LESSON PLAN FOR ACADEMIC SESSION 2022-23

Discipline: Physics	Semester: 2nd Branch: Electrical	Name of the Teaching Faculty: Abhilash Padhy
Subject: Engg. Physics (Th 2A)	No. of Days/per week class allotted: 04	Semester From date: 20/03/2023 To Date: 27/06/2023 No. of Weeks: 14
Week	Class Day/ Period	Topics to be covered

Week	Class Day/ Period	Topics to be covered
1st (20-25) Mar.	1st	Introduction to Physics and Physical quantities, fundamental and derived units, System of Units (M.K.S. , C.G.S. , F.P.S. , S.I.), Metric Prefixes
	2nd	Definition of dimension and Dimensional formulae of physical quantities,Dimensional Equations and Principle of Homogeneity, Checking the dimensional correctness of physical relations
	3rd	Definition and concept of scalar and vector quantities, examples and types of vector
	4th	Triangle and parallelogram law of vector addition, Simple Numericals
2nd (27 Mar. -1 April)	1st	Resolution of vectors, vector multiplication(scalar and vector product)
	2nd	Discussion of Assignment 1 and 2
	3rd	Concept of rest and motion, displacement,speed,velocity,acceleration,force (Definition, formula, dimension & SI units), equations of motion under gravity
	4th	Definition and example of projectile, Time of flight, maximum height, horizontal range, for projectile fired at an angle
3rd (3-8) April	1st	Equation of trajectory for projectile fired at an angle, condition for maximum horizontal range
	2nd	circular motion(angular displacement,velocity,acceleration), relation between linear velocity and angular velocity, relation between linear and angular acceleration
4th (10-15) April	11th	Discussion of Assignment 3
	12th	Definition, formula and SI unit of work
5th (17-22) April	1st	Deinition and concept of friction, types of friction(static and dynamic),limiting friction, laws of limiting friction, coefficient of friction, simple numericals and methods of reducing friction
	2nd	Newton's laws of gravitation- Statement and Explanation, Universal gravitational constant (G)- Definition, Unit and Dimension, Discussion of Assignment 4
	3rd	Acceleration due to gravity(g)- Definition and Concept, Relation between g and G and comparison between mass and weight, variation of g with altitude and depth (Explanation)
	4th	kepler's laws of planetary motion, Monthly Assessment1
6th (24-29) April	1st	Simple Harmonic Motion (SHM)- Definition and Examples
	2nd	Expression for displacement, velocity, acceleration of a body in SHM
	3rd	Wave motion-Definition & Concept, Transverse and Longitudinal wave motion- Definition, Examples & Comparison
	4th	Definition of different wave parameters(amplitude, wavelength,frequency, timeperiod), Derivation of relation between velocity,frequency and wavelength of a wave.
7th (1-6) May	1st	Ultrasonics- definition, properties and applications
	2nd	Heat and Temperature- definition,cocept,units and difference, Discussion of Assignment 5
8th (8-13) May	1st	specific heat, change of state, latent heat (concept, definition, unit, dimension) with simple numericals
	2nd	Definition and concept of thermal expansion
	3rd	expansion of solids, coefficient of linear,superficial and cubical expansion, relation between alpha, beta, gamma

	4th	cocept and relation of work and heat,joules mechanical equivalent of heat,first law of thermodynamics
9th (15-20) May	1st	Discussion of Assignment 6
	2nd	Definition and laws of reflection and refraction
10th (22-27) May	1st	definition and concept of refractive index, simple numericals
	2nd	Critical angle and total internal reflection
	3rd	Refraction through prism(ray diagram and formula)
	4th	Fibre optics: definition, properties and applications
11th (29th May -3rd June)	1st	Discussion of Assignment 7 and Monthly Assessment2
	2nd	Difinition and concept of Electrostatics, Statement and explaination of Coloumb's law, definition of unit charge, absolute and relative pemittivity
	3rd	electric field, electric field intensity
	4th	Electric Potential and Electric Potential Difference (Definition, Formula & SI Units)
12th (5-10) June	1st	Capacitance,series and parallel combination of capacitors, simple numericals
	2nd	Magnet, properties of magnet, Coloumb's laws in magnetism, Unit pole
	3rd	Magnetic field and magnetic field intensity, magnetic lines of force, magnetic flux and magnetic flux density
	4th	Electric current: definition, formula and SI units, Ohm's law and it's applications
13th (12-17) June	1st	Series and parallel combination of resistors, Simple numericals, Discussion of Assignment 8
	2nd	Kirchhoff's Laws (Statement & Explanation with diagram),Application of kirchoff's law to wheatstonebridge, balanced WB and condition for balance, Discussion of Assignment 9
14th (19-24) June	1st	electromagnetism: definition and concept,force acting on a current carrying conductor placed in uniform magnetic field, Fleming's left hand rule
	2nd	Faraday's laws of electromagnetic induction, Lenz's law, Fleming's right hand rule and comparision with Fleming's left hand rule
	3rd	Laser and Laser beam(concept and Definition),Population inversion and Optical pumping, properties and applications of laser,
	4th	wireless transmission: ground waves, sky waves, space waves,Discussion of Assignment 10, Monthly Assessment3

