



# SWARNANDHRA

## COLLEGE OF ENGINEERING & TECHNOLOGY

(Autonomous)

Accredited by NBA, AICTE, NEW DELHI • Accredited by NAAC with "A" Grade – 3.32/4.00 CGPA

Recognized by UGC Under Sections 2(f) & 12 (B) of UGC Act 1956

Approved by AICTE, New Delhi, Permanent Affiliated to JNTU K, Kaklnada

Seetharampuram, NARSAPUR-534 280, W.G-Dist., Andhra Pradesh

### Department of Electrical and Electronics Engineering

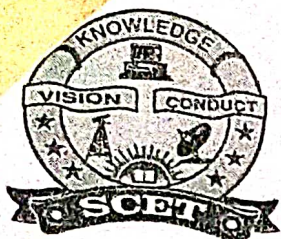
### TEACHING PLAN

Course Code	Course Title	Semester	Branches	Contact Periods/ Week	Acad emic Year	Date of Commencement of Semester
19EE5E01	INDUSTRIAL ELECTRICAL SYSTEMS	B.Tech /V sem	EEE	6	2021 - 2022	04/10/2021

**Course Outcomes:** After successful completion of this course, students should be able to:

1	Explain about electrical wiring systems.(K2)
2	Compare different Protective Devices.(K4)
3	Estimate the illumination levels produced by various sources (K5)
4	Adapt with the different types of heating and welding techniques.(K6)
5	Find the speed/time characteristics of different types of traction motors (K1)

Unit	Outcome/ Bloom's Level	Topics No.	Topics/ Activity	Text Book/ Reference	Conta ct Hour	Delivery Method/ LMS
I	CO1 : Explain about electrical wiring systems.(K2)	<b>ELECTRICAL WIRING SYSTEM</b>				
		1.1	System of supply	T1,R1	1	Chalk & Talk
		1.2	selection of wiring	T1,R1	1	Chalk & Talk
		1.3	Rules for wiring	T1,R1	1	Chalk & Talk
		1.4	System of wiring,	T1,R1	1	Chalk & Talk
		1.5	Separation of power and lighting circuits	T1,R1	1	Chalk & Talk
		1.6	Testing of wiring installation	T1,R1	1	Chalk & Talk
		1.7	Necessity of Earthing	T1,R1	1	PPT
		1.8	Factors governing resistance of Earthing Electrode	T1,R1	1	PPT
		1.9	System of Earthing	T1,R1	1	PPT
		1.10	Rules for Earthing	T1,R1	1	PPT
		1.11	Methods of improving the Earth resistance	T1,R1	1	Chalk & Talk
		1.12	Double Earthing ,	T1,R1	1	PPT
		1.13	Resistance of Earth electrode	T1,R1	1	PPT
		1.14	Size of Earth continuity conductor	T1,R1	1	Tutorial Class
Content beyond syllabus (if need)			Standard wire gauge, Types of cables			
<b>Total</b>					14	



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		ELECTRICAL PROTECTION DEVICES				
II	CO2: CO2 : Compare different Protective Devices.(K4)	2.1	Introduction, ,	T1,R2	1	Chalk & Talk
		2.2	Protective relays, Fuses.	T1,R2	1	Chalk & Talk
		2.3	Main features of good protective devices.	T1,R2	1	Chalk & Talk
		2.4	Protective relays, Fuses.	T1,R2	1	Chalk & Talk
		2.4	Types of fuses,	T1,R2	1	Chalk & Talk
		2.5	Electrical Earthing, Neutral wire.	T1,R2	1	Chalk & Talk
		2.6	Why grounding is required	T1,R2	1	Chalk & Talk
		2.7	Methods of Earthing	T1,R2	1	Chalk & Talk
		2.8	Earth Leakage circuit breaker system	T1,R2	1	Chalk & Talk
		2.9	Miniature circuit breaker (MCB) system	T1,R2	1	Chalk & Talk
		2.10	Advantages of Using MCB over switch fuses.	T1,R2	1	Chalk & Talk
		2.11	Availability of MCB's ,	T1,R2	1	Chalk & Talk
		2.12	General specification of MCB'S	T1,R2	1	PPT
		2.13	MCB selection chart for Household Appliances	T1,R2	1	PPT
Content beyond syllabus (if need)		Over load trips, precautions against shocks				
<b>Total</b>					14	
		ILLUMINATION				
III	CO3 : Estimate the illumination levels produced by various sources (K5)	3.1	Introduction, Nature of radiation	T3,R1	1	Chalk & Talk
		3.2	Definitions, Polar curve	T3,R1	1	Chalk & Talk
		3.3	Law of illumination	T3,R1	1	Chalk & Talk
		3.4	photometry, Lumen method	T3,R1	1	PPT
		3.5	Electric lamp-tungsten lamp	T3,R1	1	Chalk & Talk
		3.6	Discharge lamps	T3,R1	1	Chalk & Talk
		3.7	MV and SV lamps	T3,R1	1	Chalk & Talk
		3.8	Flood lighting and calculation	T3,R1	1	Chalk & Talk
		3.9	Street Lighting,	T3,R1	1	Chalk & Talk
		3.10	LED lighting	T3,R1	1	Chalk & Talk



