of Microeconomics, Macroeconomics and Public Finance. The emphasis will be on thinking like an Economist and the course will illustrate how the concepts of Microeconomics, Macroeconomics and Public Finance can be applied to analysis real life situation.
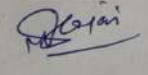
Week	Day/Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1"	2Days/2Hrs	Sem I(Major/Minor): Unit-1(Topic- The Essence of the economic problem)	Definition of Scarcity, problem of choice, Alternative usability of resources, Optimization by an economic agent, The notion of Opportunity cost	Lecture Method and Inquiry Based Method	Students after studying the key concepts of topic they will able to think critically about economic issues, make informed decisions, and understand the broader implications of economic choices.	Quiz, Class Test	H.L. AHUJA (Modern Microeconomics) Dr. S Chaudhuri& Lakshay Sharma (Principles of microeconomics)
		Sem I(SEC): Unit-3 (Topic Discussed: Presentation of data)	Data presentation in tabular formats, use of diagrams for data presentation.		Students after studying the presentation of data they will able to understand different types of data, analyze and draw conclusion from data presented in various formats.		S.C. GUPTA (Fundamental of Statistics

2nd	2Days/ 2Hrs	Sem-I I(Major/Minor): Unit-1(Topic- The Essence of the economic problem)	The notions of Individuals demand and supply, Individual Demand function, Demand curve & the law of demand, Shift of demand curve, the idea and calculation of elasticity.	Discussion method/Lecture Method	Students after studying the key concepts of topic they will able to think critically about economic issues, make informed decisions, and understand the broader implications of economic choices.	Home Assignment, Group Discussion.	H.L. AHUJA (Modern Microeconomics) Dr. S Chaudhuri& Lakshay Sharma (Principles of microeconomics)
		Sem I(SEC): Unit 3(Topics: Presentation of Data)	Creating Charts & Diagrams in MS Excel, Bar line.		Students after studying the presentation of data they will able to understand different types of data, analyze and draw conclusion from data presented in various formats.		S.C. GUPTA (Fundamental of Statistics)
3rd	2Days/ 2Hrs		Price, income & Cross Elasticity and their significance, cost of production and supply, Elasticity of supply	Flipped class room method/Lecture method	Students after studying the key concepts of topic they will able to think critically about economic issues, make informed	Home Assignment, Group	H.L. AHUJA (Modern Microeconomics)

	Sem I (Major & Minor) Unit 1(Topics: The Essence of the Economic Problem)	Pie, Scatter, Radar		decisions, and understand the broader implications of economic choices.	Discussion, Class Test	Dr. S Chaudhuri& Lakshay Sharma (Principles of microeconomics)
	Sem I(SEC): Unit 3(Topics: Presentation of Data)			Students after studying the presentation of data they will able to understand different types of data, analyze and draw conclusion from data presented in various formats.		S.C. GUPTA (Fundamental of Statistics)
2Days/ 2Hrs	Sem I(Major/Minor): Unit-2(Topic- Market and its role in the economy)	Market & its Different Forms-Perfectly competitive market vs Monopoly. Individual and Market demand.	Flipped class room method/Lecture method/Discussion method.	Students after studying the key concepts of topic they will able to think critically about economic issues, make informed decisions, and understand the broader implications of economic choices.	Home Assignment, Group Discussion, Class Test, Quiz method.	H.L. AHUJA (Modern Microeconomics) Dr. S Chaudhuri& Lakshay Sharma (Principles of microeconomics)

	Sem I(SEC): Unit 3(Topics: Presentation of Data))	Bubble Diagram, population Pyramids.		Students after studying the presentation of data they will able to understand different types of data, analyze and draw conclusion from data presented in various formats.	S.C. GUPTA (Fundamental of Statistics)

Signature of the Teacher

Monindro Hojai

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
TEACHING PLAN
Period : Aug 2023 Dec 2023   YEAR: 2023

Name of the Teacher: Dr. Nupam Kumar palit	**Subject: Commerce Application in Business**
Semester : 3rd Semester	**Paper code: COM-HC-3016**
Number of Classes:	**Word Processing**
Objective of the Lesson: To provide computer skills and knowledge for commerce students and to enhance the student understands of usefulness of information technology tools for business operations.	

Week	Days allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	3	MS Word	Introduction to word Processing, Word processing concepts, Use of Templates, Working with word document: Editing text, Find and replace text, Formatting, spell check, Autocorrect, Autotext; Bullets and numbering, Tabs, Paragraph Formatting, Indent, Page Formatting, Header and footer, Tables	Presentation with the help of Projector	Learners will acquire the skills to efficiently create, edit, format, and manage word documents	Evaluation strategies can include practical assessments, such as creating and formatting documents, inserting tables and multimedia, and performing mail merges. Additionally, quizzes and scenario-based tasks can be used to test understanding and application of word processing skills.	1. Computer Application in Business by R Parameswaran

2. Taxmann's Computer Applications in Businessby Hem Chand Jain, H.N. Tiwari |
| 2nd | 3 | MS Word | Practical of the teaching points will be done | At the computer Lab | | | |

3rd Week	3	MS Word	Inserting, filling and formatting a table; Inserting Pictures and Video; Mail Merge: including linking with Database; Printing documents	Presentation with the help of Projector	Learners will develop the ability to insert and format tables, embed multimedia, perform mail merges, and print documents efficiently with database integration.		
4th Week	3		Practical of the teaching points will be done	At the computer Lab			

DEPARTMENT OF BOTANY, RANGAPARA COLLEGE

Detailed Lesson Plan (June 2023 - May 2024)

Natural Resource Management
Name of the Teacher: Ratan Chowdhury

Subject: Botany

Semester: V

Paper Code: BOT-HE-5016

Number of Classes: 60

Objective of the Lesson:
- To understand the significance of natural resources and their sustainable management.

- To analyze the types of natural resources and their conservation methods.

- To develop awareness of environmental policies and resource use ethics.

Weekly Lesson Distribution

Week	Day/Hours Allotted	Topics	Content/Teaching Points	Teaching Methods	Evaluation Strategies
1st	6 Days	Introduction	Definition, importance, and scope of natural resource management; types of natural resources.	PPT, Whiteboard, Discussions	Quizzes, Q&A sessions
2nd-4th	18 Days	Forest Resources	Forest types, economic importance, deforestation	Case studies, field visits, interactive PPTs	Field reports, presentations

			causes, conservation methods.		
5th-6th	12 Days	Water Resources	Water cycle, scarcity issues, management of surface and groundwater.	Diagrams, discussions, group activities	Conceptual assignments, quizzes
7th-8th	12 Days	Soil and Mineral Resources	Soil types, erosion, restoration techniques; sustainable mineral extraction.	Demonstrations, soil analysis practicals	Practical evaluations, assignments
9th-10th	12 Days	Environmental Policies	Legislation on resource use, global efforts for conservation, ethics.	PPTs, policy discussions, debates	Debates, case-based evaluations

Horticultural Practices and Post-Harvest Technology

Name of the Teacher: Subham Roy

Subject: Botany

Semester: V

Paper Code: BOT-HE-5026

Number of Classes: 60

Objective of the Lesson:
- To understand the significance of horticulture in economic and social contexts.

- To learn practical methods of horticulture and post-harvest management techniques.

- To apply horticultural practices to enhance crop quality and yield.

Weekly Lesson Distribution

Week	Day/Hours Allotted	Topics	Content/Teaching Points	Teaching Methods	Evaluation Strategies
1st	6 Days	Introduction to Horticulture	Definition, importance, and branches of horticulture.	PPT, Whiteboard	Short quizzes, open-ended Q&A
2nd-	18 Days	Nursery	Seedling	Practical	Field activity

4th		Management	production, transplanting techniques, greenhouse management.	demonstrations, videos	reports, tests
5th-6th	12 Days	Harvesting Techniques	Timely harvesting, tools, and machinery.	Demonstrations, group discussions	Practical evaluations
7th-8th	12 Days	Post-Harvest Technology	Storage conditions, preservation techniques, transportation.	Interactive PPTs, practical lessons	Assignment-based evaluations
9th-10th	12 Days	Market Linkages	Connecting producers to markets, value addition.	Case studies, role-playing activities	Group presentations, discussions

Plant Physiology

Name of the Teacher: Hangma Boro

Subject: Botany

Semester: V

Paper Code: BOT-HC-5026

Number of Classes: 60

Objective of the Lesson:

- To study physiological processes in plants and their role in growth and development.

- To analyze water relations, photosynthesis, and nutrient uptake in plants.

Weekly Lesson Distribution

Week	Day/Hours Allotted	Topics	Content/Teaching Points	Teaching Methods	Evaluation Strategies
1st	4 Days	Introduction to Plant Physiology	Overview of plant physiological processes and their importance.	Whiteboard, PPT	Quizzes, Q&A sessions
2nd-4th	12 Days	Water Relations	Transpiration, osmosis, water potential, and absorption.	Diagrams, animations, practical experiments	Practical evaluations, diagram-based quizzes

5th-6th	12 Days	Photosynthesis	Mechanisms, adaptations, and factors affecting photosynthesis.	Interactive lessons, videos	Assignments, concept-based tests
7th-8th	12 Days	Nutrient Uptake	Mechanisms of nutrient absorption and transport in plants.	Practical experiments, discussions	Lab reports, practical tests
9th-10th	12 Days	Stress Physiology	Plant responses to abiotic and biotic stresses.	Case studies, problem-solving activities	Group projects, case-based evaluations

Signature of HOD

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
TEACHING PLAN
Period: YEAR: 2023

Name of the Teacher: Ruksana Sultana Ahmed	Subject: Evolutionary biology
Semester: 6th semester	Paper code: 6016
Number of Classes: 13	Unit: 6
Objective of the Lesson: To learn about population dynamics	

Week	Day/ Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st and 2nd	4 hr	Hardy-Weinberg Law	• Statement • Derivation of equation • Application of law with eg • Forces upsetting HW law	Board and marker, YouTube video, google photos	To understand calculation of population dynamics	By random questioning, MCQs, letting the students to explain onboard themselves	Notes, pdf
3rd and 4th	6 hr	Natural selection	• Concept of fitness • Selection coefficient • Genetic load • Types of selection • Heterozygous superiority • Kin selection		To have a clear idea about the mechanism of natural selection		
5th and 6th	3 hr	Genetic drift	• Mechanism • Founder effect • Bottle neck phenomena • Changing allele frequencies		To know about mechanism of genetic drift and changes occurs after the process		

Signature of the Teacher

Signature of the HOD

HOD
Department of Zoology
Rangapara College
Sonitpur, Assam

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period: October to January

Name of the Teacher: Niku Chetia	Subject: ENGLISH
Semester : I	Paper code: 1016
	Unit: European Classical literature

GENERAL OBJECTIVES OF THE LESSON

1.The paper saw the emergence of traditions that cut across many genres, which included poetry, theatre, and general discourses. It incorporates discussions on epic and drama. It is this enriching literary tradition that this paper seeks to familiarize with through the study of representative texts belonging to the classical period.