		LESSON PLAN FOR ACADEMIC SESSION 2022-23
Discipline: Physics	**Semester: 2nd Branch: Electrical Group: 5**	**Name of the Teaching Faculty: Abhilash Padhy**
Subject: Engg. Physics Practical(Pr 2a)	**No. of Days/per week class allotted: 04**	**Semester From date: 20/03/2023 To Date: 27/06/2023** **No. of Weeks: 14**
Week	**Class Day/ Period**	**Topics to be covered**
1st (20-25) Mar.	1st	Introductory Remarks on Course Structure, Laboratory Criteria, Identification of Various Lab Equipment
	2nd	
	3rd	Theory of measurement of length with vernier calliper with demonstration of measurement
	4th	
2nd (27 Mar. - 1 April)	1st	Experiment 01 : Determination of the volume of a solid cylinder using Vernier Caliper (and) Experiment 02 : Determination of the volume of an hollow cylinder using Vernier Caliper
	2nd	
3rd (3-8) April	1st	Experiment 01 : Determination of the volume of a solid cylinder using Vernier Caliper (and) Experiment 02 : Determination of the volume of an hollow cylinder using Vernier Caliper
	2nd	
	3rd	Theory of measurement of length with Screw gauge with demonstration of measurement
	4th	
4th (10-15) April	1st	Experiment 03 : Determination of the crossectional area of a wire using screw gauge.(and) Experiment o4 : Determination of Volume of a glass lamina using screw gauge.
	2nd	
	3rd	Experiment 03 : Determination of the crossectional area of a wire using screw gauge.(and) Experiment o4 : Determination of Volume of a glass lamina using screw gauge.
	4th	
5th (17-22) April	1st	Theory of measurement of length with Screw gauge with demonstration of measurement
	2nd	
	3rd	Experiment 05 : Determination of Radius of curvature of a convex surface, using spherometer (and)Experiment 06 : Determination of Radius of curvature of a concave surface, using spherometer
	4th	
6th (24-29) April	1st	Experiment 05 : Determination of Radius of curvature of a convex surface, using spherometer (and)Experiment 06 : Determination of Radius of curvature of a concave surface, using spherometer
	2nd	
	3rd	Theory Class on Simple Oscilation, Time period of a simple pendulum and determination of g
	4th	
7th (1-6) May	1st	Experiment 07 : Determination of 'g' by using simple pendulum
	2nd	
	3rd	Experiment 07 : Determination of 'g' by using simple pendulum
	4th	
8th (8-13) May	1st	Experiment 07 : Determination of 'g' by using simple pendulum
	2nd	
	3rd	Theory of magnetic field, magnetic lines of forces and the neutral point along with demonstration
	4th	
9th (15-20) May	1st	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and) Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.
	2nd	
	3rd	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and) Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.
	4th	

10th (22-27) May	**1st**	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and)	
	2nd	Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.	
	3rd		
	4th	Theory class on Refraction through Prism	
11th (29th May -3rd June)	**1st**	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	2nd		
	3rd	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	4th		
12th (5-10) June	**1st**	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	2nd		
	3rd		
	4th	Makeup lab from Experiment 01 to Experiment 11	
13th (12-17) June	**1st**		
	2nd	Makeup lab from Experiment 01 to Experiment 11	
14th (19-24) June	**1st**		
	2nd	Makeup lab from Experiment 01 to Experiment 11	
	3rd		
	4th	Makeup lab from Experiment 01 to Experiment 11	

