GUJARAT TECHNOLOGICAL UNIVERSITY
Syllabus for M. Arch - 2019
THIRD SEMESTER
Subject: Advanced Day lighting

Course Code: X36106 **Credits: 3**

Course Objective: Understand contemporary theory, methods and design applications of day lighting and electrical lighting integration as key elements in sustainable architectural design. Energy efficient lighting

Course Contents:

Introduction-Light, Vision, Characteristics, importance of day light, methods of lighting Lamps and Sources- Optics, Controlling light, Electricity and basics of wiring for lighting fixtures. Light in Architecture-Psychology of light, perception, Quality of the visual environment, Light distribution, light and shade, light levels/contours.

Luminaries and Applications: Types of fixtures (CFL, LED, Halogen, Metal halide etc) their specifications. Classification of lights and luminaries as per the usage, dimmer controls, Sensors etc. Lighting Design process: historical and cultural aspects of lighting; theory of current lighting design practice; Design concepts, methods for placing windows, interior and exterior lighting installations. Aesthetic, economic and environmental issues, lighting systems integration, Lighting calculations, representation/presentation of spaces with light, Computer simulation of visual effects of various lamps and luminaries. Integration of artificial lighting with natural light.

References:

1. Day lighting in Buildings Source Book; LBNL and International Energy Agency;
2. 2008. Millet, M; Light Revealing Architecture; Van Nostrand Reinhold, 1996.
3. Hopkinson, R.G.; Day lighting; Heinemen; 1966. Lam, William M.C.; Perception and Lighting as Form Givers for Architecture, 1968.
4. Moore, Fuller; Concepts & Practices of Architectural Daylighting; Van Nostrand Co.,Inc.; 1985.
5. Robins, Claud: Day lighting, Design & Analysis; VNR, 1986.
6. Fitch, J. Marston; American Building - The Environmental Forces that Shape It; 2nd Ed 1999.
7. Banham, R; Architecture of the Well Tempered Environment; 2nd Ed.; 1984,
8. Designing With Light.Gillette,J.Michael.McGrawHill.5thEdition.
9. Benjamin Evans, “Daylight in Architecture”, McGraw Hill Book Co., New York, 1981

10. Pritchard, D.C., “Lighting”, Longman Scientific & Technical, Harlow, 1995
11. MEBc Schiler, “Simplified Design of Building Lighting”, John Wiley & Sons, Inc.,New York, 1992