Lesson plan of 2025-26
(1st SEMESTER)

DEPARTMENT: MATH & SCIENCE	**SEMESTER:1st**	**NAME OF THE TEACHING FACULTY:** G. BALA KRUSHNA REDDY, SANJUKTA DAS
SUBJECT: Communication Skills in English	**NO.OF CLASSES ALLOTTED PER WEEK: 3**	**SEMESTER FROM:** 06/08/2025 To 04/12/2025 **NO.OF WEEKS:15**
WEEK	**CLASS DAY**	**THEORY TOPICS**
1st	1st	Basics of communication: Introduction, meaning
	2nd	Definition, process of communication
	3rd	Types of communication: formal and informal
2nd	1st	Verbal, non-verbal and barriers to effective communication
	2nd	7 Cs for effective communication (considerate, concrete, concise, clear, complete, correct, courteous)
	3rd	Art of Effective communication : Choosing words, Voice, Modulation
3rd	1st	Art of Effective communication : Clarity, Time, Simplification of words
	2nd	Technical Communication
	3rd	Introduction: Soft Skills and Hard Skills
4th	1st	Importance of Soft Skills
	2nd	Life Skills: Self-awareness and Self-analysis
	3rd	Applying Soft Skills across cultures
5th	1st	Class test & Previous class discussion
	2nd	Comprehension, vocabulary enhancement
	3rd	Grammar exercises based on reading
6th	1st	“An Astrologer’s Day”
	2nd	“An Astrologer’s Day” & Discussion
	3rd	“The Missing Mail”
7th	1st	“The Missing Mail” & Discussion
	2nd	” Doctor’s Word” & Discussion
	3rd	“The Gift of the Magi” & Discussion
8th	1st	“Stopping by Woods on a Snowy Evening”
	2nd	“Stopping by Woods on a Snowy Evening& Discussion
	3rd	“Where the Mind is Without Fear”
9th	1st	Where the Mind is Without Fear”& Disussion

	2nd	Summary writing
	3rd	Report writing
10th	1st	Letters: Business
	2nd	Letters: Personal
	3rd	Drafting e-mail
11th	1st	Drafting notices
	2nd	Drafting Minutes of a Meeting
	3rd	Filling-up different forms :Banks,Reservation forms,etc
12th	1st	Filling-up different forms :On-line forms for placement
	2nd	Class Test & Discussion
	3rd	Vocabulary of commonly used words
13th	1st	Vocabulary of commonly used words & discussion
	2nd	Commonly used administrative terms
	3rd	One-word substitution
14th	1st	Parts of Speech
	2nd	Parts of Speech & discussion
	3rd	Active and Passive voice
15th	1st	Active and Passive voice & discussion
	2nd	Tenses
	3rd	Punctuation

G.BALAKRUSHNA REDDY
SIGNATURE OF THE FACULTY

SANJUKTA DAS
SIGNATURE OF THE FACULTY

LESSON PLAN
APPLIED PHYSICS-I

DISCIPLINE: Math & Science	SEMESTER: 1st Winter 2025	NAME OF THE TEACHING FACULTY: BINAYAK SAHU (Sr. Lecturer) MANASWINEE PATNAIK (Lecturer Stage-II)