STEPS	TEACHING POINTS	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES (Teacher will record the responses of the students after the end of the Class)	EXPECTED OUTCOME
INTRODUCTION	It is assumed that the students have some basic ideas about Indian classical drama and their popularity.	>Life of Homer, his influence and relevance, question of authorship >Epic as a genre >Homeric society >idea of heroism >Homeric gods >Trojan war >use of the Carnivalesque >dramaturgy of Aristophanes and Menander >class society of Ancient Rome	The students attentively listen to the teacher actively and write down the important topics that has been discussed by the teacher regarding the topic.	The students received the knowledge that Horace drew attention to the purposefulness of the creative exercise
PRESENTATION	Presentation on the Epic with examples of different texts.	They question the teachers regarding the presented topic.	It seeks to familiarize with through the study of representative texts belonging to the Classical period.	The widely divergent compositions of Sophocles and Plautus respectively showed the consolidation of a rich cultural discourse.

STEP	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES	EXPECTED OUTCOME
CLOSURE	❖ Oral Test: Comment on the widely divergent compositions by Sophocles.	The students found it easy to understand with the divergent compositions mentioned.	The students saw the rich consolidation of a rich cultural discourse.

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN

Name of the Teacher: Dr. Pamela Sarmah	Subject: ENGLISH
Semester : I	Paper code:ENG-HC- 1016
	Indian classical literature

GENERAL OBJECTIVES OF THE LESSON

1.Indian classical literature offers a rich and diverse canvas that spans across genres like drama, poetry, epic narrative as well as short fictional fables, to name a few, it is essential that students studying English literature are familiar with at least a few of these.

SPECIFIC OBJECTIVES OF THE LESSON (IF ANY)

1. This paper encourages students to think laterally about literatures of the world and the possibility of cultural exchange.

STEPS	TEACHING POINTS	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES (Teacher will record the responses of the students after the end of the Class)	EXPECTED OUTCOME
INTRODUCTION	It is assumed that the students have some basic ideas about Indian classical drama and their popularity.	>Origin of Mahabharata >Its narrative technique >myth and reality in Mahabharata >position of women >norms of love and marriage >significance of the game of dice	The students attentively listen to the teacher actively and write down the important topics that has been discussed by the teacher regarding the topic.	The students became familiar with many of these other drama, poetry and epic narratives.

STEP	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES	EXPECTED OUTCOME
CLOSURE	❖ Oral Test: Themes and recensions of the Indian Epic Tradition name some other Indian epic and Classical Indian dramas and their characteristics.	The students found it easy to understand with the summarization.	They are acquainted with a rich and diverse canvas that spans across genres like drama, poetry and epic narratives

Signature of the Teacher

RANGAPARA COLLEGE

RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : August to December

Name of the Teacher: Ms. Sikha Choudhury	**Subject: ENGLISH**
Semester : V	**Paper code: ENG-HE-5036**
Duration/Time : 4 months	**Unit: Literature of the Indian Diaspora**
Number of Classes: 75	

GENERAL OBJECTIVES OF THE LESSON

1. It aims to introduce the students with the concept of diaspora and study the various aspects of Indian diasporic literature from different perspectives. It examines the works of writers living abroad and the challenges they face in adapting to the new environment.

STEPS	TEACHING POINTS	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES (Teacher will record the responses of the students after the end of the Class)	EXPECTED OUTCOME
INTRODUCTION	It is assumed that the students have some basic ideas about Indian diasporic literature.	>Defining diaspora >Explaining the concept of diasporic literature >Citing examples of diasporic literature from across the world >Explaining the themes of diasporic literature >Comparing Indian diasporic literature with that of other diasporas	The students attentively listen to the teacher actively and write down the important topics that has been discussed by the teacher regarding the topic.	The students become familiar with diasporic writers and their prominent works

STEP	TEACHER'S ACTIVITIES	STUDENTS' ACTIVITIES	EXPECTED OUTCOME
CLOSURE	Summary of the discussion were dictated to the students. The teacher also drew comparison between Indian diasporic literature with contemporary works by native Indian writers.	The students found it easy to understand with the summarization.	They are acquainted with different themes like rootlessness, identity crisis, etc. through the texts discussed.

Signature of the Teacher

LESSON PLAN
FIRST SEMESTER (Major)
SESSION – 2023 - 24
SEMESTER –ODD
DEPARMENT OF POLITICAL SCIENCE
RANGAPARA COLLEGE

IDENTIFICATION OF DATA

Name of the Paper – UNDERSTANDING POLITICAL THEORY	Name of the class- First Semester Major
Name of the lesson - Concept of Power, Authority and Legitimacy.	Number of students: 60
Name of the Teacher : Lohit Ch. Baishya	Duration of the class – 1 hour
	Date: 25-06-2023

GENERAL OBJECTIVES

1. To give the knowledge of importance Power, Authority and Legitimacy.
2. To impart the knowledge about the relation between Power, Authority and Legitimacy.

TEACHING AIDS

1. Blackboard
2. Chalk & Duster

INTRODUCTION

ASSUMED PREVIOUS KNOWLEDGE	TEACHER'S ACTIVITIES	LEARNER'S ACTIVITIES
It is assumed that the students have some basic ideas about the topic	The teacher will enter in the classroom with a smile on face and greet the students. Then the teacher will observe the sitting arrangement of the classroom. To test the previous knowledge of the student and in order to motivate them, the teacher put them the following questions. 1. What do you mean by power? After testing the previous knowledge the teacher will announced the topic and will write the topic on the black-board.	The students will stand up and greet the teachers. The pupils will try to give the answers of the questions that is to be asked by the Teacher. The student will open their respective text books and note books and then they will write the topic in their note copies.

PRESENTATION

TEACHING POINTS	SPECIFIC OBJECTIVES	TEACHER'S ACTIVITIES	LEARNER'S ACTIVITIES	EXPECTED LEARNING OUTCOME
Meaning & definition and type of power.	To make the students understand about the meaning & definition and type of power.	The teacher will present a lecture on the particular topics and discuss over the matter along with the students with some relevant examples and in addition to this he or she will ask questions relevant to the topic to the students for active participation of the students.	The students will attentively listen to the teacher actively and write down the important topics that has been discussed by the teacher regarding the topic.	The learners will properly understand the topic and gain some information or knowledge about the topic.
Meaning & definition and type of authority.	To make the students understand about the meaning & definition and type of authority.			
Meaning & definition and type of legitimacy.	To make the students understand about the meaning & definition and type of legitimacy.			
Relation between Power, Authority and Legitimacy.	To give knowledge about the relation between Power, Authority and Legitimacy.			

CLOSURE

TEACHER'S ACTIVITIES	LEARNER'S ACTIVITIES
After this, the teacher will sum up the day's topic by giving a summery if necessity arises. Then the teacher will write the question on the	The learners will listen carefully to the teacher and will asked some question to the teacher if they find any problem regarding the topic.
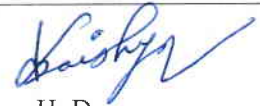
blackboard of the homework which is done by the students.

1. What do you mean by power? Discuss the various types of power.
2. Define authority and discuss its various forms.
3. Discuss the concept of legitimacy and its different forms.
4. Discuss the relationship between Power, Authority and Legitimacy.

The teacher will clean the blackboard and then the teacher will thanked the students for their co-operation and leave the classroom.

The students will note down the questions of the homework in their respective copies.

The student will stand up and thank the teacher.

HoD
Dept. of Political Science
Rangapara College

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Mr. Parag Bhattacharya   **Subject: Mathematical Physics & Mechanics (Part A)**

Semester : I	Paper code: PHY101
Number of Classes: 8	**Unit: I (Vector Calculus)**

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Define scalar and vector fields, and list key vector identities, such as divergence, curl, and the Laplacian operator.
2. Explain the physical significance of the gradient, divergence, and curl in the context of physical examples, such as Newton's gravitational force and centripetal acceleration in circular motion.
3. Apply vector calculus concepts to solve physical problems, such as calculating the Laplacian of a gravitational potential or determining the work done by a force through line integrals.
4. Differentiate between solenoidal and irrotational vector fields, and analyse the conditions under which a force is conservative based on path dependence/independence.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1	Scalar and Vector Fields	1. Introduction to scalar and vector fields. 2. Examples and physical significance of scalar and vector fields.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Define and differentiate between scalar and vector fields. 2. Identify examples of scalar and vector fields in	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets	1. Mathematical Methods for Physics and Engineering: A Comprehensive Guide by K. F Riley, Michael Paul Hobson, and Stephen

					physical contexts. 3. Explain the significance of scalar and vector fields in physics.	● End-semester exam	John Bence, Cambridge University Press 2. Mathematical Physics by H. K. Dass and Rama Verma, S. Chand Publishers 3. Advanced Engineering Mathematics by Erwin Kreyszig, John Wiley & Sons
2nd	1	Derivatives of Vector Functions	1. Derivatives of vector functions. 2. Physical examples: velocity and centripetal acceleration of a point in circular motion. 3. Introduction to directional derivatives.		1. Compute derivatives of vector functions. 2. Illustrate the concept of directional derivatives. 3. Apply derivative concepts to physical examples such as velocity and centripetal acceleration.		
3rd	1	Gradient of a Scalar Field	1. Definition and properties of the gradient. 2. Physical example: Newton's gravitational force as the gradient of a scalar potential. 3. Gradient as the normal vector to a surface.		1. Define the gradient of a scalar field. 2. Calculate the gradient in various coordinate systems. 3. Explain the physical interpretation of the gradient.		
4th	1	Divergence and Curl of a Vector Field	1. Definition and properties of divergence and curl. 2. Characteristics of solenoidal and irrotational vector fields.		1. Define and compute the divergence and curl of vector fields. 2. Differentiate between solenoidal and		

					irrotational fields. 3. Explain the physical significance of divergence and curl.		
5th	1	Laplacian Operator and Physical Problems	1. Introduction to the Laplacian operator. 2. Applications: Laplacian of gravitational potential and divergence of central force. 3. Discussion on relevant physical problems.		1. Define the Laplacian operator. 2. Apply the Laplacian to physical problems, such as gravitational potential. 3. Explain the significance of the Laplacian in vector calculus.		
6th	1	Vector Identities and Vector Integration	1. Common vector identities (e.g., product rules, curl of a gradient). 2. Introduction to vector integration. 3. Line integrals with physical examples: work done by a force.		1. Identify and use common vector identities. 2. Perform vector integration using line integrals. 3. Understand the application of line integrals in calculating work done by a force.		
7th	1	Surface and Volume Integrals	1. Concept and calculation of surface integrals. 2. Volume integrals and applications in physical contexts.		1. Calculate surface and volume integrals in various contexts.		

