

ACADEMIC LESSON PLAN OF SUMMER 2025

Discipline: Electrical	Semester: 6 th (sec-A)	Name of the Teaching Faculty: LUCKY RANI BEHURIA
Subject: Renewable Energy (TH-4)	No. of days/per week class allotted: 4p/week Tutorial: 1p/week	Semester From: 04 th FEBRUARY 2025 to 17 th MAY 2025 No. of weeks: 15 weeks
Week	Class/week	Theory Topics
1 st	1 st	1.1. Environmental consequences of fossil fuel use.
	2 nd	1.2. Importance of renewable sources of energy.
	3 rd	1.3 Sustainable Design and development.
	4 th	1.4. Types of RE sources.
	5 th	Tutorial
2 nd	1 st	1.5. Limitations of RE sources
	2 nd	1.6. Present Indian and international energy scenario of conventional and RE sources
	3 rd	2.1. Solar photovoltaic system-Operating principle.
	4 th	2.2. Photovoltaic cell concepts
	5 th	Tutorial
3 rd	1 st	2.2.1. Cell, module, array, Series and parallel connections.
	2 nd	2.3. Classification of energy Sources.
	3 rd	2.4. Extra-terrestrial and terrestrial Radiation.
	4 th	2.5. Azimuth angle, Zenith angle, Hour angle, Irradiance, Solar constant.
	5 th	Tutorial
4 th	1 st	2.6. Solar collectors, Types, and performance characteristics,
	2 nd	2.6. Solar collectors, Types, and performance characteristics,
	3 rd	2.7. Applications: Photovoltaic - battery charger, domestic lighting, street lighting.
	4 th	2.7. Applications: Photovoltaic - water pumping, solar cooker, Solar Pond.
	5 th	Tutorial
5 th	1 st	3.1. Introduction to Wind energy.
	2 nd	3.2. Wind energy conversion.
	3 rd	3.3. Types of wind turbines
	4 th	3.3. Types of wind turbines
	5 th	Tutorial
6 th	1 st	3.4. Aerodynamics of wind rotors.
	2 nd	3.5. Wind turbine control systems; conversion to electrical power:
	3 rd	3.6. Induction and synchronous generators.
	4 th	3.7. Grid connected and self-excited induction generator operation.
	5 th	Tutorial
7 th	1 st	3.8. Constant voltage and constant frequency generation with power electronic control.
	2 nd	3.9. Single and double output systems.
	3 rd	3.10. Characteristics of wind power plant.
	4 th	4.1. Energy from Biomass.
	5 th	Tutorial
8 th	1 st	4.2. Biomass as Renewable Energy Source
	2 nd	4.3. Types of Biomass Fuels - Solid, Liquid and Gas.
	3 rd	4.3. Types of Biomass Fuels - Solid, Liquid and Gas.
	4 th	4.4. Combustion and fermentation.
	5 th	Tutorial
9 th	1 st	4.5. Anaerobic digestion
	2 nd	4.6. Types of biogas digester.
	3 rd	4.6. Types of biogas digester.
	4 th	4.6. Types of biogas digester.
	5 th	Tutorial
10 th	1 st	4.7. Wood gasifier.
	2 nd	4.8. Pyrolysis,.
	3 rd	4.9. Applications: Bio gas, Bio diesel

	4 th	5.1. Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems.
	5 th	Tutorial
11 th	1 st	5.1. Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems.
	2 nd	5.1. Tidal Energy: Energy from the tides, Barrage and Non Barrage Tidal power systems.
	3 rd	5.2. Ocean Thermal Energy Conversion (OTEC).
	4 th	5.2. Ocean Thermal Energy Conversion (OTEC).
	5 th	Tutorial
12 th	1 st	5.3. Geothermal Energy – Classification.
	2 nd	5.3. Geothermal Energy – Classification.
	3 rd	5.3. Geothermal Energy – Classification.
	4 th	5.4. Hybrid Energy Systems.
	5 th	Tutorial
13 th	1 st	5.3. Geothermal Energy – Classification.
	2 nd	5.4. Hybrid Energy Systems.
	3 rd	5.6. Diesel-PV, Wind-PV, Microhydel-PV.
	4 th	5.6. Diesel-PV, Wind-PV, Microhydel-PV.
	5 th	Tutorial
14 th	1 st	5.6. Diesel-PV, Wind-PV, Microhydel-PV.
	2 nd	5.7. Electric and hybrid electric vehicles.
	3 rd	5.7. Electric and hybrid electric vehicles.
	4 th	5.7. Electric and hybrid electric vehicles.
	5 th	Tutorial
15 th	1 st	5.4. Hybrid Energy Systems.
	2 nd	5.5. Need for Hybrid Systems.
	3 rd	Revision - Biomass Power
	4 th	Revision - Biomass Power
	5 th	Tutorial