LESSON PLAN FOR ACADEMIC SESSION 2022-23

Discipline: Physics	Semester: 2nd Branch: Electrical Group: 6	Name of the Teaching Faculty: Abhilash Padhy
Subject: Engg. Physics Practical (Pr 2A)	No. of Days/per week class allotted: 04	Semester From date: 20/03/2023 To Date: 27/06/2023 No. of Weeks: 15

Week	Class Day/ Period	Topics to be covered
1st (20-25) Mar.	1st	Introductory Remarks on Course Structure, Laboratory Criteria, Identification of Various Lab Equipment
	2nd	
	3rd	
	4th	Theory of measurement of length with vernier calliper with demonstration of measurement
2nd (27 Mar. - 1 April)	1st	Experiment 01 : Determination of the volume of a solid cylinder using Vernier Caliper (and) Experiment 02 : Determination of the volume of an hollow cylinder using Vernier Caliper
	2nd	
	3rd	Experiment 01 : Determination of the volume of a solid cylinder using Vernier Caliper (and) Experiment 02 : Determination of the volume of an hollow cylinder using Vernier Caliper
	4th	
3rd (3-8) April	1st	Theory of measurement of length with Screw gauge with demonstration of measurement
	2nd	
	3rd	Experiment 03 : Determination of the crossectional area of a wire using screw gauge.(and) Experiment o4 : Determination of Volume of a glass lamina using screw gauge.
	4th	
4th (10-15) April	1st	Experiment 03 : Determination of the crossectional area of a wire using screw gauge.(and) Experiment o4 : Determination of Volume of a glass lamina using screw gauge.
	2nd	
	3rd	Theory of measurement of length with Screw gauge with demonstration of measurement
	4th	
5th (17-22) April	1st	Experiment 05 : Determination of Radius of curvature of a convex surface, using spherometer (and) Experiment 06 : Determination of Radius of curvature of a concave surface, using spherometer
	2nd	
	3rd	Experiment 05 : Determination of Radius of curvature of a convex surface, using spherometer (and) Experiment 06 : Determination of Radius of curvature of a concave surface, using spherometer
	4th	
6th (24-29) April	1st	Theory Class on Simple Oscilation, Time period of a simple pendulum and determination of g
	2nd	
	3rd	Experiment 07 : Determination of 'g' by using simple pendulum
	4th	
7th (1-6) May	1st	Experiment 07 : Determination of 'g' by using simple pendulum
	2nd	
	3rd	Theory of magnetic field, magnetic lines of forces and the neutral point along with demonstration
	4th	
8th (8-13) May	1st	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and) Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.
	2nd	
	3rd	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and) Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.
	4th	

9th **(15-20) May**	**1st**	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and) Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.	
	2nd		
	3rd		
	4th	Theory class on Refraction through Prism	
10th **(22-27)** **May**	**1st**	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	2nd		
	3rd	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	4th		
11th **(29th May -3rd** **June)**	**1st**	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	2nd		
	3rd	Makeup lab from Experiment 01 to Experiment 11	
	4th		
12th **(5-10)** **June**	**1st**	Makeup lab from Experiment 01 to Experiment 11	
	2nd		
	3rd	Makeup lab from Experiment 01 to Experiment 11	
	4th		
13th **(12-17)** **June**	**1st**	Makeup lab from Experiment 01 to Experiment 11	
	2nd		
	3rd	Makeup lab from Experiment 01 to Experiment 11	
	4th		
14th **(19-24) June**	**1st**	Makeup lab from Experiment 01 to Experiment 11	
	2nd		
15th **(26-27) June**	**1st**	Makeup lab from Experiment 01 to Experiment 11	
	2nd		
	3rd	Makeup lab from Experiment 01 to Experiment 11	
	4th		

