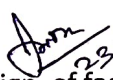
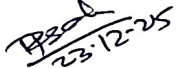



LESSON PLAN

Discipline:	Semester:-	Name of the Teaching Faculty:-
Electrical Engg.	4 <sup>TH</sup>	AMIYA RANJAN DAS
Subject:- Electrical Testing & Commissioning [TH-4(a)]	No of Days/per Week Class Allotted: 03	Semester- From:22.12.2025 To:18.04.2026 No of Weeks:-15
Week	Class/Day	Theory Topics
1 <sup>st</sup>	1 <sup>st</sup>	<b>I.Electrical Safety and Insulation</b> 1.1.Do's and don'ts regarding safety in domestic electrical appliances as well for substation/power station operators. (contd....)
	2 <sup>nd</sup>	1.1.Do's and don'ts regarding safety in domestic electrical appliances as well for substation/power station operators.
	3 <sup>rd</sup>	1.2..Electrical safety in industry/power stations/ substations at the time of operation/ control/ maintenance. Fire detection alarm, fire-fighting equipment. (contd....)
2 <sup>nd</sup>	1 <sup>st</sup>	1.2.Electrical safety in industry/power stations/ substations at the time of operation/ control/ maintenance. Fire detection alarm, fire-fighting equipment.
	2 <sup>nd</sup>	1.3.Factors affecting life of insulating materials, classifications of insulating materials as per IS:1271-1958. (contd....)
	3 <sup>rd</sup>	1.3.Factors affecting life of insulating materials, classifications of insulating materials as per IS:1271-1958.
3 <sup>rd</sup>	1 <sup>st</sup>	1.4.Measuring insulation resistance by different methods such as i) Polarization, ii) Dielectric absorption, iii) Megger Insulating oil - properties of insulating oil, causes of deterioration of oil, testing of transformer oil as per IS 1866-1961. (contd....)
	2 <sup>nd</sup>	1.4.Measuring insulation resistance by different methods such as i) Polarization, ii) Dielectric absorption, iii) Megger Insulating oil - properties of insulating oil, causes of deterioration of oil, testing of transformer oil as per IS 1866-1961. (contd....)
	3 <sup>rd</sup>	1.4.Measuring insulation resistance by different methods such as i) Polarization, ii) Dielectric absorption, iii) Megger Insulating oil - properties of insulating oil, causes of deterioration of oil, testing of transformer oil as per IS 1866-1961.
4 <sup>th</sup>	1 <sup>st</sup>	<b>II.Installation and Erection</b> 2.1.Concept of foundation for installation of machinery. Requirements of foundation for static and rotating electrical machinery. (contd....)
	2 <sup>nd</sup>	2.1.Concept of foundation for installation of machinery. Requirements of foundation for static and rotating electrical machinery. (contd....)
	3 <sup>rd</sup>	2.2.Concept of leveling and aligning Procedure for leveling and alignment of direct coupled drive, effects of misalignment. (contd....)
5 <sup>th</sup>	1 <sup>st</sup>	2.2.Concept of leveling and aligning Procedure for leveling and alignment of direct coupled drive, effects of misalignment.
	2 <sup>nd</sup>	2.3.Installation of transformer as per I.S.-1886-1967 and procedure of installation of transformer, Requirements of installation of pole mounted transformer.(contd....)
	3 <sup>rd</sup>	2.3.Installation of transformer as per I.S.-1886-1967 and procedure of installation of transformer, Requirements of installation of pole mounted transformer.
6 <sup>th</sup>	1 <sup>st</sup>	2.4.Requirements of installation of rotating electrical machines as per I.S. 900 - 1965 Devices and tools required for loading, unloading, lifting, and carrying heavy equipment and precautions to be taken while handling them. (contd....)
	2 <sup>nd</sup>	2.4.Requirements of installation of rotating electrical machines as per I.S. 900 - 1965 Devices and tools required for loading, unloading, lifting, and carrying heavy equipment and precautions to be taken while handling them. (contd....)
	3 <sup>rd</sup>	2.4.Requirements of installation of rotating electrical machines as per I.S. 900 - 1965 Devices and tools required for loading, unloading, lifting, and carrying heavy equipment and precautions to be taken while handling them.
7 <sup>th</sup>	1 <sup>st</sup>	<b>III.Testing and Commissioning</b> 3.1.Concept of testing, Objectives of testing. Roles of I.S.S. in testing of electrical equipment, Types of tests: Routine tests, type tests, supplementary test, special tests, Methods of testing - Direct/Indirect/Regenerative testing. (contd....)

