

BHUBANANANDAORISSASCHOOL OF
ENGINEERING, CUTTACK
ELECTRICAL ENGG. DEPARTMENT

LESSON PLAN

SEMESTER: 6TH (A)

SESSION – SUMMER (2022-23)

SUBJECT: ELECTRICAL INSTALLATION AND ESTIMATING

NAME OF FACULTY: PADMINI PRADHAN

Discipline: Electrical Engg.	Semester: 6 th (A)	Name of the teaching faculty: PADMINI PRADHAN
Subject: ELECTRICAL INSTALLATION AND ESTIMATING	No. of Days/per week class allotted: 05 PERIODS /WEEK (MON-1, TUE-2, THU-2, FRI-1 PERIODS)	Semester: From Date: 14/02/2023 To Date: 23/05/2023
		No. of weeks: 15 WEEKS
Week	Class Day	Theory/Practical Topics
1 st (14/02/2023-18/02/2023)	14/02/2023	1. INDIAN ELECTRICITY RULES Definitions, Ampere, Apparatus, Accessible, Bare, cable, circuit, circuit breaker, conductor voltage (low, medium, high, EH), live, dead, cut-out, conduit, system, danger, installation, earthing system, span, volt, switch gear, etc.
	15/02/2023	1.2 General safety precautions, rule 29, 30, 31, 32, 33, 34, 35, 36, 40, 41, 43, 44, 45, 46
		1.3 General conditions relating to supply and use of energy : rule 47, 48, 49, 50, 51, 54, 55, 56, 57, 58, 59, 60, 61, 62, 63, 64, 65, 66, 67, 68, 70.
	16/02/2023	1.4 OH lines : Rule 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91
	16/02/2023	1.4 OH lines : Rule 74, 75, 76, 77, 78, 79, 80, 86, 87, 88, 89, 90, 91
	17/02/2022	2. Electrical Installations. 2.1 Electrical Installation, Wiring System <ul style="list-style-type: none"> ▪ Methods of wiring, Types of cable used in internal wiring, voltage grinding of cables, General specification of cable
	20/02/2023	2.1 Electrical Installation, Wiring System <ul style="list-style-type: none"> ▪ Methods of wiring, Types of cable used in internal wiring, voltage grinding of cables, General specification of cable
2 nd (20/02/2023-25/02/2023)	20/02/2023	

	21/02/2023	2. 2 ACCESSORIES: Main switch and distribution boards, conduits, conduit accessories and fittings . Lighting accessories and fitting .
	23/02/2023	2. 2 ACCESSORIES: Main switch and distribution boards, conduits, conduit accessories and fittings . Lighting accessories and fitting
	23/02/2023	Fuses, important definitions, determination of size of fuse
	24/02/2023	fuse – wire, fuse units. Earthing conductor, earthing, IS specifications regarding earthing of electrical installations, points to be earthed
3 rd (27/02/2023-04/03/2023)	27/02/2023	fuse – wire, fuse units. Earthing conductor, earthing, IS specifications regarding earthing of electrical installations, points to be earthed
	28/03/2023	. Determination of size of earth wire and earth plate for domestic and industrial installations. Material required for GI pipe earthing
	02/03/2023	Determination of size of earth wire and earth plate for domestic and industrial installations. Material required for GI pipe earthing
	02/03/2023	2. 3 LIGHTING SCHEME: Aspects of good lighting services. Types of lighting schemes, design of lighting schemes, factory lighting, public lighting installations, street lighting.
	03/03/2023	2.3 LIGHTING SCHEME: Aspects of good lighting services. Types of lighting schemes, design of lighting schemes, factory lighting, public lighting installations, street lighting
4 th (06/03/2023-11/03/2023)	06/03/2023	General rules for wiring, determination of number of points (light, fan, socket, outlets), determination of total load, determination of Number of sub circuits.
	07/03/2023	3.Internal Wiring 3.1 Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal sheathed wiring, conduit wiring, their advantage and disadvantages comparison and applications

	08/03/2023	HOLI
	09/03/2023	3 Internal Wiring 3.1 Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal sheathed wiring, conduit wiring, their advantage and disadvantages comparison and applications
	09/03/2023	3.1 Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal sheathed wiring, conduit wiring, their advantage and disadvantages comparison and applications
	10/03/2023	CLASS TEST-1
5 TH (13/03/2023-18/03/2023)	13/03/2023	3.1 Type of internal wiring, cleat wiring, CTS wiring, wooden casing capping, metal sheathed wiring, conduit wiring, their advantage and disadvantages comparison and applications
	14/03/2023	3.2 Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m ² with given light
	16/03/2023	3.2 Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m ² with given light
	16/03/2023	3.2 Prepare one estimate of materials required for CTS wiring for small domestic installation of one room and one verandah within 25 m ² with given light
	17/03/2023	3.3 Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandah within 25 m ² with given light
6 TH (19/03/2023-25/03/2023)	20/03/2023	3.3 Prepare one estimate of materials required for conduit wiring for small domestic installation of one room and one verandah within 25 m ² with given light
	21/03/2023	3.4 Prepare one estimate of materials required for concealed wiring for domestic installation of two rooms and one latrine, bath, kitchen & verandah within 80m ² with given light, fan & plug points
	23/03/2023	3.4 Prepare one estimate of materials required for concealed wiring for domestic installation of two rooms and