			3. Introduction to the concept of vector flux.		2. Understand the concept of vector flux. 3. Apply surface and volume integrals to physical scenarios.		
8th	1	Theorems in Vector Calculus	1. Gauss's divergence theorem (statement and basic applications). 2. Stokes's theorem (statement and basic applications). 3. Illustrative examples of the use of these theorems in physical problems.		1. State Gauss's divergence theorem and Stokes's theorem. 2. Apply these theorems to simplify vector calculus problems. 3. Evaluate physical problems using these theorems.		

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Mr. Parag Bhattacharya   **Subject: Mathematical Physics & Mechanics (Part A)**

Semester : I	Paper code: PHY101
Number of Classes: 5	**Unit: II (Curvilinear coordinates)**

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Describe the concept of curvilinear coordinates and identify examples of orthogonal curvilinear coordinates.
2. Transform line elements from Cartesian to curvilinear coordinates, specifically in spherical and cylindrical systems.
3. Apply the concepts of gradient, divergence, and curl in spherical and cylindrical coordinates to solve relevant physical problems.
4. Compare the properties of Cartesian and curvilinear coordinate systems, and analyse the mathematical operations in different coordinate systems.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials

9th	1	Introduction to Curvilinear Coordinates	1. Introduction to curvilinear coordinates. 2. Definition and general properties of curvilinear coordinates. 3. Importance and application in physics and engineering.	● Interactive lectures ● Visual aids and simulations ● Problem-solving sessions ● Analysis of real-world examples	1. Define curvilinear coordinates and explain their significance. 2. Describe the basic properties and advantages of using curvilinear coordinates. 3. Identify situations where curvilinear coordinates are preferred over Cartesian coordinates.	● Sessional exam ● Quizzes and objective tests ● Homework assignments ● Participation during class ● Problem sets ● End-semester exam	1. Mathematical Methods for Physics and Engineering: A Comprehensive Guide by K. F Riley, Michael Paul Hobson, and Stephen John Bence, Cambridge University Press 2. Mathematical Physics by H. K. Dass and Rama Verma, S. Chand Publishers 3. Advanced Engineering Mathematics by Erwin Kreyszig, John Wiley & Sons
10th	1	Orthogonal Curvilinear Coordinates	1. Concept of orthogonality in curvilinear coordinates. 2. Definition and examples of orthogonal curvilinear coordinates. 3. Physical and mathematical significance of orthogonality.		1. Define orthogonal curvilinear coordinates and explain their significance. 2. Identify examples of orthogonal curvilinear coordinate systems. 3. Explain the importance of orthogonality in simplifying physical and mathematical problems.		
11th	1	Examples of Curvilinear	1. Detailed study of spherical, cylindrical, and		1. Describe spherical, cylindrical, and plane		

		Coordinate Systems	plane polar coordinates. 2. Comparison of these systems with Cartesian coordinates. 3. Applications of each coordinate system in solving physical problems.		polar coordinate systems. 2. Compare and contrast these systems with Cartesian coordinates. 3. Identify appropriate physical problems where each coordinate system is advantageous.		
12th	1	Transformation of Line Elements from Cartesian to Curvilinear Coordinates	1. Concept of line elements. 2. Transformation equations for converting Cartesian coordinates to spherical and cylindrical coordinates. 3. Calculation of line elements in curvilinear coordinate systems.		1. Define line elements and understand their role in coordinate transformations. 2. Perform transformations from Cartesian to spherical and cylindrical coordinates. 3. Calculate line elements in different curvilinear coordinate systems.		
13th	1	Gradient, Divergence, and Curl in Curvilinear Coordinates	1. Expressions for gradient, divergence, and curl in spherical and cylindrical coordinates. 2. Physical interpretation of these vector		1. Derive expressions for gradient, divergence, and curl in spherical and cylindrical coordinates.		

			calculus operations in curvilinear systems. 3. Applications in electromagnetism, fluid dynamics, and other physical contexts.		2. Interpret the physical meaning of these operations in curvilinear systems. 3. Apply these operations to solve physical problems in relevant fields.		

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Mr. Parag Bhattacharya   **Subject: Mathematical Physics & Mechanics (Part A)**

Semester : I	**Paper code: PHY101**
Number of Classes: 2	**Unit: III (Dirac delta function)**

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Define the Dirac delta function and explain its key properties, including its representation using Gaussian, rectangular functions, and the Laplacian of 1/r.
2. Apply the concept of the Dirac delta function in three-dimensional space to solve related mathematical and physical problems.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
14th	1	Introduction to the Dirac Delta Function and its Properties	1. Definition of the Dirac delta function. 2. Fundamental properties of the delta function (e.g., sifting property, integral representations). 3. Introduction to representations of the delta function	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Define the Dirac delta function and explain its significance in mathematical physics. 2. Describe the fundamental properties of the delta function, such	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester exam	1. Mathematical Methods for Physics and Engineering: A Comprehensive Guide by K. F Riley, Michael Paul Hobson, and Stephen John Bence, Cambridge University Press

			(Gaussian function, rectangular function, and Laplacian of 1/r).		as the sifting property and its behaviour under integration. 3. Explain and demonstrate the representation of the delta function using a Gaussian function and a rectangular function. 4. Understand the approximation methods for representing the delta function.		2. Mathematical Physics by H. K. Dass and Rama Verma, S. Chand Publishers 3. Advanced Engineering Mathematics by Erwin Kreyszig, John Wiley & Sons
15th	1	Advanced Representations and 3-Dimensional Dirac Delta Function	1. Detailed study of the Laplacian of 1/r representation of the delta function. 2. Applications of the Laplacian representation in solving physical problems. 3. Extension to the 3-dimensional Dirac delta function and its properties. 4. Use of the 3-dimensional delta function in physics, particularly in electrostatics and quantum mechanics.		1. Derive and explain the representation of the Dirac delta function using the Laplacian of 1/r. 2. Apply the Laplacian representation in physical problems, such as electrostatics and field theory. 3. Define the 3-dimensional Dirac delta function and explain its properties.	

					4. Illustrate the use of the 3-dimensional delta function in solving real-world physics problems.		

Signature of the Teacher

RANGAPARA COLLEGE
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LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Dr. Luxmi Machahari   **Subject: Mathematical Physics & Mechanics (Part B)**

Semester : I	Paper code: PHY101

Number of Classes: 4	Unit: I (Reference frames)

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Define inertial and non-inertial frames of reference, and distinguish between them by identifying key characteristics and examples.
2. Explain the effects of fictitious forces such as centrifugal and Coriolis forces in non-inertial frames of reference.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1	Introduction to Inertial and Non-Inertial Frames	1. Definition and characteristics of inertial frames of reference. 2. Definition and examples of non-inertial frames of reference. 3. Introduction to fictitious forces and why they arise in non-inertial frames.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Define and distinguish between inertial and non-inertial frames of reference. 2. Identify real-world examples of both inertial and non-inertial frames. 3. Understand the concept of fictitious forces and	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester exam	1.

					why they are introduced in non-inertial frames.		
2nd	1	Uniformly Rotating Frames and Laws of Physics	1. Understanding uniformly rotating frames of reference. 2. Transformation of physical laws when moving from inertial to rotating frames. 3. Introduction to the centrifugal force as a fictitious force.		1. Describe the characteristics of a uniformly rotating frame of reference. 2. Explain how the laws of physics are modified when applied to rotating frames. 3. Derive the expression for centrifugal force in a rotating frame and understand its origin.		
3rd	1	Centrifugal Force in Rotating Coordinate Systems	1. In-depth study of centrifugal force. 2. Mathematical derivation of centrifugal force in rotating frames. 3. Real-world applications and examples where centrifugal force is significant.		1. Derive and explain the mathematical formula for centrifugal force. 2. Identify scenarios in which centrifugal force plays a crucial role. 3. Apply the concept of centrifugal force to solve practical problems.		

4th	1	Coriolis Force and Its Applications	1. Definition and derivation of Coriolis force in rotating frames. 2. Physical interpretation and significance of Coriolis force. 3. Applications of Coriolis force, including its effects on weather patterns, ocean currents, and engineering problems.		1. Derive the formula for Coriolis force and explain its physical meaning. 2. Discuss the impact of Coriolis force on natural phenomena such as weather systems and ocean currents. 3. Apply the concept of Coriolis force to solve problems in physics and engineering.		

Luxmi Machahari

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Dr. Luxmi Machahari   **Subject: Mathematical Physics & Mechanics (Part B)**

Semester : I	Paper code: PHY101

Number of Classes: 7	Unit: II (Gravitation and central force motion)

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Describe the nature of central force motion and its significance in physical systems.
2. Derive the equations of motion for the two-body problem and explain the process of reducing it to a one-body problem.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
					3. Apply Gauss's law and Poisson's equation to solve problems related to gravitational fields.		
5th	1	Introduction to Central Force Motion	1. Definition of central force and examples (e.g., gravitational and electrostatic forces). 2. Characteristics and properties of central forces. 3. Basic equations governing motion under a central force.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Define what is meant by central force and give examples from physics. 2. Describe the properties of central forces, including their direction and dependence on distance. 3. Derive the equations of motion for a particle under central force.	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester exam	1.

