UTKAL GOURAV MADHUSUDAN INSTITUTE OF TECHNOLOGY, RAYAGADA

Academic Lesson Plan for1st year– 2026

Name of the teaching faculty: Mr.Tejeswar Patra,
Guest faculty (Physics)

Discipline :Common(E&TC/Mechanical)

Dept. : Department of Mathematics & Science

Year :1st

Subject : Pr 2 : Applied Physics Laboratory

No of Periods per week: 2 Total Periods: 64,

End semester Exam.: 25 Marks,

Date - 17/08/2026 to 17/04/2027

Week	Period	Experiment	Topics to be covered
1st	1st	Experiment 1 Measurement using Vernier Caliper	Introduction, aim, apparatus and principle. Measure length and radius of a cylinder, test tube and beaker using Vernier caliper; determine volume.
	2nd	Experiment 1 Measurement using Vernier Caliper	Introduction, aim, apparatus and principle. Measure length and radius of a cylinder, test tube and beaker using Vernier caliper; determine volume.
2nd	1st	Experiment 1 Measurement using Vernier Caliper	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 1 Measurement using Vernier Caliper	Revision , assessment , record verification and doubt clarification.
3rd	1st	Experiment 2 Measurement using Screw Gauge	Introduction, aim, apparatus and principle. Determine diameter of a wire, solid ball and thickness of cardboard using screw gauge.
	2nd	Experiment 2 Measurement using Screw Gauge	Perform the experiment, record observations, calculations and result. Study pitch, least count and zero error; take observations and calculate the required dimensions. Complete practical record and note precautions.
4th	1st	Experiment 2 Measurement using Screw Gauge	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 2 Measurement using Screw Gauge	Revision , assessment , record verification and doubt clarification.
5th	1st	Experiment 3 Measurement Using Spherometer	Introduction, aim, apparatus and principle. Determine radius of curvature of concave and convex surface.

	2nd	Experiment 3 Measurement Using Spherometer	Perform the experiment, record observations, calculations and result. Study pitch, least count and zero error; take observations and calculate the required dimensions. Complete practical record and note precautions
6th	1st	Experiment 3 Measurement Using Spherometer	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 3 Measurement Using Spherometer	Revision , assessment , record verification and doubt clarification.
7th	1st	Experiment 4 Triangle & Parallelogram Law / Friction	Introduction, aim, apparatus and principle. Verify triangle and parallelogram law of forces OR determine coefficient of friction between wood and glass using a horizontal board.
	2nd	Experiment 4 Triangle & Parallelogram Law / Friction	Perform the experiment, record observations, calculations and result. Study the selected setup, perform observations and verify the law or calculate coefficient of friction. Complete practical record and note precautions.
8th	1st	Experiment 4 Triangle & Parallelogram Law / Friction	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 4 Triangle & Parallelogram Law / Friction	Revision , assessment , record verification and doubt clarification.
9th	1st	Experiment 5 Hooke's Law	Introduction, aim, apparatus and principle. Determine force constant of a spring using Hooke's law.
	2nd	Experiment 5 Hooke's Law	Perform the experiment, record observations, calculations and result. Study spring extension and loading; take readings, plot/interpret data and determine force constant. Complete practical record and note precautions.
10th	1st	Experiment 5 Hooke's Law	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 5 Hooke's Law	Revision , assessment , record verification and doubt clarification.
11th	1st	Experiment 6 Flywheel / Stokes' Law	Introduction, aim, apparatus and principle. Find moment of inertia of a flywheel OR determine viscosity of glycerin using Stokes' law.
	2nd	Experiment 6 Flywheel / Stokes' Law	Perform the experiment, record observations, calculations and result. Study the selected setup, take observations and calculate moment of inertia or coefficient of viscosity. Complete practical record and note precautions.

12th	1st	Experiment 6 Flywheel / Stokes' Law	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 6 Flywheel / Stokes' Law	Revision , assessment , record verification and doubt clarification.
13th	1st	Experiment 7 Law of Reflection	Introduction, aim, apparatus and principle. Verify laws of reflection from a plane mirror/interface.
	2nd	Experiment 7 Law of Reflection	Perform the experiment, record observations, calculations and result. Study reflection setup, take angle readings and verify angle of incidence equals angle of reflection. Complete practical record and note precautions.
14th	1st	Experiment 7 Law of Reflection	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 7 Law of Reflection	Revision , assessment , record verification and doubt clarification.
15th	1st	Experiment 8 Law of Refraction	Introduction, aim, apparatus and principle. Verify laws of refraction (Snell's law) using a glass slab.
	2nd	Experiment 8 Law of Refraction	Perform the experiment, record observations, calculations and result. Take incidence/refraction readings and verify Snell's law. Complete practical record and note precautions.
16th	1st	Experiment 8 Law of Refraction	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 8 Law of Refraction	Revision , assessment , record verification and doubt clarification.
17th	1st	Experiment 9 Ohm's Law	Introduction, aim, apparatus and principle. Verify Ohm's law by plotting graph between current and potential difference.
	2nd	Experiment 9 Ohm's Law	Perform the experiment, record observations, calculations and result. Connect circuit, take readings, plot V-I graph and determine resistance. Complete practical record and note precautions.