Subject:Applied Physics-I	No. Of. Classes Allotted Per Week:04	Semester From 06/08/2025 to 04/12/2025
WEEK	**CLASSDAY**	**THEORY**
1st	1st	Physical quantities, fundamental and derived units, systems of units
	2nd	Dimension and Dimensional formulae of physical quantities.
	3rd	Principle of homogeneity, Dimensional equations & their applications(Conversion from one system of units to other)
	4th	Checking of Correctness of dimensional equations
2nd	1st	Derivation of simple equations, Limitation of dimensional analysis
	2nd	Measurements ,Need, Measuring instruments, Least count, Types of measurements(direct & indirect),
	3rd	Errors in measurements(systematic and random), Types of errors
	4th	Error estimation,Numericals
3rd	1st	Error propagation, Numerical, Significant figures
	2nd	Classnote & Assignment Checking
	3rd	Scalar & vector quantities with examples, representation of vector, types of vectors
	4th	Addition and subtraction of vectors, Triangle and parallelogram law(statement only), numericals
4th	1st	Scalar and vector product, numericals
	2nd	Resolution of a vector and its application to inclined plane and lawn roller, numericals
	3rd	Class Note & Assignment Checking
	4th	Force, momentum, statement and derivation of conservation of linear momentum
5th	1st	Its applications such as recoil of gun, rockets
	2nd	Impulse and its applications
	3rd	Circular motion, definition of angular displacement, angular velocity, angular acceleration, frequency, time period
	4th	Relation between linear and angular velocity,linear acceleration and angular acceleration, Numericals
6th	1st	Centripetal and centrifugal forces with examples
	2nd	Expression and applications such as banking of roads and bending of cyclist
	3rd	Work concept and units, Examples of zero work, positive work and negative work
	4th	Friction concept, Types of friction, laws of limiting friction

7th	1st	coefficient of friction, reducing friction and its engineering applications
	2nd	Work done in moving an object on horizontal and inclined plane for rough and plane surfaces and related applications
	3rd	Energy and its units, kinetic energy, gravitational potential energy with examples and derivations
	4th	Mechanical energy, conservation of mechanical energy for freely falling bodies
8th	1st	Transformation of energy (examples)
	2nd	Power and its units, power and work relationship
	3rd	Calculation of power(numerical problems)
	4th	Class note & Assignment Checking
9th	1st	Translational and rotational motions with examples
	2nd	Definition of torque and angular momentum and their examples
	3rd	Conservation of angular momentum (quantitative)and its applications
	4th	NUMERICALS, moment of inertia and its physical significance
10th	1st	Radius of gyration for rigid body
	2nd	Theorems of parallel and perpendicular axes(statements only)
	3rd	Moment of inertia of rod, disc, ring and sphere(hollow and solid)
	4th	Elasticity, definition of stress and strain, moduli of elasticity
11th	1st	Hooke's law, significance of stress-strain curve
	2nd	Pressure definition, units, atmospheric pressure, gauge pressure, absolute pressure
	3rd	Fortin's barometer and its applications
	4th	Surface tension, concept, units, cohesive and adhesive forces
12th	1st	Angle of contact, ascent formula, numericals
	2nd	Applications of surface tension, effect of temperature and impurity on surface tension
	3rd	Viscosity and coefficient of viscosity, terminal velocity
	4th	Stoke's law and effect of temperature on viscosity, application in hydraulic systems
13th	1st	Hydrodynamics: fluid motion, stream line and turbulent flow, Reynold's number equation of continuity
	2nd	Bernoulli theorem and its applications, numericals
	3rd	Concept of heat and temperature, scales of temperature and their relationship
	4th	Modes of heat transfer(conduction, convection and radiation with examples)
14th	1st	Specific heats, numericals
	2nd	Types of thermometers(mercury thermometer, bimetallic thermometer, platinum resistance thermometer, pyrometer)
	3rd	Uses of thermometers
	4th	Expansion of solids, liquids and gases
15th	1st	Coefficient of linear, surface and cubical expansions
	2nd	Relation between expansion coefficients, numericals
	3rd	Co-efficient of thermal conductivity, engineering applications
	4th	Numericals & Assignment Checking

M. Pattnaik
Lect. Stage-II Physics

B. Sahu
Sr. Lect. Physics

LESSON PLAN

DISCIPLINE: MATH AND SCIENCE	**SEMESTER:** 1st	**NAME OF THE TEACHING FACULTIES:** Shishir Kumar Naik Sankar Kumar Pradhan