		23/03/2023	one latrine, bath, kitchen & verandah within 80m ² with given light, fan & plug points.
		24/03/2023	3. 5 Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation about 30m ² and load within 10 KW.
7 th (26/03/2023-01/04/2023)		27/03/2023	3. 5 Prepare one estimate of materials required for erection of conduct wiring to a small workshop installation about 30m ² and load within 10 KW. 4. Overhead Installations 4.1 Main components of overhead lines, line supports, factors Governing Height of pole, conductor materials determination of size of conductor for overhead transmission line, cross arms, pole brackets and clamps, guys and stays, conductors configurations, spacing and clearances, span lengths, overhead line insulators 4.2 Types of insulators, lighting arresters, danger plates, anti-climbing devices, bird guards, beads of jumpers, jumpers, tee-offs, guarding of overhead lines.
		28/03/2023	
		30/03/2023	SHREERAM NAVAMI
		31/03/2023	4.2 Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR
8 th (03/04/2023-08/04/2023)		03/04/2023	4.2 Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR contd.
		04/04/2023	4.3 Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using

			Ariel fuse, service support, energy box and meters etc
			MAHAVISHUVASANKRANTI
10 th (17/04/2023-22/04/2023)	14/04/2023	17/04/2023	5. 2 Prepare and estimate for providing single phase supply of load of 5 KW (light, fan, socket) to a single stored residential building contd.
		18/04/2023	5. 2 Prepare and estimate for providing single phase supply of load of 5 KW (light)
		20/04/2023	5. 2 Prepare and estimate for providing single phase supply of load of 5 KW (light)
		20/04/2023	5. 3 Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter.contd.
		21/04/2023	5. 3 Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter.contd.
11 th (24/04/2023-29/04/2023)	24/04/2023	25/04/2023	5. 3 Prepare and estimate for providing single phase supply load of 3KW to each floor of a double stored building having separate energy meter.contd.
		26/04/2023	INTERNAL ASSESSMENT
		27/04/2023	5. 4 Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.contd
		28/04/2023	5. 4 Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.contd
12 th (30/04/2023-06/05/2023)	01/05/2023	02/05/2023	5. 4 Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using insulated wire.contd
		04/05/2023	5.5.Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.contd.

		06/04/2023	ACSR. 4.3.Prepare an estimate of materials required for LT distribution line within load of 100 KW maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consideration using ACSR.
		06/04/2023	4.4.Prepare an estimate of materials required for HT distribution line (11 KV) within 2 km and load of 2000 KVA maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consider action using ACSR
		07/04/2023	GOOD FRIDAY
	9 th (10/04/2023-15/04/2023)	10/04/2023	4.4.Prepare an estimate of materials required for HT distribution line (11 KV) within 2 km and load of 2000 KVA maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consider action using ACSR
		11/04/2023	CLASS TEST-2
		13/04/2023	4.Prepare an estimate of materials required for HT distribution line (11 KV) within 2 km and load of 2000 KVA maximum and standard spans involving calculation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation of the size of conductor (from conductor chart), current carrying capacity and voltage regulation consider action using ACSR
		13/04/2023	5. OVER HEAD SERVICE LINES 5. 1 Components of service lines service line (cables and conductors), bearer wire, lacing rod

	05/05/2023	BUDHHA PURNIMA
13 th (07/05/2023-13/05/2023)	08/05/2023	5.5.Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.contd.
	09/05/2023	5.5.Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.contd.
	11/05/2023	ESTIMATING FOR DISTRIBUTION SUBSTATIONS
		6.1 Prepare one materials estimate for following types of transformer substations
	11/05/2023	6.1 Prepare one materials estimate for following types of transformer substations
	12/05/2023	6.1.1.Pole mounted substation
14 th (15/05/2023-20/05/2023)	15/05/2023	6.1.1.Pole mounted substation
	16/05/2023	6.1.2.Pilinth Mounted substation contd.
	18/05/2023	6.1.2.Pilinth Mounted substation contd.
	18/05/2023	REVISION
	19/05/2023	SABITRI AMAVASYA
15 th (22/05/2023-23/05/2023)	22/05/2023	REVISION
	22/05/2023	REVISION

			BUDDHA PURNIMA
13 th (07/05/2023-13/05/2023)	05/05/2023	08/05/2023	5.5.Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.contd.
	09/05/2023		5.5.Prepare one estimate of materials required for service connection to a factory building with load within 15 KW using bare conductor and insulated wire combined.contd.
	11/05/2023		ESTIMATING FOR DISTRIBUTION SUBSTATIONS
			6. 1 Prepare one materials estimate for following types of transformer substations
	11/05/2023		6. 1 Prepare one materials estimate for following types of transformer substations
	12/05/2023		6. 1. 1.Pole mounted substation
14 th (15/05/2023-20/05/2023)	15/05/2023		6. 1. 1.Pole mounted substation
	16/05/2023		6. 1.2.Plinth Mounted substation contd.
	18/05/2023		6. 1.2.Plinth Mounted substation contd.
	18/05/2023		REVISION
	19/05/2023		SABITRI AMAVASYA
15 th (22/05/2023-23/05/2023)	22/05/2023		REVISION
	22/05/2023		REVISION