6th	1	Two-Body Problem and Reduction to One-Body Problem	1. Introduction to the two-body problem. 2. Deriving the centre of mass and relative coordinates. 3. Reduction of the two-body problem to an equivalent one-body problem using reduced mass.		1. Explain the concept of the two-body problem in classical mechanics. 2. Derive the transformation from two-body coordinates to centre of mass and relative coordinates. 3. Understand and apply the concept of reduced mass to simplify two-body problems.		
7th	1	Kepler's Laws of Planetary Motion	1. Statement and derivation of Kepler's First Law (Law of Ellipses). 2. Kepler's Second Law (Law of Equal Areas) and its derivation. 3. Kepler's Third Law (Law of Harmonies) and its mathematical expression.		1. State and describe Kepler's three laws of planetary motion. 2. Derive Kepler's laws from the principles of central force motion. 3. Apply Kepler's laws to calculate orbital parameters of planets and satellites.		
8th	1	Gravitational Potential and Fields	1. Definition of gravitational potential. 2. Calculation of gravitational		1. Define gravitational potential and explain its		

			potential due to point masses and continuous mass distributions. 3. Relationship between gravitational potential and gravitational field.		significance in physics. 2. Calculate gravitational potential for point masses and extended bodies. 3. Understand the relationship between gravitational potential and gravitational field.		
9th	1	Gravitational Fields Due to Spherical Bodies	1. Gravitational field inside and outside a uniform spherical shell. 2. Gravitational field due to a solid sphere. 3. Applications in planetary and stellar physics.		1. Calculate the gravitational field inside and outside a spherical shell. 2. Derive expressions for the gravitational field due to a solid sphere. 3. Apply these concepts to solve problems related to planets and stars.		
10th	1	Gauss's Law for Gravitation	1. tatement and explanation of Gauss's law for gravitational fields. 2. Application of Gauss's law to symmetrical mass distributions.		1. State Gauss's law for gravitation and explain its theoretical basis. 2. Apply Gauss's law to calculate gravitational		

			3. Derivation of gravitational field using Gauss's law.		fields of symmetric mass distributions. 3. Use Gauss's law to derive gravitational field equations for spherical and cylindrical geometries.	
11th	1	Poisson's Equation for Gravitational Fields	1. Introduction to Poisson's equation and its relevance to gravitational fields. 2. Derivation of Poisson's equation from Gauss's law. 3. Applications of Poisson's equation in solving gravitational field problems.		1. Derive Poisson's equation for gravitational fields from fundamental principles. 2. Explain the physical significance of Poisson's equation. 3. Use Poisson's equation to solve complex gravitational field problems in various geometries.	

Luxmi Machahari

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Dr. Luxmi Machahari   **Subject: Mathematical Physics & Mechanics (Part B)**

Semester : I	Paper code: PHY101

Number of Classes: 4	Unit: III (Conservation laws)

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Describe the dynamics of a system of particles, including concepts like centre of mass, momentum, torque, and impulse.
2. Apply the principles of conservation of momentum to analyse elastic and inelastic collisions.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
12th	1	Dynamics of a System of Particles and Centre of Mass	1. Introduction to the dynamics of a system of particles. 2. Definition and calculation of the centre of mass for a system of particles. 3. Motion of the centre of mass in isolated and non-isolated systems.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Describe the dynamics of a system of particles and the significance of the centre of mass. 2. Calculate the centre of mass for different systems of particles. 3. Understand the concept of the motion of the centre of mass and its	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester examSessional exam • Quizzes and objective tests • Homework assignments • Participation during class	1.

					role in analysing the dynamics of a system.	● Problem sets ● End-semester exam
13th	1	Principle of Conservation of Momentum, Torque, and Impulse	1. Principle of conservation of momentum for a system of particles. 2. Definition and calculation of torque and its relation to angular momentum. 3. Concept of impulse and its relation to change in momentum.		1. State and explain the principle of conservation of momentum. 2. Define torque and impulse and explain their roles in particle dynamics. 3. Apply the concepts of torque and impulse to solve problems involving rotational and linear motion.	
14th	1	Elastic and Inelastic Collisions	1. Definition and characteristics of elastic and inelastic collisions. 2. Conservation laws applicable to collisions (momentum and energy conservation). 3. Mathematical treatment of elastic and inelastic collisions between two particles.		1. Differentiate between elastic and inelastic collisions and describe their characteristics. 2. Apply conservation of momentum and energy to analyse elastic collisions. 3. Understand and solve problems involving inelastic collisions, including	

| 15th | 1 | Centre of Mass and Laboratory Frames | 1. Definition and importance of the centre of mass frame in analysing collisions. 2. Comparison between centre of mass frame and laboratory frame. 3. Transformations between these frames and applications in solving collision problems. | | perfectly inelastic collisions. 1. Define and distinguish between the centre of mass frame and the laboratory frame. 2. Apply the concept of the centre of mass frame to simplify the analysis of collisions. 3. Solve problems involving transformations between the centre of mass frame and the laboratory frame. | | |

Luxmi Machahari

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Dr. Bijoy Sankar Boruah   **Subject: Mathematical Physics & Mechanics (Part B)**

Semester : I	**Paper code: PHY101**
Number of Classes: 6	**Unit: IV (Dynamics of rigid bodies)**

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Describe the fundamental concepts of rigid body motion and rotational motion, distinguishing them from other types of motion.
2. Calculate the moment of inertia for different geometric shapes, such as rectangular lamina, discs, cylindrical, and spherical bodies.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1	Introduction to Rigid Body Motion	1. Definition of a rigid body and characteristics of rigid body motion. 2. Differences between rigid body motion and motion of point particles. 3. Types of rigid body motion: translational, rotational, and general planar motion.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Define what is meant by a rigid body in physics and describe its characteristics. 2. Differentiate between rigid body motion and point particle motion. 3. Identify and describe the various types of rigid body motion	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester exam	1.

					(translational, rotational, planar).		
2nd	1	Rotational Motion	1. Angular displacement, angular velocity, and angular acceleration. 2. Equations of rotational motion and their analogies with linear motion. 3. Concept of angular momentum and torque in rotational motion.		1. Define angular displacement, angular velocity, and angular acceleration. 2. Derive the equations of rotational motion and compare them with linear motion equations. 3. Explain the concepts of angular momentum and torque and their role in rotational dynamics.		
3rd	1	Moment of Inertia – Basic Concepts	1. Definition of moment of inertia and its physical significance. 2. Mathematical expression for moment of inertia. 3. Calculation of moment of inertia for simple geometries like a thin rod and point mass system.		1. Define the moment of inertia and explain its significance in rotational motion. 2. Derive the mathematical expression for moment of inertia. 3. Calculate the moment of inertia for simple systems such as a thin rod		

					(translational, rotational, planar).		
2nd	1	Rotational Motion	1. Angular displacement, angular velocity, and angular acceleration. 2. Equations of rotational motion and their analogies with linear motion. 3. Concept of angular momentum and torque in rotational motion.		1. Define angular displacement, angular velocity, and angular acceleration. 2. Derive the equations of rotational motion and compare them with linear motion equations. 3. Explain the concepts of angular momentum and torque and their role in rotational dynamics.		
3rd	1	Moment of Inertia – Basic Concepts	1. Definition of moment of inertia and its physical significance. 2. Mathematical expression for moment of inertia. 3. Calculation of moment of inertia for simple geometries like a thin rod and point mass system.		1. Define the moment of inertia and explain its significance in rotational motion. 2. Derive the mathematical expression for moment of inertia. 3. Calculate the moment of inertia for simple systems such as a thin rod		

					and point mass.		
4th	1	Moment of Inertia – Complex Shapes	1. Calculation of the moment of inertia for a rectangular lamina, disc, cylindrical, and spherical bodies. 2. Use of the parallel axis theorem and perpendicular axis theorem in calculations. 3. Examples and problem-solving related to the moment of inertia of complex shapes.		1. Calculate the moment of inertia for complex shapes including a rectangular lamina, disc, cylinder, and sphere. 2. Apply the parallel axis and perpendicular axis theorems in moment of inertia calculations. 3. Solve problems related to moment of inertia for various geometric bodies.		
5th	1	Kinetic Energy of Rotation	1. Derivation of the formula for kinetic energy of a rotating rigid body. 2. Comparison between kinetic energy of linear motion and rotational motion. 3. Examples and applications in calculating the kinetic energy of rotating systems.		1. Derive the formula for the kinetic energy of rotational motion. 2. Compare the kinetic energy expressions for linear and rotational motion. 3. Apply the formula for kinetic energy to solve		

					problems involving rotating rigid bodies.		
6th	1	Combined Translational and Rotational Motion	1. Analysis of motion involving both translation and rotation (e.g., rolling motion). 2. Relationship between translational and rotational motion (rolling without slipping). 3. Examples of real-world applications, such as rolling wheels and cylinders.		1. Explain how translational and rotational motions combine in systems like rolling wheels. 2. Derive the condition for rolling without slipping and apply it to solve problems. 3. Analyse and solve problems involving combined translational and rotational motion in real-world scenarios.		

Bijoy Sankar Boruah

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Dr. Bijoy Sankar Boruah   **Subject: Mathematical Physics & Mechanics (Part B)**

Semester : I	**Paper code: PHY101**
Number of Classes: 3	**Unit: V (Work and energy)**

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Explain the work-energy theorem and distinguish between conservative and non-conservative forces, as well as their effects on mechanical energy.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
7th	1	Work and Kinetic Energy Theorem	1. Definition of work and calculation of work done by a constant and variable force. 2. Introduction to the kinetic energy theorem. 3. Relationship between work and kinetic energy, including mathematical derivation.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Define and calculate work done by a force in different scenarios (constant and variable forces). 2. State and derive the work-energy theorem and explain its physical significance. 3. Apply the work-energy	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester exam	1.

					theorem to solve problems involving the change in kinetic energy of a particle.		
8th	1	Conservative and Non-Conservative Forces; Potential Energy	1. Definition and characteristics of conservative and non-conservative forces. 2. Examples of conservative forces (gravitational, electrostatic) and non-conservative forces (friction, air resistance). 3. Concept of potential energy and its relationship with conservative forces. 4. Force as the gradient of potential energy.		1. Differentiate between conservative and non-conservative forces and provide examples. 2. Explain the concept of potential energy and its relation to conservative forces. 3. Derive the expression of force as the negative gradient of potential energy.		
9th	1	Work and Potential Energy; Non-Conservative Forces	1. Work done by conservative forces and its relation to potential energy changes. 2. Introduction to the concept of potential energy curves. 3. Calculation of work done by non-conservative forces (e.g., friction, air resistance).		1. Explain how work done by conservative forces relates to changes in potential energy. 2. Interpret potential energy curves and understand stable and unstable equilibrium points.		

			4. Impact of non-conservative forces on the mechanical energy of a system.		3. Calculate work done by non-conservative forces and understand how they affect the total mechanical energy of a system.		

Bijoy Sankar Borwah

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Dr. Bijoy Sankar Boruah   **Subject: Mathematical Physics & Mechanics (Part B)**

Semester : I	**Paper code: PHY101**
Number of Classes: 2	**Unit: VI (Oscillations)**

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Derive the differential equation for simple harmonic motion (SHM) and solve it to find the general solution for displacement as a function of time.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
10th	1	Differential Equation of SHM and Its Solution	1. Introduction to simple harmonic motion (SHM). 2. Derivation of the differential equation for SHM. 3. General solution of the SHM differential equation. 4. Interpretation of the solution in terms of amplitude, frequency, and phase.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	1. Define simple harmonic motion (SHM) and identify physical systems that exhibit SHM (e.g., mass-spring system, pendulum). 2. Derive the differential equation of SHM for a simple system.	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester exam	1.

