

EE293 ILLUMINATION ENGINEERING

Credits 4:0:0

Pre requisite: Basic Electrical Engineering

Unit I: Language of Light & Lighting

Eye & vision, Light & Lighting, Light & Vision, Light & Color , Basic Concepts and Units, Photometry and Measurement, Quantity and Quality of Lighting.

Unit II: Accessories

Light sources: Daylight, Incandescent, Electric discharge, Fluorescent, Arc lamps, Lasers, Neon signs, LED-LCD displays, Luminaries, Wiring, Switching & Control circuits.

Unit III: Calculation and Measurement

Polar curves, Effect of voltage variation on efficiency and life of lamps, Lighting calculations, Solid angle, Inverse square and cosine laws, Illumination from point, line and surface sources. Photometry and Spectro -photometry, photocells.

Unit IV: Interior Lighting

Lighting design procedure for Industrial, Residential, Office, Departmental stores, Indoor stadium, Theaters and Hospitals.

Unit V: Exterior Lighting

Environment and glare, Lighting Design procedure for Flood, Street, Aviation and Transport lighting, Lighting for Displays and Signaling.

Text Books

1. Joseph B. Murdoch, "Illumination Engineering from Edison's Lamp to the Laser", Visions Communications, Washington DC, USA, 2nd Edition, 1994.
2. Jack L. Lindsey, "Applied Illumination Engineering", Prentice Hall of India, New Delhi, 2nd Sub Edition, May 1997.

References

1. Marc Schiler, "Simplified Design of Building Lighting", John Wiley and Sons, 1992
2. IES Lighting Handbook, 8th Edition, 1993.