



VIVEKANANDHA COLLEGE OF ENGINEERING FOR WOMEN
(Autonomous Institution, Affiliated to Anna University, Chennai)
DEPARTMENT OF EEE



LESSON PLAN

Sub code & Name: U14EE841- UTILIZATION OF ELECTRICAL ENERGY

Year / Sem : IV-YEAR A&B / VII

UNIT – I (INTRODUCTION TO ILLUMINATION)				
S.NO	Topics to be covered	Duration in Min	Teaching Aid	Reff Book
1	Illumination – Terminology	45	BB	T1,T2,R1
2	Laws of illumination, Photometry	45	BB, Animation videos	T1,T2,R1, You Tube
3	Laws of lighting calculations	45	BB, Animation videos	T1,T2,R1, You Tube
4	Electric lamps – Different types of lamps	45	BB	T1,T2,R1
5	LED lighting and Energy efficient lamps	45	BB	T1,T2,R1
6	Design of lighting schemes	45	BB	T1,T2,R1
7	Factory lighting - flood lighting – street lighting.	45	BB, Animation videos	T1,T2,R1, You Tube
8	Revision	45		
9	Revision	45		
UNIT –II (ELECTRICAL ENERGY APPLIANCES AND EARTHING)				
1	Domestic utilization of electrical energy	45	BB	T1,T2,R1
2	House wiring. Induction based appliances	45	BB, Animation videos	T1,T2,R1, You Tube
3	Online and OFF line	45	BB	T2,R1
4	UPS, Batteries	45	BB, Animation videos	T1,T2,R1, You Tube
5	Power quality aspects – nonlinear and domestic loads	45	BB, Animation videos	T1,T2,R1, You Tube
6	Earthing	45	BB	T2,R1,
7	Domestic, industrial and sub-station	45	BB, Animation videos	T1,T2,R1, You Tube
8	Earthing Standards	45	BB	T2,R1
9	Revision	45		

UNIT –III (ELECTRIC HEATING)				
1	Introduction to Electric Heating	45	BB	T1,T2,R1
2	Types of heating and applications	45	BB	T1,T2,R1
3	Electric furnaces - Resistance	45	BB	T1,T2,R1
4	Inductance and Arc	45	BB	T1, R1
5	Furnaces	45	BB, Animation videos	T1,T2,R1, You Tube
6	Electric welding and sources of welding	45	BB, Animation videos	T1,T2,R1, You Tube
7	Electrolytic processes	45	BB, Animation videos	T1,T2,R1, You Tube
8	Electro-metallurgy and electro-plating	45	BB	T1,T2,R1
9	Revision	45		
UNIT – IV (ELECTRIC DRIVES AND TRACTION)				
1	Introduction to Traction system	45	PPT	T1, R1
2	Power supply, traction drives	45	BB, Animation videos	T1, R1
3	Power supply, traction drives	45	BB, Animation videos	T1,T2,R1, You Tube
4	Electric braking	45	PPT	T1, R1
5	Tractive effort calculations	45	PPT	T1, R1
6	speed-time characteristics	45	PPT	T1, R1
7	Locomotives and train	45	PPT	T1, R1
8	Recent trend in electric traction	45	BB	T1, R1
9	Revision	45	BB	
UNIT – V (REFRIGERATION AND ENERGY EFFICIENT MOTORS)				
1	Refrigeration- Domestic refrigerator and water coolers	45	PPT	T1, R1
2	Air-Conditioning	45	BB, Animation videos	T1,T2,R1, You Tube
3	Various types of air	45	PPT	T1, R1
4	Conditioning system and their applications	45	BB	T1, R1
5	smart air conditioning units	45	BB	T1, R1
6	Energy Efficient motors:	45	BB	T1, R1

	Standard motor efficiency			
7	Need for more efficient motors, Motor life cycle	45	PPT	T1, R1
8	Direct Savings and payback analysis, efficiency evaluation factor- Energy auditing	45	BB	T1, R1
9	Revision	45	PPT	T1, R1
1	Dr. Uppal S.L. and Prof. S. Rao, 'Electrical Power Systems', Khanna publishers, New Delhi, 2009.			
2	Gupta, J.B., 'Utilisation of Electrical Energy and Electric Traction', S.K.Kataria and sons, 10th Edition, 1990.			
3	Rajput R.K., 'Utilisation of Electrical Power', Laxmi publications, 1st Edition, 2007			
S. No				
1	N.V.Suryanarayana, 'Utilisation of Electrical Power', New Age International publishers, Reprinted 2005.			
2	N.V.Suryanarayana, 'Utilisation of Electrical Power', New Age International publishers, Reprinted 2005.			