					3. Solve the differential equation to obtain the general solution for displacement as a function of time. 4. Interpret the solution to understand the role of amplitude, frequency, and phase in SHM.	
11th	1	Total Energy of Oscillation in Simple Harmonic Motion	1. KE and PE in simple harmonic motion. 2. Derivation of expressions for kinetic and potential energies in SHM. 3. Total energy of a system undergoing SHM and its conservation. 4. Graphical representation of energy distribution in SHM.		1. Derive expressions for kinetic energy and potential energy in the context of simple harmonic motion. 2. Explain the concept of total energy in SHM and show that it is conserved over time. 3. Analyse the exchange between kinetic and potential energy during SHM and represent this energy transformation graphically.	

					4. Solve numerical problems involving the calculation of kinetic, potential, and total energy in SHM.		

Bijoy Sankar Boruah

Signature of the Teacher

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
LESSON PLAN
Period : Aug 2023 - Dec 2023   YEAR: 2023 - 24

Name of the Teacher: Dr. Bijoy Sankar Boruah   **Subject: Mathematical Physics & Mechanics (Part B)**

Semester : I	Paper code: PHY101

Number of Classes: 4	Unit: VII (Properties of matter)

Objective of the Lesson:

At the end of the lesson, students will be able to:

1. Derive the relationships between different elastic constants (such as Young's modulus, shear modulus, and bulk modulus) and explain their physical significance.

Week	Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
			different scenarios.		1. Define Young's modulus, shear modulus, bulk modulus, and Poisson's ratio.		
12th	1	Relation Between Elastic Constants	1. Definition and explanation of different elastic constants: Young's modulus, shear modulus, bulk modulus, and Poisson's ratio. 2. Mathematical relationships between these elastic constants. 3. Physical interpretation and applications of these constants in various materials.	• Interactive lectures • Visual aids and simulations • Problem-solving sessions • Analysis of real-world examples	2. Derive the mathematical relationships between the elastic constants. 3. Explain the physical significance of the derived	• Sessional exam • Quizzes and objective tests • Homework assignments • Participation during class • Problem sets • End-semester exam	1.

					relationships and how they apply to different materials.	
13th	1	Twisting Torque on a Cylinder or Wire	1. Concept of torque and torsional deformation. 2. Derivation of the expression for twisting torque on a cylinder or wire. 3. Calculation of torsional stress, strain, and angle of twist. 4. Applications of torsion in engineering and everyday objects (e.g., shafts, springs).		1. Define torque and torsional deformation. 2. Derive the formula for twisting torque and calculate torsional stress and strain in cylindrical objects. 3. Analyse real-world applications of torsional mechanics, including shafts and springs.	
14th	1	Cantilever	1. Definition and structure of a cantilever beam. 2. Bending moment and shear force in a cantilever. 3. Derivation of the equation for the deflection of a cantilever beam under load. 4. Practical applications of cantilevers in construction and architecture.		1. Describe the structure and function of a cantilever beam. 2. Derive the expression for deflection and bending moment in a cantilever under different loading conditions. 3. Identify real-life examples and applications	

					of cantilevers in various fields.		
15th	1	Kinematics of Moving Fluids and Poiseuille's Equation	1. Basic principles of fluid dynamics and kinematics of moving fluids. 2. Derivation of Poiseuille's equation for laminar flow in a capillary tube. 3. Factors affecting fluid flow rate, such as viscosity, tube radius, and pressure difference. 4. Applications of Poiseuille's equation in medical and engineering fields.		1. Explain the basic principles of fluid kinematics. 2. Derive Poiseuille's equation for the flow of a viscous liquid through a capillary tube. 3. Apply Poiseuille's equation to solve problems related to fluid flow in biological and engineering systems.		

Bijoy Sankar Boruah

Signature of the Teacher

Department of History
Rangapara College
TEACHING PLAN
B.A First Semester -Minor

Title of the Course: History of India (from Earliest Times up to c. 1206 CE)
Course Code: HIS –HIS-0100104

Week	Day/ Hours Per Class = One Hour	Unit/Topic	Content /Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation Strategies	Suggested Study Materials Readings
Week-I	Day-1	Unit-I	Sources : Literary and archaeological	Lecture and Discussion	On completion of Unit-I, the students will be able to acquire the knowledge of various literary and archaeological sources of Ancient India like inscriptions, monumental remains, coins etc.	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan, V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week	Day/ Hours	Unit/Topic	Content /Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation Strategies	Suggested Study Materials Readings
Week-I	Day 2	Unit-I	Sources : Literary and archaeological	Lecture and Discussion	On completion of Unit-I, the students will be able to know various literary sources of ancient and various archaeological sources of Ancient Indian like inscriptions, monumental remains, coins etc.	Objective types and few critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.MahajanV.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week-I	Day 3	Unit-I	Sources : Literary and archaeological	Lecture and Discussion	On completion of Unit-I, the students will be able to know various literary sources of ancient and various archaeological sources of Ancient Indian like inscriptions, monumental remains, coins etc.	Objective types and few critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week-I	Day 4	Unit-I	Sources : literary and archaeological	Lecture and Discussion	On completion of Unit-I, the students will be able to know various literary sources of ancient and various archaeological sources of Ancient Indian like inscriptions, monumental remains, coins etc.	Objective types and few critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰ তচদ্দুক আমানুল হুছেইন
Week-I	Day 5	Unit-I	Indus Civilization: Origin & extent, urban planning and urban decline.	Lecture and Discussion	After the completion of the topic the students will be able to explain the origin & extent of Indus Valley Civilization	Oral Test / MCQ Type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰ তচদ্দুক আমানুল হুছেইন

Week-I	Day 6	Unit-I	Indus Civilization: Origin & extent, urban planning and urban decline.	Lecture and Discussion	After the completion of the topic the students will be able to explain the origin & extent of Indus Valley Civilization	Oral Test / MCQ Type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week II	Day 7	Unit-I	Indus Civilization: Origin & extent, urban planning and urban decline.	Lecture and Discussion	After the completion of the topic the students will be able to explain the origin & extent of Indus Valley Civilization	Oral Test / MCQ Type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week II	Day 8	Unit - I	Society, polity, economy and religion in the Rig Vedic Period	Lecture and Discussion	After the completion of the topic the students will be able to explain the socio-economic and political religious scenario of Rig Vedic Period	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week –II	Day 9	Unit - I	Society, polity, economy and religion in the Later Vedic Period	Lecture and Discussion	After the completion of the topic the students will be able to explain the socio-economic and political religious scenario of later Vedic Period	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week –II	Day 10	Unit - II	Rise of territorial states– Janapadas and Mahajanapadas	Lecture and Discussion	After the completion of the topic the students will be able to explain the rise of Mahajanapadas in Early India	Short note writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল ছছেইন
Week II	Day 11	Unit-II	Rise of territorial states– Janapadas and Mahajanapadas	Lecture and Discussion	After the completion of the topic the students will be able to explain the rise of Mahajanapadas in Early India	Short note writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল ছছেইন

Week -II	Day : 12	Unit-II	The Mauryas - Background of Mauryan state formation.	Lecture and Discussion	After the completion of the topic the students will be able to explain the formation of a new state under the Mauryas	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week III	Day 13	Unit-II	The Mauryas - Background of Mauryan state formation.	Lecture and Discussion	After the completion of the topic the students will be able to explain the formation of a new state under the Mauryas	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week III	Day 14	Unit-II	The Mauryas - Background of Mauryan state formation	Lecture and Discussion	After the completion of the topic the students will be able to explain the formation of a new state under the Mauryas	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week -III	Day 15	Unit - II	Asoka :Dhamma - its propagation; Administration and Economy under the Mauryas.	Lecture and Discussion	After the completion of the topic the students will be able to understand the religious policy of the great king Ashoka and the socio-economic status of the state	Objective types and few critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week III	Day 16	Unit-II	Asoka :Dhamma - its propagation; Administration and Economy under the Mauryas.	Lecture and Discussion	After the completion of the topic the students will be able to understand the religious policy of the great king Ashoka and the socio-economic status of the state	Objective types and few critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week III	Day 17	Unit-II	Asoka :Dhamma - its propagation; Administration and Economy under the Mauryas.	Lecture and Discussion	After the completion of the topic the students will be able to understand the religious policy of the great king Ashoka and the socio-economic status of the state	Objective types and few critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week III	Day 18	Unit-II		Decline of the Mauryas	Lecture and Discussion	After the completion of the topic the students will be able to understand the downfall of the Maurya dynasty	Short note writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week IV	Day 19	Unit-II		Decline of the Mauryas	Lecture and Discussion	After the completion of the topic the students will be able to understand the downfall of the Maurya dynasty	Short Note Writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week IV	Day 20	Unit-II	Decline of the Mauryas	Lecture and Discussion	After the completion of the topic the students will be able to understand the downfall of the Maurya dynasty	Short Note Writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week - IV	Day 21	Unit – II	Decline of the Mauryas	Lecture and Discussion	After the completion of the topic the students will be able to understand the downfall of the Maurya dynasty	Short Note Writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week - IV	Day 22	Unit - III	Post–Mauryan period : The Sungas, Chedis	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Sungas and Chedis	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week IV	Day 23	Unit-III	Post–Mauryan period : The Sungas, Chedis	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Sungas and Chedis	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week - IV	Day 24	Unit - III	Kharavelas and Satavahanas	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Kharavelas and Satvahanas	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week-V	Day 25	Unit-III	Kharavelas and Satavahanas	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Kharavelas and Satvahanas.	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week V	Day 26	Unit-III	Kharavelas and Satavahanas	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Kharavelas and Satavahanas	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week V	Day 27	Unit - III	Sangam Age: literature, society and culture in South India.	Lecture and Discussion	After the completion of the topic the students will be able to explain the development of Sangam age in South India	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week V	Day 28	Unit-III	Sangam Age: literature, society and culture in South India.	Lecture and Discussion	After the completion of the topic the students will be able to explain the development of Sangam age in South India	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week V	Day 29	Unit-III	Sangam Age: literature, society and culture in South India.	Lecture and Discussion	After the completion of the topic the students will be able to explain the development of Sangam age in South India	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week -V	Day 30	Unit - IV	Central Asian contact and its Impact: The Indo-Greeks, Sakas and Kushanas	Lecture and Discussion	After the completion of the topic the students will be able to explain the Central Asian contact and its Impact	Critical Questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড৹তচদ্দুক আমানুল হুছেইন
Week VI	Day 31	Unit-IV	Central Asian contact and its Impact: The Indo-Greeks, Sakas and Kushanas	Lecture and Discussion	After the completion of the topic the students will be able to explain the Central Asian contact and its Impact	Critical Questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড৹তচদ্দুক আমানুল হুছেইন