SUBJECT: MATHEMATICS-I	NO. OF.PERIODS PER WEEK	**SEMESTER:** 06/08/2025 to 04/12/2025
WEEK	**CLASS DAY**	**THEORY**
1ST	1ST	INTRODUCTION TO TRIGONOMETRY CONCEPT OF ANGLES & MEASUREMENTS OF ANGLES
	2ND	TRIGONOMETRICAL RATIOS OF ALLIED ANGLES
	3RD	PROBLEMS BASED ON T-RATIOS
	4TH	SUM & DIFFERENCE FORMULA OF TRIGONOMETRY & THEIR APPLICATIONS
2ND	1ST	SUM & DIFFERENCE FORMULA OF TRIGONOMETRY & THEIR APPLICATIONS
	2ND	PROBLEMS RELATED TO SUM & DIFFERENCE FORMULA
	3RD	PROBLEMS RELATED TO SUM & DIFFERENCE FORMULA
	4TH	PRODUCT FORMULA
3RD	1ST	TRANSFORMATION OF PRODUCT FORMULA TO SUM & DIFFERENCE AND VICE-VERSA
	2ND	MULTIPLE ANGLES
	3RD	PROBLEMS BASED ON MULTIPLE ANGLES
	4TH	PROBLEMS BASED ON MULTIPLE ANGLES
4TH	1ST	GRAPH RELATED TO TRIGONOMETRIC FUNCTIONS & EXPONENTIAL FUNCTIONS
	2ND	PROBLEMS OF EXERCISE
	3RD	DEFINITION OF RELATION & FUNCTION AND GRAPH OF DIFFERENT TYPE OF FUNCTION
	4TH	CONCEPT OF LIMITS & STANDARD FORMULA OF LIMITS
5TH	1ST	PROBLEMS RELATED TO STANDARD FORMULA
	2ND	PROBLEMS RELATED TO STANDARD FORMULA
	3RD	PROBLEMS RELATED TO STANDARD FORMULA
	4TH	DEFINITION OF DIFFERENTIATION &

		FINDING DERIVATIVES BY USING FIRST PRINCIPLE
6TH	1ST	FINDING DERIVATIVES BY USING FIRST PRINCIPLE
	2ND	DIFFERTIATION OF SUM OF FUNCTIONS
	3RD	PROBLEM RELATED TO SUM OF FUNCTIONS
	4TH	DIFFERTIATION OF PRODUCT OF FUNCTIONS
7TH	1ST	PROBLEM RELATED TO PRODUCT OF FUNCTIONS
	2ND	DIFFERTIATION OF QUOTIENT OF FUNCTIONS
	3RD	PROBLEM RELATED TO QUOTIENT OF FUNCTIONS
	4TH	DIFFERNTIATION OF COMPOSITE FUNCTIONS
8TH	1ST	PROBLEM RELATED TO COMPOSITE OF FUNCTIONS
	2ND	DIFFERENTIATION OF TRIGONOMETRIC AND INVERSE TRIGONOMETRIC FUNCTIONS
	3RD	PROBLEMS RELATED TO TRIGONOMETRIC AND INVERSE TRIGONOMETRIC FUNCTIONS
	4TH	LOGARITHMIC DIFFERENTIATION
9TH	1ST	PROBLEMS RELATED TO LOGARITHMIC DIFFERENTIATION
	2ND	DEFINITION OF REAL,IMAGINARY & COMPLEX NUMBER
	3RD	ALGEBRA ON COMPLEX NUMBER
	4TH	SIMPLE PROBLEMS RELATED TO PROBLEM ON ALGEBRA ON COMPLEX NUMBER
10TH	1ST	POLAR & CARTESIAN FORM OF COMPLEX NUMBER AND IT'S CONVERSION FROM ONE FORM TO ANOTHER
	2ND	CONJUGATE,MODULUS & AMPLITUDE OF A COMPLEX NUMBER
	3RD	DE MOIVRE'S THEOREM
	4TH	PROBLEMS RELATED TO DE MOIVRE'S THEOREM
11TH	1ST	EXERCISES ON COMPLEX NUMBER
	2ND	EXERCISES ON COMPLEX NUMBER
	3RD	DEFINITION OF PROPER ,IMPROPER FRACTIONS & PARTIAL FRACTIONS
	4TH	METHOD TO RESOLVE PROPER FRACTIONS INTO PARTIAL FRACTIONS WITH DENOMINATOR CONTAINING NON-REPEATED LINEAR FACTORS

