

NIRMA UNIVERSITY
Institute of Technology
Electrical Engineering Department
B. Tech. Programme (Open to All)
Open Elective Course

L	T	P	C
3	0	0	3

Course Code	2EEOE52
Course Title	Design, Estimation and Costing of Electrical Systems

Course Outcomes (COs):

At the end of the course, students will be able to-

1. design illumination schemes for various application
2. estimate costing of different electrical installations
3. select and apply safety and protecting schemes related with electrical system

Syllabus:

Teaching Hours: 45

Unit-1: Electrical Installations

11

General requirements, design considerations, testing, estimating and costing -symbols, standards –National Electrical Code –design of panel boards –design and estimation of service connections –design and safety aspects of residential buildings

Unit-2: Illumination schemes

09

Types of light sources and lighting arrangements –energy efficiency in lamps and illumination –design of lighting for various purposes.

Unit-3: Design, Estimation and Costing

13

Electrical system design, estimation and costing of commercial buildings, hospitals, recreational and assembly buildings, cinema theatres, small industries, Design of electrical installations of high rise buildings: electrical aspects of lifts, escalators services, standby generators

Unit-4: Safety and Protection

12

Design, estimation and costing of outdoor and indoor Substations -Layouts and single line diagrams of outdoor and indoor substations, design of earthing system, earth mat, plate and pipe earthing –Safety of electrical installations –Lightning protection

Self-Study:

The self-study contents will be declared at the commencement of semester. Around 10% of the questions will be asked from self-study contents.

Suggested Readings:

1. K.B. Raina, S.K. Bhattacharya, Electrical Design, Estimating and Costing, New Age International (p) Ltd. Publishers, New Delhi.
2. Surjit Singh. Electrical Estimating and Costing, Dhanpat Rai & Co., Delhi.
3. J.B. Gupta, Electrical Installation Estimating and Costing, Kataria, S. K., & Sons.
4. G. Ramamurthy, Hand book of Electrical Power Distribution, Universities Press (India) Private Ltd., New Delhi.
5. N Alagappan, S Ekambaram, Electrical estimating and Costing, McGraw-Hill.
6. Narang K.L., A Text Book of Electrical Engineering Drawing, Tech India Publications.
7. IS, National Electrical Code, Bureau of Indian Standard Publications.

L = Lecture, T = Tutorial, P = Practical, C = Credit

w.e.f. academic year 2020-21 and onwards