Week - VI	Day 32	Unit - IV	The Gupta Empire- state and administration	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Guptas	Short Note Writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week VI	Day 33	Unit-IV	The Gupta Empire- state and administration	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Guptas	Short Note Writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week VI	Day 34	Unit-IV	The Gupta Empire- state and administration	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Guptas	Short Note Writing	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week VI	Day 35	Unit-IV	Post Gupta period :Vardhanas and Palas	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Post-Guptas in North India	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week VI	Day 36	Unit - IV	Post Gupta period :Vardhanas and Palas	Lecture and Discussion	After the completion of the topic the students will be able to explain the reign of the Post-Guptas in North India	Objective type questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week - VII	Day 37	Unit - V	Political development in the South – the Pallavas, the imperial Cholas, the Rashtrakutas and the Chalukyas.	Lecture and Discussion	After the completion of the topic the students will be able to explain the Political development in the South – the Pallavas, the imperial Cholas, the Rashtrakutas and the Chalukyas.	Critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week - VII	Day 38	Unit - V	Political development in the South – the Pallavas, the imperial Cholas, the Rashtrakutas and the Chalukyas.	Lecture and Discussion	After the completion of the topic the students will be able to explain the Political development in the South – the Pallavas, the imperial Cholas, the Rashtrakutas and the Chalukyas.	Critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week - VII	Day 39	Unit - V	The Arabs and the Turks in Indian politics –Ghaznivides and the Ghorid invasions.	Lecture and Discussion	After the completion of the topic the students will be able to explain the Political development in the South – the Pallavas, the imperial Cholas, the Rashtrakutas and the Chalukyas.	Objective type and critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week - VII	Day 40	Unit - V	The Arabs and the Turks in Indian politics – Ghaznivides and the Ghorid invasions.	Lecture and Discussion	After the completion of the topic the students will be able to explain the role of the Arabs and the Turks in Indian politics	Objective type and critical questions	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week - VII	Day 41	Unit - V	Indian Society during 650 –1200 A.D.- literature & language, temple architecture and Sculpture.	Lecture and Discussion	After the completion of the topic the students will be able to explain the Indian Society during 650 –1200 A.D.- through literature & language, temple architecture and Sculpture.	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Week - VII	Day 42	Unit - V	Indian Society during 650 –1200 A.D.- literature & language, temple architecture and Sculpture	Lecture and Discussion	After the completion of the topic the students will be able to explain the Indian Society during 650 –1200 A.D.- through literature & language, temple architecture and Sculpture.	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন
Week - VII	Day 43	Unit - V	Indian Society during 650 –1200 A.D.- literature & language, temple architecture and Sculpture	Lecture and Discussion	After the completion of the topic the students will be able to explain the Indian Society during 650 –1200 A.D.- through literature & language, temple architecture and Sculpture.	Home Assignment	1.Majumdar, Raychoudhary & Dutta :*An Advanced History of India* (Relevant Chapters) 2.Mahajan,V.D, *Ancient India.* 3.ড॰তচদ্দুক আমানুল হুছেইন

Signature of the Teacher
Department of History

Signature of HOD

Department of History
Rangapara College
TEACHING PLAN
B.A First Semester (2023-24)

Title of the Course: History of India (1200 CE)

(Minor)

Week	Day/ Hours Per Class = One Hour	Unit/Topic	Content /Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation Strategies	Suggested Study Materials Readings
Week-I	Day-1	Unit-I	Sources for reconstructing Ancient Indian History: archaeological; literary	Contact Classes	On completion of Unit-I, the students will be able to know about the sources of Ancient Indian History.	Objective type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

Week	Day/ Hours	Unit/Topic	Content /Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation Strategies	Suggested Study Materials Readings
Week-I	Day 2	Unit-I	Sources for reconstructing Ancient Indian History: archaeological; literary	Contact Classes	On completion of Unit-I, the students will be able to know about the sources of Ancient Indian History.	Objective type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week-I	Day 3	Unit-I	Sources for reconstructing Ancient Indian History: archaeological; literary	Non-contact Classes	On completion of Unit-I, the students will be able to know about the sources of Ancient Indian History.	Objective type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
	Day 4	Unit I	Sources for reconstructing Ancient Indian History: archaeological; literary	Non-contact Classes	On completion of Unit-I, the students will be able to know about the sources of Ancient Indian History.	Objective type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

Week-I	Day 5	Unit-I	Harappan Civilization: origin, extent, characteristics; first urbanization; decline.	Contact Classes	On completion of Unit-I, the students will be able to know about the earliest civilization of India.	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week-I	Day 6	Unit-I	Harappan Civilization: origin, extent, characteristics; first urbanization; decline.	Contact Classes	On completion of Unit-I, the students will be able to know about the earliest civilization of India.	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week-I	Day 7	Unit-I	Harappan Civilization: origin, extent, characteristics; first urbanization; decline.	Non-Contact Classes	On completion of Unit-I, the students will be able to know about the earliest civilization of India.	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week-II	Day 8	Unit-I	Harappan Civilization: origin, extent, characteristics; first urbanization; decline.	Contact Classes	On completion of Unit-I, the students will be able to know about the earliest civilization of India.	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Romila Thapar, Early India from the Beginnings to 1300, London, 2002.

Week-II	Day 9	Unit-I	Vedic Culture-Early and Later Vedic periods: Tribal Polity, economic developments; social stratification; religion and philosophy;	Contact Classes	After the completion of the topic the students will be able to about the Vedic Culture and development of society, religion and philosophy	Short note writing	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week-II	Day 10	Unit-I	Vedic Culture-Early and Later Vedic periods: Tribal Polity, economic developments; social stratification; religion and philosophy;	Contact Classes	After the completion of the topic the students will be able to about the Vedic Culture and development of society, religion and philosophy	Short note writing	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week-II	Day 11	Unit-I	Vedic Culture-Early and Later Vedic periods: Tribal Polity, economic developments; social stratification; religion and philosophy;	Contact Classes	After the completion of the topic the students will be able to about the Vedic Culture and development of society, religion and philosophy	Short note writing	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week-II	Day 12	Unit- I	Vedic Culture-Early and Later Vedic periods: Tribal Polity, economic developments; social stratification; religion and philosophy;	Non-Contact Classes	After the completion of the topic the students will be able to about the Vedic Culture and development of society, religion and philosophy	Short note writing	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week-III	Day 13	Unit-II	Second Urbanization; Rise of territorial states: Mahajanapadas	Contact Classes	On completion of the topic the students will about to know the rise of Janapadas, mahajanapadas and state system.	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

							Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week-III	Day 14	Unit-II	Second Urbanization; Rise of territorial states: Mahajanapadas.	Contact Classes	On completion of the topic the students will about to know the rise of Janapadas, mahajanapadas and state system.	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

Romila Thapar, Early India from the Beginnings to 1300, London, 2002. |
| | | | | | | | |
| Week III | Day 15 | Unit - II | Second Urbanization; Rise of territorial states: Mahajanapadas. | Non-Contact Classes | On completion of the topic the students will about to know the rise of Janapadas, mahajanapadas and state system. | Home Assignment | R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

Romila Thapar, Early India from the Beginnings to 1300, London, 2002. |
| Week III | Day 16 | Unit - II | Religious movements in North India: Jainism; Buddhism | Contact Classes | On completion of the topic the students will learn about different religious movements which developed Jainism and Buddhism | Objective types and few critical questions | R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 |
| Week III | Day 17 | Unit - II | Religious movements in North India: Jainism; Buddhism | Contact Classes | On completion of the topic the students will learn about different religious movements which developed Jainism and Buddhism | Objective types and few critical questions | R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 |

Week III	Day 18	Unit - II	Religious movements in North India: Jainism; Buddhism	Non-Contact Classes	On completion of the topic the students will learn about different religious movements which developed Jainism and Buddhism	Objective types and few critical questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week IV	Day 19	Unit - II	The Mauryas: Administrative system, Society and Economy; Asoka's Dhamma; Decline.	Contact Classes	After completion of the theme the students will able to learn about the earliest administrative system and its relation with new religious approach and the causes of the downfall of the Mauryas.	Short note writing	Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India.
Week IV	Day 20	Unit - II	The Mauryas: Administrative system, Society and Economy; Asoka's Dhamma; Decline.	Contact Classes	After completion of the theme the students will able to learn about the earliest administrative system and its relation with new religious approach and the causes of the downfall of the Mauryas.	Short note writing	Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India.
Week-IV	Day 21	Unit - II	The Mauryas: Administrative system, Society and Economy; Asoka's Dhamma; Decline.	Non-Contact Classes	After completion of the theme the students will able to learn about the earliest administrative system and its relation with new religious approach and the causes of the downfall of the Mauryas.	Short note writing	Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India.
Week IV	Day 22	Unit - II	Greek Invasion and its Impact.	Contact Classes	By completion of this topic it will help the students to know about the Greek invasion and its impact	Objective type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

Week IV	Day 23	Unit - II	Greek Invasion and its Impact.	Contact Classes	By completion of this topic it will help the students to know about the Greek invasion and its impact	Objective type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week IV	Day 24	Unit - II	Greek Invasion and its Impact.	Contact Classes	By completion of this topic it will help the students to know about the Greek invasion and its impact	Objective type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week V	Day 25	Unit - III	Political developments in Post–Mauryan period with special reference to Sungas, Kushanas, Kharavelas, Satavahanas.	Contact Classes	After the completion of the topic the students will be able to know the political developments in Post–Mauryan period	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week V	Day 26	Unit - III	Political developments in Post–Mauryan period with special reference to Sungas, Kushanas, Kharavelas, Satavahanas.	Contact Classes	After the completion of the topic the students will be able to know the political developments in Post–Mauryan period	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week V	Day 27	Unit - III	Political developments in Post–Mauryan period with special reference to Sungas, Kushanas, Kharavelas, Satavahanas.	Contact Classes	After the completion of the topic the students will be able to know the political developments in Post–Mauryan period	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

Week V	Day 28	Unit - III	Political developments in Post–Mauryan period with special reference to Sungas, Kushanas, Kharavelas, Satavahanas.	Contact Classes	After the completion of the topic the students will be able to know the political developments in Post–Mauryan period	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week V	Day 29	Unit - III	Political developments in Post–Mauryan period with special reference to Sungas, Kushanas, Kharavelas, Satavahanas.	Non-Contact Classes	After the completion of the topic the students will be able to know the political developments in Post–Mauryan period	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week V	Day 30	Unit - III	Political developments in Post–Mauryan period with special reference to Sungas, Kushanas, Kharavelas, Satavahanas.	Non-Contact Classes	After the completion of the topic the students will be able to know the political developments in Post–Mauryan period	Home Assignment	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week VI	Day 31	Unit - III	Sangam Age: Literature, Society and Culture.	Contact Classes	On completion of the topic the students will be able to know the growth of Literature, Society and Culture during Sangam Age	Objective types and few critical questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India. A History Of South India From Prehistoric Times To the Fall of Vijayanagar, K.A. Nilakanta Sastri.