12TH	1ST	PROBLEMS OF PARTIAL FRACTIONS WITH DENOMINATOR CONTAINING NON-REPEATED LINEAR FACTORS
	2ND	METHOD TO RESOLVE PROPER FRACTIONS INTO PARTIAL FRACTIONS WITH DENOMINATOR CONTAINING REPEATED LINEAR FACTORS
	3RD	PROBLEMS OF PARTIAL FRACTIONS WITH DENOMINATOR CONTAINING REPEATED LINEAR FACTORS
	4TH	PARTIAL FRACTION WITH NON REPEATED QUADRATIC FACTORS
13TH	1ST	PROBLEMS OF PARTIAL FRACTION WITH NON REPEATED QUADRATIC FACTORS
	2ND	PARTIAL FRACTION OF IMPROPER FRACTION
	3RD	PROBLEMS RELATED TO IMPROPER FRACTION
	4TH	DEFINITION OF PERMUTATION & COMBINATION. FINDING VALUE OF ${}^{n}P_{r}$&${}^{n}C_{r}$
14TH	1ST	SIMPLE EXAMPLES RELATED TO ${}^{n}P_{r}$&${}^{n}C_{r}$
	2ND	BINOMIAL THEOREM FOR POSITIVE INTEGRAL INDEX
	3RD	PROBLEM RELATED TO BINOMIAL THEOREMS
	4TH	PROBLEM RELATED TO BINOMIAL THEOREMS
15TH	1ST	BINOMIAL THEOREM FOR ANY INDEX
	2ND	PROBLEM RELATED TO BINOMIAL THEOREM FOR ANY INDEX
	3RD	DOUBT CLEARING CLASSES
	4TH	DOUBT CLEARING CLASSES

S K Pradhan
Guest Faculty Mathematics

S. K. Naik
Lecturer Mathematics

LESSON PLAN

DISCIPLINE:	SEMESTER:	NAME OF THE TEACHING FACULTIES:
MATH AND SCIENCE	FIRST (Common to 1st & 2nd sem)	MISS DIPTI LAXMI BHUYAN, Sr. LECTURER MISS RASMI PRABHA SAHU, LECTURER

SUBJECT: Environmental Science Course Code-TH 5(a)		SEMESTER FROM: 06/08/2025 TO 04/12/2025
COURSE OUTCOMES		At the end of the course student will be able to 1. Understand the ecosystem and terminology and solve various engineering problems applying ecosystem knowledge to produce eco-friendly products. 2. Understand the suitable air, extent of noise pollution, and control measures and acts. 3. Understand the water and soil pollution, and control measures and acts. 4. Understand different renewable energy resources and efficient process of harvesting. 5. Understand solid Waste Management, ISO 14000 & Environmental Management.
WEEK	NO. OF. DAYS PER WEEK CLASS	THEORY
1st	1ST	**Ecosystem** - Introduction to environmental scienc - Structure of ecosystem.
	2ND	- -Biotic & Abiotic components Food chain and food web.
	3RD	- Aquatic (Lentic and Lotic)
	4TH	- Terrestrial ecosystem Carbon Cycle