	2nd	3.1. Concept of testing, Objectives of testing. Roles of I.S.S. in testing of electrical equipment, Types of tests: Routine tests, type tests, supplementary test, special tests, Methods of testing - Direct/Indirect/Regenerative testing. (contd....)
	3rd	3.1. Concept of testing, Objectives of testing. Roles of I.S.S. in testing of electrical equipment, Types of tests: Routine tests, type tests, supplementary test, special tests, Methods of testing - Direct/Indirect/Regenerative testing.
	1st	3.2. Tolerances for the various items for equipment-transformer, induction motor, dc motor, synchronous machines.
8th	2nd	3.3. Commissioning: Tests before Commissioning for transformer, induction motor, alternator.
	3rd	3.4. Testing of transformer as per I.S.1886- 1967 and I.S.2026- 1962.
	1st	3.5. Testing of three-phase Induction motor as per I.S.325 - 1970. Testing of single-phase induction motor as per I.S.990-1965. Testing of synchronous machines as per ISS. (contd....)
9th	2nd	3.5. Testing of three-phase Induction motor as per I.S.325 - 1970. Testing of single-phase induction motor as per I.S.990-1965. Testing of synchronous machines as per ISS.
	3rd	3.6. Testing of D.C. machines.
10th	1st	<b>IV. Troubleshooting Plans</b> 4.1. Internal and external causes for failure / abnormal operation of equipment. (contd....)
	2nd	4.1. Internal and external causes for failure / abnormal operation of equipment.
	3rd	4.2. List of mechanical faults, electrical faults and magnetic faults in the electrical equipment, remedies, applications. (contd....)
11th	1st	4.2. List of mechanical faults, electrical faults and magnetic faults in the electrical equipment, remedies, applications. (contd....)
	2nd	4.2. List of mechanical faults, electrical faults and magnetic faults in the electrical equipment, remedies, applications.
	3rd	4.3. Use of tools like bearing puller, filler gauges, dial indicator, spirit level, megger, earth tester, and growler. Common troubles in electrical equipment and machines. (contd....)
12th	1st	4.3. Use of tools like bearing puller, filler gauges, dial indicator, spirit level, megger, earth tester, and growler. Common troubles in electrical equipment and machines. (contd....)
	2nd	4.3. Use of tools like bearing puller, filler gauges, dial indicator, spirit level, megger, earth tester, and growler. Common troubles in electrical equipment and machines. (contd....)
	3rd	4.3. Use of tools like bearing puller, filler gauges, dial indicator, spirit level, megger, earth tester, and growler. Common troubles in electrical equipment and machines.
13th	1st	<b>V. Maintenance</b> 5.1. Causes of failure of electrical machines.
	2nd	5.2. Preventive maintenance-procedure or developing maintenance schedules for electrical machines. (contd....)
	3rd	5.2. Preventive maintenance-procedure or developing maintenance schedules for electrical machines.
14th	1st	5.3. Factors affecting preventive maintenance schedules, Concept of TPM, Pillars of TPM. . (contd....)
	2nd	5.3. Factors affecting preventive maintenance schedules, Concept of TPM, Pillars of TPM. (contd....)
	3rd	5.3. Factors affecting preventive maintenance schedules, Concept of TPM, Pillars of TPM.
15th	1st	5.4. Identification of different types of faults developed such as mechanical/ electrical/ magnetic faults. (contd....)
	2nd	5.4. Identification of different types of faults developed such as mechanical/ electrical/ magnetic faults. (contd....)
	3rd	5.4. Identification of different types of faults developed such as mechanical/ electrical/ magnetic faults.

  
23.12.21  
Sign. of faculty

  
23.12.21  
Sign. of sr. lecturer  
Head of Dept. (HOD)  
Electrical & ETC E

  
23.12.21  
Sign. of principal