Week VI	Day 32	Unit - III	Sangam Age: Literature, Society and Culture.	Contact Classes	On completion of the topic the students will be able to know the growth of Literature, Society and Culture during Sangam Age	Objective types and few critical questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India. A History Of South India From Prehistoric Times To the Fall of Vijayanagar, K.A. Nilakanta Sastri.
Week VI	Day 33	Unit - III	Sangam Age: Literature, Society and Culture.	Contact Classes	On completion of the topic the students will be able to know the growth of Literature, Society and Culture during Sangam Age	Objective types and few critical questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India. A History Of South India From Prehistoric Times To the Fall of Vijayanagar, K.A. Nilakanta Sastri.

Week VI	Day 34	Unit - III	Sangam Age: Literature, Society and Culture.	Contact Classes	On completion of the topic the students will be able to know the growth of Literature, Society and Culture during Sangam Age	Objective types and few critical questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India. A History Of South India From Prehistoric Times To the Fall of Vijayanagar, K.A. Nilakanta Sastri.
Week VI	Day 35	Unit - III	Sangam Age: Literature, Society and Culture.	Non-Contact Classes	On completion of the topic the students will be able to know the growth of Literature, Society and Culture during Sangam Age	Objective types and few critical questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th century, Delhi, Pearson India. A History Of South India From Prehistoric Times To the Fall of Vijayanagar, K.A. Nilakanta Sastri.
Week VI	Day 36	Unit - III	Sangam Age: Literature, Society and Culture.	Non-Contact Classes	On completion of the topic the students will be able to know the growth of Literature, Society and Culture during Sangam Age	Objective types and few critical questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007 Upinder Singh, A History of ancient and early medieval India: From the Stone Age to the 12th

							century, Delhi, Pearson India. A History Of South India From Prehistoric Times To the Fall of Vijayanagar, K.A. Nilakanta Sastri.
Week VII	Day 37	Unit IV	The Gupta Empire: administrative system, economy, society, art and architecture, cultural developments.	Contact Classes	After completion of this topic students will able to know about the Gupta age, renaissance of art culture and socio-economic re-stratification.	Seminar presentation	Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week VII	Day 38	Unit IV	The Gupta Empire: administrative system, economy, society, art and architecture, cultural developments.	Contact Classes	After completion of this topic students will able to know about the Gupta age, renaissance of art culture and socio-economic re-stratification.	Seminar presentation	Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week VII	Day 39	Unit IV	The Gupta Empire: administrative system, economy, society, art and architecture, cultural developments.	Non-Contact Classes	After completion of this topic students will able to know about the Gupta age, renaissance of art culture and socio-economic re-stratification.	Seminar presentation	Romila Thapar, Early India from the Beginnings to 1300, London, 2002.
Week VII	Day 40	Unit IV	The Gupta Empire: Administrative System, Economy, Society, Art and Architecture, Cultural developments.	Non-Contact Classes	After completion of this topic students will able to know about the Gupta age, renaissance of art culture and socio-economic re-stratification.	Seminar presentation	Romila Thapar, Early India from the Beginnings to 1300, London, 2002.

Week VII	Day 41	Unit IV	Post-Gupta Period: Land Grant Economy and Early Feudalism.	Contact Classes	On the completion of this topic students will able to know about the land grant economy and development of feudalism in ancient India.	Short Note Writing	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983
Week VII	Day 42	Unit IV	Post-Gupta Period: Land Grant Economy and Early Feudalism.	Contact Classes	On the completion of this topic students will able to know about the land grant economy and development of feudalism in ancient India.	Short Note Writing	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983
Week Week VIII	Day 43	Unit IV	Post-Gupta Period: Land Grant Economy and Early Feudalism.	Contact Classes	On the completion of this topic students will able to know about the land grant economy and development of feudalism in ancient India.	Short Note Writing	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983
Week VIII	Day 44	Unit IV	Post-Gupta Period: Land Grant Economy and Early Feudalism.	Non-Contact Classes	On the completion of this topic students will able to know about the land grant economy and development of feudalism in ancient India.	Short Note Writing	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983
Week VIII	Day 45	Unit V	Harshavardhana; Samanta system	Contact Classes	On the completion of this topic students will able to know about the development of Samanta System during the reign of Harshavardhana.	Objective types and few critical questions	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983

Week VIII	Day 46	Unit V	Harshavardhana; Samanta system	Contact Classes	On the completion of this topic students will able to know about the development of Samanta System during the reign of Harshavardhana.	Objective types and few critical questions	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983
Week VIII	Day 47	Unit V	Harshavardhana; Samanta system	Contact Classes	On the completion of this topic students will able to know about the development of Samanta System during the reign of Harshavardhana.	Objective types and few critical questions	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983
Week VIII	Day 48	Unit V	Harshavardhana; Samanta system	Non-Contact Classes	On the completion of this topic students will able to know about the development of Samanta System during the reign of Harshavardhana.	Objective types and few critical questions	R.S. Sharma, Aspects of Political Ideas and Institutions in Ancient India. New Delhi, Macmillan 1983
Week IX	Day 49	Unit V	Emergence of Rajputs in North India	Contact Classes	After completion of this topic students will able to know about the Emergence of Rajputs in North India	Oral Test	B.D.Chottopadhyaya, The making of Early Medieval India. New Delhi, OUP, 1994
Week IX	Day 50	Unit V	Emergence of Rajputs in North India	Contact Classes	After completion of this topic students will able to know about the Emergence of Rajputs in North India	Oral Test	B.D.Chottopadhyaya, The making of Early Medieval India. New Delhi, OUP, 1994

Week IX	Day 51	Unit V	Emergence of Rajputs in North India	Contact Classes	After completion of this topic students will able to know about the Emergence of Rajputs in North India	Oral Test	B.D.Chottopadhyaya, The making of Early Medieval India. New Delhi, OUP, 1994
Week IX	Day 52	Unit V	Emergence of Rajputs in North India	Non-Contact Classes	After completion of this topic students will able to know about the Emergence of Rajputs in North India	Oral Test	B.D.Chottopadhyaya, The making of Early Medieval India. New Delhi, OUP, 1994
Week IX	Day 53	Unit V	Political developments in South India with special reference to Cholas, Rashtrakutas, Chalukyas of Badami.	Contact Classes	After completion of this topic students will able to know about the political developments in South India	Group Discussion	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week IX	Day 54	Unit V	Political developments in South India with special reference to Cholas, Rashtrakutas, Chalukyas of Badami.	Contact Classes	After completion of this topic students will able to know about the political developments in South India	Group Discussion	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week X	Day 55	Unit V	Political developments in South India with special reference to Cholas, Rashtrakutas, Chalukyas of Badami	Contact Classes	After completion of this topic students will able to know about the political developments in South India	Group Discussion	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

	Day 56	Unit V	Political developments in South India with special reference to Cholas, Rashtrakutas, Chalukyas of Badami	Contact Classes	After completion of this topic students will able to know about the political developments in South India	Group Discussion	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week X							
Week X	Day 57	Unit VI	Arabs; Ghaznavids and Ghorids.	Contact Classes	On the completion of this topic students will learn about the invasion of a new power from the north western frontier	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week X	Day 58	Unit VI	Arabs; Ghaznavids and Ghorids.	Contact Classes	On the completion of this topic students will learn about the invasion of a new power from the north western frontier	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week X	Day 59	Unit VI	Arabs; Ghaznavids and Ghorids.	Contact Classes	On the completion of this topic students will learn about the invasion of a new power from the north western frontier	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007
Week X	Day 60	Unit VI	Arabs; Ghaznavids and Ghorids.	Contact Classes	On the completion of this topic students will learn about the invasion of a new power from the north western frontier	Oral Test / MCQ Type questions	R.S. Sharma, India's Ancient Past, New Delhi, OUP, 2007

Signature of the Teacher

Head of the Department
HISTORY
Rangapara College

RANGAPARA COLLEGE
RANGAPARA::SONITPUR::ASSAM
TEACHING PLAN/ CURRICULUM DELIVERY PLANNING
Period : Aug .2023.......... Dec .2023

Name of the Teacher: Rakesh Ch. Sarkar	Subject: BENGALI MAJOR/MINOR
Semester : FYUGP 1st	Paper code: BEN0100104 SHISHU O KISHOR SAHITYO
Number of Classes: 15	Unit: I (বুড়ো আংলা- অবনীন্দ্রনাথ ঠাকুর)

Objective of the Lesson: 1. The course is designed to introduce the characteristics of children's literature
2. An attempt is made to see and understand literary culture and life in the context of selected readings.

Week	Day/ Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	অবনীন্দ্রনাথ ঠাকুরের সাহিত্যিক পরিচয়।	Lecture and Discussion Method	The course will enable the students to get familiar with the Juvenile Literature which includes prose, poetry and fiction along with the contributions of individual authors in the fields of Modern Bengali Literature. The course will also help to develop their social and cultural knowledge.	১। অবনীন্দ্রনাথ ঠাকুরের জীবন সম্পর্কে পরিচয় প্রদান। ২। অবনীন্দ্রনাথ ঠাকুরের সাহিত্যিক পরিচয় সম্পর্কে পরিচয় প্রদান।	১। বুড়ো আংলা – অবনীন্দ্রনাথ ঠাকুর ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়
2nd	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	শিশু ও কিশোর সাহিত্য এবং বুড়ো আংলা	Lecture and Discussion Method		১। শিশু ও কিশোর সাহিত্য রচনায় অবনীন্দ্রনাথ ঠাকুরের কৃতিত্ব আলোচনা। ২। শিশু সাহিত্য হিসেবে বুড়ো আংলার সার্থকতা বিচার।	১।সাহিত্যচর্চা -বুদ্ধদেব বসু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়
3rd	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	আমতলি চলনবিল	Lecture and Discussion Method		১। আমতলি অধ্যায়টির আদ্যোপান্ত বিচার করো। ২। চলনবিল অধ্যায়টির আদ্যোপান্ত বিচার করো।	১।সাহিত্যচর্চা -বুদ্ধদেব বসু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়
4th	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	চকা নিকোবর শৃগাল	Lecture and Discussion Method		১। চকা নিকোবর অধ্যায়টির মধ্য দিয়ে যেসব পশু পক্ষীর চিত্র পরিলক্ষিত হয়েছে তার বিবরণ।	১।সাহিত্যচর্চা -বুদ্ধদেব বসু ২। বাংলা শিশু সাহিত্যের