2nd	1ST	- , Nitrogen cycle.,Sulphur Cycle
	2ND	- Phosphorus cycle..
	3RD	- Global warming, Causes, effects, process
	4TH	- Green House Effect, Ozone depletion.
3rd	1ST	- General discussion and doubt clearing.
	2ND	- **Air and, Noise Pollution** - Definition of pollution and pollutant, Natural and man-made sources of air pollution (Refrigerants, I.C., Boiler)
	3RD	- Air Pollutants: Types, Particulate Pollutants: Effects. Control of air pollution.
	4TH	- Bag filter, Cyclone separator.
4th	1ST	- Electrostatic Precipitator, Gaseous Pollution Control.
	2ND	- Absorber, Catalytic Converter
	3RD	- Effects of air pollution due to Refrigerants, I.C., Boiler
	4TH	- Noise pollution: sources of pollution.
5th	1ST	- Measurement of pollution level, Effects of Noise pollution.
	2ND	- Noise pollution (Regulation and Control) Rules, 2000.
	4TH	- General discussion and doubt clearing.
6th	1ST	- **Water and Soil Pollution** - Sources of water pollution, Types of water pollutants.
	2ND	- Characteristics of water pollutants Turbidity, pH,
	3RD	- total suspended solids - Total solids.
	4TH	- BOD and COD: Definition, calculation
7th	1ST	- Waste Water Treatment. - Primary methods: froth floatation
	2ND	- Waste Water Treatment. - Primary methods: froth floatation
	3RD	- Secondary methods: Activated sludge treatment,.
	4TH	- Trickling filter , Bioreactor
8th	1ST	- Tertiary Method: Membrane separation technology, RO (reverse osmosis

	2ND	- Causes, Effects and Preventive measures of Soil Pollution
	3RD	- Causes-Excessive use of Fertilizers, Pesticides and Insecticides, Irrigation, E-Waste.
	4TH	- General discussion and doubt clearing.
9th	1ST	**Renewable sources of Energy Solar Energy**: - Sources of energy, Renewable and non-renewable sources of energy. - Basics of Solar energy.
	2ND	- Flat plate collector (Liquid & Air). Theory of flat plate col- lector.
	3RD	- Importance of coating. Advanced collector.
	4TH	- Solar pond. Solar water heater, solar dryer. Solar stills.
10th	1ST	- Biomass: Overview of biomass as energy source. Thermal characteristics of biomass as fuel. Anaerobic digestion.
	2ND	- Biogas production mechanism. Utilization and storage of biogas.
	3RD	- Wind energy: Current status and future prospects of wind energy. Wind energy in India. - Environmental benefits and problem of wind energy.
	4TH	- New Energy Sources: Need of new sources. Different types new energy sources.
11th	1ST	- Applications of (Hydrogen energy, Ocean energy resources, Tidal energy conversion.)
	2ND	- Concept, origin and power plants of geothermal energy.
	3RD	- General discussion and doubt clearing.
	4TH	**Solid Waste Management, ISO 14000 & Environmental Management** - Solid waste generation- - Sources and characteristics of waste Municipal solid waste
12th	1ST	- E- Waste, bio- medical waste. - Sources, effect, control.
	2ND	- Metallic wastes and Non-Metallic wastes (lubricants, plastics, rubber) from industries.
	3RD	- Collection and disposal: MSW (3R, principles, energy recovery, sanitary landfill)
	4TH	- Hazardous waste. Air quality act 2004.
13th	1ST	- Air pollution control act 1981 and water pollution control act 1996 - Case studied.
	2ND	- Structure and role of Central and state pollution control board. - Case studied
	3RD	- Concept of Carbon Credit, Carbon Footprint.
	4TH	- International submits on carbon credit, Current status of carbon foot print.

14th	1ST	- Environmental management in fabrication industry
	2ND	- ISO14000: Implementation in industries, Benefits
	3RD	- General discussion and doubt clearing.
	4TH	- Revision/ Previous year question discussion.
15th	1ST	- Revision/ Previous year question discussion
	2ND	- Revision/ Previous year question discussion
	3RD	- Revision/ Previous year question discussion
	4TH	- Revision/ Previous year question discussion

Miss Dipti Laxmi Bhuyan
Sr. Lecturer, Chemistry

B. Sahu
Sr. Lect. Physics

Signature of HOD
Math & Science dept.
UCPES, BAM