18th	1st	Experiment 9 Ohm's Law	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 9 Ohm's Law	Revision , assessment , record verification and doubt clarification.

19th	1st	Experiment 10 Resistance: Series & Parallel	Introduction, aim, apparatus and principle. Verify laws of resistances in series and parallel combination.
	2nd	Experiment 10 Resistance: Series & Parallel	Perform the experiment, record observations, calculations and result. Construct circuits, take readings and compare experimental and theoretical resistance. Complete practical record and note precautions.
20th	1st	Experiment 10 Resistance: Series & Parallel	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 10 Resistance: Series & Parallel	Revision , assessment , record verification and doubt clarification.
21st	1st	Experiment 11 Kirchhoff's Laws	Perform the experiment, record observations, calculations and result. Construct circuit, apply junction and loop rules, take observations and verify laws. Complete practical record and note precautions.
	2nd	Experiment 12 Parallel Plate Capacitor	Introduction, aim, apparatus and principle. Study dependence of capacitance on various factors and determine permittivity of air.
22nd	1st	Experiment 11 Kirchhoff's Laws	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 12 Parallel Plate Capacitor	Revision , assessment , record verification and doubt clarification.
23rd	1st	Experiment 12 Parallel Plate Capacitor	Introduction, aim, apparatus and principle. Study dependence of capacitance on various factors and determine permittivity of air.
	2nd	Experiment 12 Parallel Plate Capacitor	Perform the experiment, record observations, calculations and result. Study effect of plate area/separation, take readings and calculate capacitance/permittivity. Complete practical record and note precautions.
24th	1st	Experiment 12 Parallel Plate Capacitor	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 12 Parallel Plate Capacitor	Revision , assessment , record verification and doubt clarification.
25th	1st	Experiment 13 Galvanometer Resistance	Introduction, aim, apparatus and principle. Find resistance of a galvanometer by half-deflection method.
	2nd	Experiment 13 Galvanometer Resistance	Perform the experiment, record observations, calculations and result. Study half-deflection method, take readings and calculate galvanometer resistance. Complete practical record and note precautions.

26th	1st		Revision , assessment , record verification and doubt clarification.
	2nd		Revision , assessment , record verification and doubt clarification.
27th	1st	Experiment 14 Galvanometer to Ammeter	Introduction, aim, apparatus and principle. Convert a galvanometer into an ammeter.
	2nd	Experiment 14 Galvanometer to Ammeter	Perform the experiment, record observations, calculations and result. Calculate shunt resistance, connect the circuit and test the converted ammeter. Complete practical record and note precautions.
28th	1st	Experiment 14 Galvanometer to Ammeter	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 14 Galvanometer to Ammeter	Revision , assessment , record verification and doubt clarification.
29th	1st	Experiment 15 Galvanometer to Voltmeter	Introduction, aim, apparatus and principle. Convert a galvanometer into a voltmeter.
	2nd	Experiment 15 Galvanometer to Voltmeter	Perform the experiment, record observations, calculations and result. Calculate series resistance, connect the circuit and test the converted voltmeter. Complete practical record and note precautions.
30th	1st	Experiment 15 Galvanometer to Voltmeter	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 15 Galvanometer to Voltmeter	Revision , assessment , record verification and doubt clarification.
31st	1st	Experiment 16 Semiconductor Diode V-I Characteristics	Introduction, aim, apparatus and principle. Draw V-I characteristics of Ge/Si diode and determine knee voltage.
	2nd	Experiment 16 Semiconductor Diode V-I Characteristics	Perform the experiment, record observations, calculations and result. Record forward/reverse bias readings, plot V-I graph and determine knee voltage. Complete practical record and note precautions.

32nd	1st	Experiment 16 Semiconductor Diode V-I Characteristics	Revision , assessment , record verification and doubt clarification.
	2nd	Experiment 16 Semiconductor Diode V-I Characteristics	Revision , assessment , record verification and doubt clarification.

Tejeswar
17/08/2026

Mr. Tejeswar Patra
Guest faculty (Physics),

17/8/26

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