Lucky Dini Beluresa

Signature of Teaching Faculty

ACADEMIC LESSON PLAN FOR SUMMER 2025

Discipline Electrical Engg.	Semester: - 6th (SEC-A, GR- 1&GR-2)	Name of the Teaching Faculty: -LUCKY RANI BEHURIA
Subject: - ELECTRICAL WORKSHOP PR-01	No of Days/per Week Class Allotted: - 6p/week	Semester From: 04 th FEBRUARY 2025 to 17 th MAY 2025 No. of weeks:15 weeks
Week	Class Day	Theory/ Practical Topics
1 st	1 st	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c);copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint.(Theory)
	2 nd	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c); copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint.(Practical)
2 nd	1 st	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c); copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint.(Practical) (contd.)
	2 nd	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c); copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint.(Practical) (contd.)
3 rd	1 st	2. Cutting copper and aluminium cable and crimping lug to them from 4mm ² to 25mm ² cross section. .(Theory)
	2 nd	2. Cutting copper and aluminium cable and crimping lug to them from 4mm ² to 25mm ² cross section. (Practical)
4 th	1 st	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table.(Theory)
	2 nd	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table(practical) (contd.)
5 th	1 st	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table(practical) (contd.)
	2 nd	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table(practical) (contd.)
6 th	1 st	4. Study battery charger and make charging of lead acid battery (record charging voltage, current and specific gravity). (Theory)
	2 nd	4. Study battery charger and make charging of lead acid battery (record charging voltage, current and specific gravity). (Practical)
7 th	1 st	5. Erection of residential building wiring by CTS and conduit wiring system using main two points and test installation by test lamp method and a meggar. (Theory)
	2 nd	5. Erection of residential building wiring by CTS and conduit wiring system using main two points and test installation by test lamp method and a meggar. (Practical)
8 th	1 st	5. Erection of residential building wiring by CTS and conduit wiring system using main twopoints and test installation by test lamp method and a meggar. (Practical)(Contd.)
	2 nd	5. Erection of residential building wiring by CTS and conduit wiring system using main twopoints and test installation by test lamp method and a meggar. (Practical)
9 th	1 st	5. Erection of residential building wiring by CTS and conduit wiring system using main twopoints and test installation by test lamp method and a meggar. (Practical) (Contd.)
	2 nd	6. Fault finding & repairing of Fan – prepare an inventory list of parts. (Theory)
10 th	1 st	6. Fault finding & repairing of Fan – prepare an inventory list of parts. (practical)
	2 nd	6. Fault finding & repairing of Fan – prepare an inventory list of parts. (practical)(contd.)

11 th	1 st	7. Find out fault of D.C. generator, repair and test it to run. (Theory)
	2 nd	7. Find out fault of D.C. generator, repair and test it to run. (practical)
12 th	1 st	8. Find out fault of D.C. motor starters and A.C motor starter – prepare an inventory list of parts used in different starters. (Theory)
	2 nd	8. Find out fault of D.C. motor starters and A.C motor starter – prepare an inventory list of parts used in different starters. (Practical)
13 th	1 st	9. Dismantle, over haul and assemble a single-phase induction motor. Test and run it. – prepare an inventory list. (Theory)
	2 nd	9. Dismantle, over haul and assemble a single-phase induction motor. Test and run it. – prepare an inventory list. (Practical)
14 th	1 st	10. Dismantle over haul and assemble a three-phase squirrel cage and phase wound motor. Test and run them. (Theory)
	2 nd	10. Dismantle over haul and assemble a three-phase squirrel cage and phase wound motor. Test and run them. (Practical)
15 th	1 st	11. Overhaul a single phase / 3 phase variac. (Theory)
	2 nd	11. Overhaul a single phase / 3 phase variac. (Practical)