						২। শৃগাল অধ্যায়টির মধ্য দিয়ে ভৌগলিক যে চিত্র ফুটে উঠেছে তার বিবরণ।	ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়
5th	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	হংপাল টুং-সোন্নাটা-ঘুম	Lecture and Discussion Method		১। হংপাল অধ্যায়টির আদ্যোপান্ত বিচার করো। ২। টুং-সোন্নাটা-ঘুম অধ্যায়টির আদ্যোপান্ত বিচার করো।	১।সাহিত্যচর্চা -বুদ্ধদেব বসু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়
6th	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	যোগী-গোফা আসামী বুরঞ্জি	Lecture and Discussion Method		১। যোগী-গোফা অধ্যায়টির মধ্য দিয়ে ভৌগলিক যে চিত্র ফুটে উঠেছে তার বিবরণ। ২। আসামী বুরঞ্জি অধ্যায়টির মধ্য দিয়ে অসমে যে প্রাকৃতিক ও ভৌগলিক যে চিত্র ফুটে উঠেছে তার বিবরণ।	১।সাহিত্যচর্চা -বুদ্ধদেব বসু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়
7th	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	বুড়ো আংলা	Lecture and Discussion Method		১। বুড়ো আংলা গ্রন্থটির মধ্য দিয়ে লেখকের শিল্পী মানসিকতার যে পরিচয় ফুটে উঠেছে তা বর্ণনা করো।	১।সাহিত্যচর্চা -বুদ্ধদেব বসু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়
8th	2 hours	শিশু ও কিশোর সাহিত্য (বুড়ো আংলা)	বুড়ো আংলা	Lecture and Discussion Method		UNIT TEST & SESSIONAL EXAMINATION	১।সাহিত্যচর্চা -বুদ্ধদেব বসু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ – আশা গঙ্গোপাধ্যায়

HEAD
Department of Bengali
Rangapara College, Rangapara

Signature of the Teacher

Name of the Teacher: KABERI MUKHERJEE	Subject: BENCORE PAPER-I MAJOR/MINOR
Semester : FYUGP 1ST	Paper code: BEN0100104 SHISHU O KISHOR SAHITYO
Number of Classes: 15	Unit: III

Objective of the Lesson: 1. The course is designed to introduce the characteristics of children's literature 2. An attempt is made to see and understand literary culture and life in the context of selected readings**.**

Week	Day/Hours allotted	Topic	Content/ Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1hour	পদিপিসির বর্মীবাক্স	শিশু সাহিত্যের স্বরূপ	Lecture and Discussion Method	The course will enable the students to get familiar with the Juvenile Literature which includes prose, poetry and fiction along with the contributions of individual authors in the fields of Modern Bengali Literature. The course will also help to develop their social and cultural knowledge	১। বাংলা শিশু সাহিত্যের সংজ্ঞা ও স্বরূপ সম্পর্কে ধারণা।	পদিপিসির বর্মীবাক্স
2nd	1hour	পদিপিসির বর্মীবাক্স	লেখক পরিচিতি	Lecture and Discussion Method		১। লীলা মজুমদারের সাহিত্যিক পরিচয় সম্পর্কে ধারণা।	পদিপিসির বর্মীবাক্স
3rd	1hour	পদিপিসির বর্মীবাক্স	গল্প আলোচনা	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটির আদ্যোপান্ত বিষয় সম্পর্কে আলোচনা।	পদিপিসির বর্মীবাক্স
4th	1hour	পদিপিসির বর্মীবাক্স	গল্প আলোচনা	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটির নামকরণের সার্থকতা সম্পর্কে আলোচনা।	পদিপিসির বর্মীবাক্স
5th	1hour	পদিপিসির বর্মীবাক্স	গল্প আলোচনা	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটির পাঠ্যালোচনা।	পদিপিসির বর্মীবাক্স
6th	1hour	পদিপিসির বর্মীবাক্স	বিষয়বস্তু	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটির বিষয়বস্তু সম্পর্কে আলোচনা।	পদিপিসির বর্মীবাক্স
7th	1hour	পদিপিসির বর্মীবাক্স	পাচু মামার চরিত্র	Lecture and Discussion Method		১। পাচু মামার চরিত্রটির আদ্যোপান্ত বিচার করো।	পদিপিসির বর্মীবাক্স
8th	1hour	পদিপিসির বর্মীবাক্স	কথকের চরিত্র	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটিতে কথকের চরিত্রের ভূমিকা আলোচনা করো।	পদিপিসির বর্মীবাক্স
9th	1hour	পদিপিসির বর্মীবাক্স	পদিপিসির চরিত্র	Lecture and Discussion Method		১। পদিপিসির চরিত্রটি সম্পর্কে আলোচনা করো।	পদিপিসির বর্মীবাক্স

10th	1hour	পদিপিসির বর্মীবাক্স	অন্যান্য চরিত্র	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটিতে মুখ্য চরিত্রগুলির ভূমিকা আলোচনা করো।	পদিপিসির বর্মীবাক্স
11th	1hour	পদিপিসির বর্মীবাক্স	অন্যান্য চরিত্র	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটিতে মুখ্য চরিত্রগুলির ভূমিকা আলোচনা করো।	পদিপিসির বর্মীবাক্স
12th	1hour	পদিপিসির বর্মীবাক্স	পদিপিসির বর্মীবাক্স	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটি শিশু সাহিত্য হিসেবে কতদূর সার্থক সে সম্পর্কে আলোচনা।	পদিপিসির বর্মীবাক্স
13th	1hour	পদিপিসির বর্মীবাক্স	পদিপিসির বর্মীবাক্স	Lecture and Discussion Method		১। পদিপিসির বর্মীবাক্স গ্রন্থটি থেকে আসন্ন প্রশ্ন সমূহের আলোচনা	পদিপিসির বর্মীবাক্স
14th	1hour	পদিপিসির বর্মীবাক্স	পদিপিসির বর্মীবাক্স	Lecture and Discussion Method		Unit test & Home assignment	পদিপিসির বর্মীবাক্স
15th	1hour	পদিপিসির বর্মীবাক্স	পদিপিসির বর্মীবাক্স	-		Sessional examination	

Kaberi Mukherjee

Signature of the Teacher

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Department of Bengali
Rangapara College, Rangapara

Name of the Teacher: Kabita Saha	**Subject: BEN CORE PAPER-I (MAJOR/MINOR)**
Semester : 1st semester	**Paper code:** BEN0100104 SHISHU O KISHOR SAHITYO
Number of Classes: 15	**Unit: 4**
Objective of the Lesson: 1. The course is designed to introduce the characteristics of children's literature **2. An attempt is made to see and understand literary culture and life in the context of selected readings.**	

Week	Day/Hours allotted	Topic	Content/Teaching Points	Teaching Methods	Expected Learning Outcomes	Evaluation strategies	Suggested study materials
1st	1hours	প্রফেসর শঙ্কু	লেখক পরিচিতি	Discussion and Teaching Method	The course will enable the students to get familiar with the Juvenile Literature which includes prose, poetry and fiction along with the contributions of individual authors in the fields of Modern Bengali Literature. The course will also help to develop their social and cultural knowledge	লেখক সাহিত্যিক পরিচয় সম্পর্কে জ্ঞান আহরণ	১।প্রফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
2nd	1 hours	প্রফেসর শঙ্কু	কল্পবিজ্ঞান	Discussion and Teaching Method		কল্পবিজ্ঞান সম্বন্ধে সম্যক ধারণা	১।প্রফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
3rd	1 hours	প্রফেসর শঙ্কু	কল্পবিজ্ঞান ও সত্যজিৎ রায়	Discussion and Teaching Method		কল্পবিজ্ঞান সম্বন্ধে সত্যজিৎ রায়ের ধারণা সম্পর্কে আলোচনা।	১।প্রফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
4th	1 hours	প্রফেসর শঙ্কু	ব্যোমযাত্রীর ডায়েরি	Discussion and Teaching Method		ব্যোমযাত্রীর ডায়েরি গল্পের মূলভাব আলোচনা।	১।প্রফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
5th	1 hours	প্রফেসর শঙ্কু	ব্যোমযাত্রীর ডায়েরি	Discussion and Teaching Method		ব্যোমযাত্রীর ডায়েরি গল্পটির মধ্যে কল্পবিজ্ঞানের স্থান সম্পর্কে আলোচনা,।	১।প্রফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
6th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল	Discussion and Teaching Method		প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল পাঠ্য আলোচনা	১।প্রফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
7th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল	Discussion and Teaching Method		প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল পাঠ্য অবলম্বনে লেখকের শিল্পী মানসিকতার	১।প্রফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের

							পরিচয় আলোচনা।	ক্রমবিকাশ
8th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও গোলক রহস্য	Discussion and Teaching Method			প্রোফেসর শঙ্কু ও গোলক রহস্য পাঠ্য আলোচনা।	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
9th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও গোলক রহস্য	Discussion and Teaching Method			প্রোফেসর শঙ্কু ও গোলক রহস্য পাঠ্য অবলম্বনে লেখক যেভাবে রহস্যের উন্মোচন করেছেন সে সম্পর্কে আলোচনা।	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
10th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও গোলক রহস্য	Discussion and Teaching Method			প্রোফেসর শঙ্কু ও গোলক রহস্য গল্পের চরিত্র আলোচনা।	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
11th	1 hours	প্রফেসর শঙ্কু	ব্যোমযাত্রীর ডায়েরি	Discussion and Teaching Method			ব্যোমযাত্রীর ডায়েরি গল্পের নামকরণের সার্থকতা বিচার।	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
12th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল - Test	Discussion and Teaching Method			প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল গল্পের চরিত্র আলোচনা।	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
13th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও গোলক রহস্য- Test	Discussion and Teaching Method			প্রোফেসর শঙ্কু ও গোলক রহস্য গল্পের নামকরণের সার্থকতা বিচার।	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
14th	1 hours	প্রফেসর শঙ্কু	প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল	Discussion and Teaching Method			প্রোফেসর শঙ্কু ও আশ্চর্য পুতুল গল্পের নামকরণের সার্থকতা বিচার।	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ
15th	1 hours	প্রফেসর শঙ্কু	প্রফেসর শঙ্কু	Discussion and Teaching Method			**UNIT TEST & HOME ASSIGNMENT**	১।প্রোফেসর শঙ্কু ২। বাংলা শিশু সাহিত্যের ক্রমবিকাশ

HEAD
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Signature of the Teacher