LESSON PLAN FOR ACADEMIC SESSION 2022-23		
Discipline: Physics	**Semester: 2nd Branch: E&TC**	**Name of the Teaching Faculty: Abhilash Padhy**
Subject: Engg. Physics (Th 2A)	**No. of Days/per week class allotted: 04**	**Semester From date: 20/03/2023 To Date: 27/06/2023** **No. of Weeks: 14**
Week	**Class Day/ Period**	**Topics to be covered**
1st (20-25) Mar.	1st	Introduction to Physics and Physical quantities, fundamental and derived units, System of Units (M.K.S. , C.G.S. , F.P.S. , S.I.), Metric Prefixes
	2nd	Definition of dimension and Dimensional formulae of physical quantities,Dimensional Equations and Principle of Homogeneity, Checking the dimensional correctness of physical relations
	3rd	Definition and concept of scalar and vector quantities, examples and types of vector
	4th	Triangle and parallelogram law of vector addition, Simple Numericals
2nd (27 Mar. -1 April)	1st	Resolution of vectors, vector multiplication(scalar and vector product)
	2nd	Discussion of Assignment 1 and 2
3rd (3-8) April	1st	Concept of rest and motion, displacement,speed,velocity,acceleration,force (Definition, formula, dimension & SI units), equations of motion under gravity
	2nd	Definition and example of projectile, Time of flight, maximum height, horizontal range, for projectile fired at an angle
	3rd	Equation of trajectory for projectile fired at an angle, condition for maximum horizontal range
	4th	circular motion(angular displacement,velocity,acceleration), relation between linear velocity and angular velocity, relation between linear and angular acceleration
4th (10-15) April	1st	Discussion of Assignment 3
	2nd	Definition, formula and SI unit of work
	3rd	Deinition and concept of friction, types of friction(static and dynamic),limiting friction, laws of limiting friction, coefficient of friction, simple numericals and methods of reducing friction
	4th	Newton's laws of gravitation- Statement and Explanation, Universal gravitational constant (G)- Definition, Unit and Dimension, Discussion of Assignment 4
5th (17-22) April	1st	Acceleration due to gravity(g)- Definition and Concept, Relation between g and G and comparison between mass and weight, variation of g with altitude and depth (Explanation)
	2nd	kepler's laws of planetary motion, Monthly Assessment1
	3rd	Simple Harmonic Motion (SHM)- Definition and Examples
	4th	Expression for displacement, velocity, acceleration of a body in SHM
6th (24-29) April	1st	Wave motion-Definition & Concept, Transverse and Longitudinal wave motion- Definition, Examples & Comparison
	2nd	Definition of different wave parameters(amplitude, wavelength,frequency, timeperiod), Derivation of relation between velocity,frequency and wavelength of a wave.
	3rd	Ultrasonics- definition, properties and applications
	4th	Heat and Temperature- definition,cocept,units and difference, Discussion of Assignment 5
7th (1-6) May	1st	specific heat, change of state, latent heat (concept, definition, unit, dimension) with simple numericals
	2nd	Definition and concept of thermal expansion
	3rd	expansion of solids, coefficient of linear,superficial and cubical expansion, relation between alpha, beta, gamma
	4th	cocept and relation of work and heat,joules mechanical equivalent of heat,first law of thermodynamics
8th (8-13) May	1st	Discussion of Assignment 6
	2nd	Definition and laws of reflection and refraction
	3rd	definition and concept of refractive index, simple numericals
	4th	Critical angle and total internal reflection

9th **(15-20) May**	**1st**	Refraction through prism(ray diagram and formula)	
	2nd	Fibre optics: definition, properties and applications	
	3rd	Discussion of Assignment 7 and Monthly Assessment2	
	4th	Difinition and concept of Electrostatics, Statement and explaination of Coloumb's law, definition of unit charge, absolute and relative pemittivity	
10th **(22-27)** **May**	**1st**	electric field, electric field intensity	
	2nd	Electric Potential and Electric Potential Difference (Definition, Formula & SI Units)	
	3rd	Capacitance,series and parallel combination of capacitors, simple numericals	
	4th	Magnet, properties of magnet, Coloumb's laws in magnetism, Unit pole	
11th **(29th May -3rd** **June)**	**1st**	Magnetic field and magnetic field intensity, magnetic lines of force, magnetic flux and magnetic flux density	
	2nd	Electric current: definition, formula and SI units, Ohm's law and it's applications	
	3rd	Series and parallel combination of resistors, Simple numericals, Discussion of Assignment 8	
	4th	Kirchhoff's Laws (Statement & Explanation with diagram),Application of kirchoff's law to wheatstonebridge, balanced WB and condition for balance, Discussion of Assignment 9	
12th **(5-10)** **June**	**1st**	electromagnetism: definition and concept,force acting on a current carrying conductor placed in uniform magnetic field, Fleming's left hand rule	
	2nd	Faraday's laws of electromagnetic induction, Lenz's law,	
	3rd	Fleming's right hand rule and comparision with Fleming's left hand rule	
	4th	Laser and Laser beam(concept and Definition),Population inversion and Optical pumping	
14th **(19-24) June**	**1st**	properties and applications of laser,	
	2nd	wireless transmission: ground waves, sky waves, space waves	
	3rd	Discussion of Assignment 10, Monthly Assessment3	
	4th	Revision of the course	