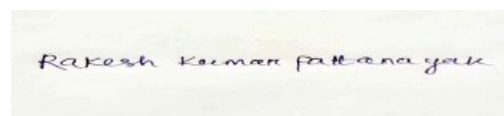
Lucky Dini Belurra

Signature of Teaching Faculty

ACADEMIC LESSON PLAN FOR SUMMER 2024

Discipline Electrical Engg.	Semester: - 6th (SEC-A, GR-2)	Name of the Teaching Faculty: - Rakesh kumar Pattanayak & Biswanita Sahu
Subject: - ELECTRICAL WORKSHOP PR-01	No of Days/per Week Class Allotted: - 6p/week	Semester From: 16 th January 2024 to 26 th April 2024
Week	Class Day	Theory/ Practical Topics
1 st	1 st	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c); copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint. (Theory)
	2 nd	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c); copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint. (Practical)
2 nd	1 st	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c); copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint. (Practical) (contd.)
	2 nd	1. Identification of single core (SC), twin core (TC), three cores (3c), four cores (4c); copper and aluminium PVC, VIR & Weather proof (WP) wire and prepare Britannia T joint and Married joint. (Practical) (contd.)
3 rd	1 st	2. Cutting copper and aluminium cable and crimping lug to them from 4mm ² to 25mm ² cross section. (Theory)
	2 nd	2. Cutting copper and aluminium cable and crimping lug to them from 4mm ² to 25mm ² cross section. (Practical)
4 th	1 st	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table. (Theory)
	2 nd	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table (practical) (contd.)
5 th	1 st	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table (practical) (contd.)
	2 nd	3. Connection and testing of fluorescent tube light, high pressure M.V. lamp, sodium vapor lamp, M.H lamp, CFL and latest model lamps – measure inductance, Lux/ lumens (intensity of illumination) in each case prepare lux table (practical) (contd.)
6 th	1 st	4. Study battery charger and make charging of lead acid battery (record charging voltage, current and specific gravity). (Theory)
	2 nd	4. Study battery charger and make charging of lead acid battery (record charging voltage, current and specific gravity). (Practical)
7 th	1 st	5. Erection of residential building wiring by CTS and conduit wiring system using main two points and test installation by test lamp method and a meggar. (Theory)
	2 nd	5. Erection of residential building wiring by CTS and conduit wiring system using main two points and test installation by test lamp method and a meggar. (Practical)
8 th	1 st	5. Erection of residential building wiring by CTS and conduit wiring system using main two points and test installation by test lamp method and a meggar. (Practical) (Contd.)

	2 nd	5. Erection of residential building wiring by CTS and conduit wiring system using main twopoints and test installation by test lamp method and a meggar. (Practical)
9 th	1 st	5. Erection of residential building wiring by CTS and conduit wiring system using main twopoints and test installation by test lamp method and a meggar. (Practical) (Contd.)
	2 nd	6. Fault finding & repairing of Fan – prepare an inventory list of parts. (Theory)
10 th	1 st	6. Fault finding & repairing of Fan – prepare an inventory list of parts. (practical)
	2 nd	6. Fault finding & repairing of Fan – prepare an inventory list of parts. (practical)(contd.)
11 th	1 st	7. Find out fault of D.C. generator, repair and test it to run. (Theory)
	2 nd	7. Find out fault of D.C. generator, repair and test it to run. (practical)
12 th	1 st	8. Find out fault of D.C. motor starters and A.C motor starter – prepare an inventory list of parts used in different starters. (Theory)
	2 nd	8. Find out fault of D.C. motor starters and A.C motor starter – prepare an inventory list of parts used in different starters. (Practical)
13 th	1 st	9. Dismantle, over haul and assemble a single-phase induction motor. Test and run it. – prepare an inventory list. (Theory)
	2 nd	9. Dismantle, over haul and assemble a single-phase induction motor. Test and run it. – prepare an inventory list. (Practical)
14 th	1 st	10. Dismantle over haul and assemble a three-phase squirrel cage and phase wound motor. Test and run them. (Theory)
	2 nd	10. Dismantle over haul and assemble a three-phase squirrel cage and phase wound motor. Test and run them. (Practical)
15 th (Extra class)	1 st	11. Overhaul a single phase / 3 phase variac. (Theory)
	2 nd	11. Overhaul a single phase / 3 phase variac. (Practical)



Signature of Teaching Faculty