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		3.11	Design of Choke and Capacitor	T3,R1	1	Chalk & Talk
		<b>Total</b>			11	
IV	CO4 : Adapt with the different types of heating and welding techniques.(K6)	<b>ELECTRIC HEATING &amp; WELDING</b>				
		4.1	Introduction,	T2,R1,R2	1	Chalk & Talk
		4.2	classification of methods of electrical heating,	T2,R1,R2	1	Chalk & Talk
		4.3	Requirements of a good heating material	T2,R1,R2	1	PPT
		4.4	Design of heating elements	T2,R1,R2	1	PPT
		4.5	Temperature control of resistance furnace	T2,R1,R2	1	Chalk & Talk
		4.6	Electric Arc furnace	T2,R1,R2	1	Chalk & Talk
		4.7	Induction Heating, Dielectric Heating	T2,R1,R2	1	Chalk & Talk
		4.8	Electric Welding	T2,R1,R2	1	Chalk & Talk
		4.9	Resistance Welding	T2,R1,R2	1	Chalk & Talk
		4.10	Electric arc Welding	T2,R1,R2	1	Chalk & Talk
		4.11	electric welding equipment	T2,R1,R2	1	Chalk & Talk
		4.12	comparison between A.C. and D.C. Welding	T2,R1,R2	1	Chalk & Talk
Content beyond syllabus (if need)		<b>Total</b>			12	
V	CO5 : Find the speed/time characteristics of different types of traction motors (K1)	<b>ELECTRIC TRACTION</b>				
		5.1	Introduction,	T1,T2,R1	1	Chalk & Talk
		5.2	Requirements of an ideal traction system	T1,T2,R1	1	PPT
		5.3	supply system of electric traction	T1,T2,R1	1	Chalk & Talk
		5.4	Train movement,-,	T1,T2,R1	1	Chalk & Talk
		5.5	Speed–time curves,	T1,T2,R1	1	Chalk & Talk
		5.7	Mechanism of train movement	T1,T2,R1	1	Stud. Seminars
		5.8	The traction motors, Traction motor control	T1,T2,R1	1	Chalk & Talk
		5.9	Control of single phase series motor	T1,T2,R1	1	Smart Board
		5.10	Braking of Electric Motors	T1,T2,R1	1	Chalk & Talk
Content beyond syllabus (if need)		<b>Total</b>			10	
		<b>Cumulative Proposed Periods</b>			61	



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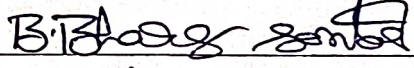
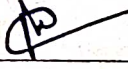

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### Text Books:

S. No.	Author, Book Title, Edition, Publisher, Year of Publication
1	C.L. Wadhwa, "Generation, Distribution and Utilization of electrical Energy", New Age International (P) Limited, Publishers, 2015- Revised Third Edition.
2	S.L. Uppal and G.C. Garg, "Electrical Wiring, Estimating & Costing", Khanna publishers, 2008
3	K. B. Raina, "Electrical Design, Estimating & Costing", New age International, 2007
4	S. Singh and R. D. Singh, "Electrical estimating and costing", Dhanpat Rai and Co., 1997

### Reference Books:

S. No	Authors, Book Title, Edition, Publisher, Year of Publication
1	N.V.Suryanarayana, "Utilization of Electrical Power including Electric drives and Electric reaction", New Age International (P) Limited, Publishers, 1996
2	E. Openshaw Taylor, Orient Longman, "Utilization of Electric Energy"
3	H. Joshi, "Residential Commercial and Industrial Systems", McGraw Hill Education, 2008
4	B.R. Mehta, Y. Jaganmohan Reddy, "Industrial Process Automation Systems" Elsevier Publications 2014.

	Name	Signature with Date
i.	Course Coordinator	Mr.B Bhargav santosh 
ii.	Module Coordinator	Mr.P Yanna Reddy 
iii.	Programme Coordinator	Mr.A Satyanarayana 

  
Principal