Discipline: Physics	Semester: 2nd Branch: E&TC Group: 7	Name of the Teaching Faculty: Abhilash Padhy
Subject: Engg. Physics Practical (Pr 2A)	No. of Days/per week class allotted: 04	Semester From date: 20/03/2023 To Date: 27/06/2023 No. of Weeks: 15

Week	Class Day/ Period	Topics to be covered
1st (20-25) Mar.	1st	Introductory Remarks on Course Structure, Laboratory Criteria, Identification of Various Lab Equipment
	2nd	
	3rd	
	4th	Theory of measurement of length with vernier calliper with demonstration of measurement
2nd (27 Mar. - 1 April)	1st	Experiment 01 : Determination of the volume of a solid cylinder using Vernier Caliper (and) Experiment 02 : Determination of the volume of an hollow cylinder using Vernier Caliper
	2nd	
3rd (3-8) April	1st	Experiment 01 : Determination of the volume of a solid cylinder using Vernier Caliper (and) Experiment 02 : Determination of the volume of an hollow cylinder using Vernier Caliper
	2nd	
	3rd	
	4th	Theory of measurement of length with Screw gauge with demonstration of measurement
4th (10-15) April	1st	Experiment 03 : Determination of the crossectional area of a wire using screw gauge.(and) Experiment o4 : Determination of Volume of a glass lamina using screw gauge.
	2nd	
	3rd	Experiment 03 : Determination of the crossectional area of a wire using screw gauge.(and) Experiment o4 : Determination of Volume of a glass lamina using screw gauge.
	4th	
5th (17-22) April	1st	Theory of measurement of length with Spherometer with demonstration of measurement
	2nd	
	3rd	Experiment 05 : Determination of Radius of curvature of a convex surface, using spherometer (and) Experiment 06 : Determination of Radius of curvature of a concave surface, using spherometer
	4th	
6th (24-29) April	1st	Experiment 05 : Determination of Radius of curvature of a convex surface, using spherometer (and) Experiment 06 : Determination of Radius of curvature of a concave surface, using spherometer
	2nd	
	3rd	Theory Class on Simple Oscilation, Time period of a simple pendulum and determination of g
	4th	
7th (1-6) May	1st	Experiment 07 : Determination of 'g' by using simple pendulum
	2nd	
	3rd	Experiment 07 : Determination of 'g' by using simple pendulum
	4th	
8th (8-13) May	1st	Experiment 07 : Determination of 'g' by using simple pendulum
	2nd	
	3rd	Theory of magnetic field, magnetic lines of forces and the neutral point along with demonstration
	4th	
9th (15-20) May	1st	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and) Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.
	2nd	
	3rd	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and) Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.
	4th	

10th **(22-27)** **May**	**1st**	Experiment 08 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing north.(and)	
	2nd	Experiment 09 : Determination of the neutral point and drawing magnetic lines of force due to a bar magnet when its north pole is facing south.	
	3rd		
	4th	Theory class on Refraction through Prism	
11th **(29th May -3rd** **June)**	**1st**	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	2nd		
	3rd	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	4th		
12th **(5-10)** **June**	**1st**	Experiment 10 : Determination of the angle of minimum deviation for a prism. (and) Experiment 11 : Determination of angle of prism	
	2nd		
	3rd	Makeup lab from Experiment 01 to Experiment 11	
	4th		
13th **(12-17)** **June**	**1st**	Makeup lab from Experiment 01 to Experiment 11	
	2nd		
	3rd	Makeup lab from Experiment 01 to Experiment 11	
	4th		
14th **(19-24) June**	**1st**	Makeup lab from Experiment 01 to Experiment 11	
	2nd		
	3rd	Makeup lab from Experiment 01 to Experiment 11	
	4th		
15th **(26-27) June**	**1st**	Makeup lab from Experiment 01 to Experiment 11	
	2nd		