

## EE 547 Utilization of Electrical Energy

### COURSE INFORMATION

Prerequisites	Academic Year & Level		Teaching Methods			Credit Hrs.
	Year	Semester	Lecture	Tutorial	Lab.	
EE 441	5	9 \ 10	2	2	0	3

### COURSE AIM

This course provides a through coverage of the major utilization loads, other than drives. The course also covers one of the most important aspects of utilization: electrical safety.

### COURSE WEEKLY CONTENTS

- 1 Terms used in illumination and laws of illumination
- 2 Polar curves and photometry.
- 3 Design of illumination schemes
- 4 Electric Heating
- 5 The arc furnaces and electric welding
- 6 Comparison between AC and DC welding
- 7 Ideal traction system + Midterm Exam
- 8 Train movement and energy consumption
- 9 Electric traction motors
- 10 Control of traction motors
- 11 Electrolytic processes
- 12 Calculation of current required for depositing a metal
- 13 Refrigeration
- 14 Air conditioning.
- 15 Tariffs

### STUDENT GRADING & ASSESSMENT

Weeks	Exams	Assign.	Quizzes	Reports	Present.	Lab.	Total
1 to 7	20 Midterm	←	1 0	M A R K S		→	30
To be freely distributed among possible assessments							
8 to 12	←		2 0	M A R K S		→	20
13 to 15	←		1 0	M A R K S		→	10
16 or 17	40 Final						40
Total	Exams	Assign.	Quizzes	Reports	Present.	Lab.	100

### REFERENCES

- Textbook Gupta, J.B "Utilization of Electric Power & Electric Traction" Katson.
- Other IES Lighting Hand book, "Illumination Engineering Society", New York.  
 C.J. Erickson, "Hand book of elec. Heating for industry", IEEE,.  
 IEEE "Recommended practice for emergency & Standby power systems", USA.