NATIONAL INSTITUTE OF TECHNOLOGY, TIRUCHIRAPPALLI

DEPARTMENT OF ARCHITECTURE

COURSE PLAN – PART I			
Course Title	**LIGHTING DESIGN**		
Course Code	**AR706**	**No. of Credits**	**3**
Department	**Architecture**	**Faculty**	**Dr.G.Subbaiyan**
Session	**January 2022**		
Pre-requisites Course Code	**Nil**		
Course Coordinator(s) (if, applicable)	**NA**		
Other Course Teacher(s)/Tutor(s) E-mail	**subbaiah@nitt.edu**	**Telephone No.**	**0431-2503557**
Course Type	☑ **Core course** ☐ ~~**Elective course**~~		

SYLLABUS (approved in BoS)

Electromagnetic spectrum. Visual response visual acquity, Glare & visual comfort. Colour perception, Visual Task Requirements. Side lighting concepts, Top lighting concepts. Designing Atria / Light Courts. Daylight Controls. Daylighting Design, Daylighting Analysis.

Electrical light sources and Luminaires. Task requirements, point-by-point method, Lumen method, Qualitative calculations and Supplementary Artificial Lighting.

REFERENCES:

1.Benjamin Evans, “Daylight in Architecture”, McGraw Hill Book Co., New York, 1981

2.Pritchard,D.C., “Lighting”, Longman Scientific & Technical, Harlow, 1995

3.MEBc Schiler, “Simplified Design of Building Lighting”, John Wiley & Sons, Inc., New York, 1992

4.Hopkinson, R. G., “Architectural Physics –Lighting”, HMS Office, London, 1963

5.Tregenza Peter & Loe David, “The Design of Lighting”, E & FN Spon, London, 1998.

COURSE OBJECTIVES

i. To make an awareness about the benfits of day lighting in buildings.
ii. To understand about different daylighting concepts, day lighting analysis and design.
iii. To be knowledgeable about the salient features of various Artificial light sources and luminaires.
iv. To understand the Artificial lighting design methods.
v. To get introduced to the software used for lighting design of buildings.

COURSE OUTCOMES (CO)

Course Outcomes	Aligned Programme Outcomes (PO)
i. Assessment of day lighting availability in existing buildings (Analysis). ii. Design of Fenestration for Day lighting of interior spaces. iii. Artificial lighting design for interior spaces of different types of buildings. iv. Integration of Day lighting and Artificial lighting – Permanent Supplementary Artificial Lighting Design. v. Make acquainted about the software used for lighting design of buildings.	

COURSE PLAN – PART II

COURSE OVERVIEW

This course focus on day lighting concepts, day lighting analysis and design of fenestration for day lighting of interior spaces, artificial lighting design for interior spaces, permanent supplementary artificial lighting design and the software used for lighting design of buildings .

COURSE TEACHING AND LEARNING ACTIVITIES

S.No.	Week	Topic	Mode of Delivery
1	1st	Lighting Fundamentals - Light and Optics, Measurement of Light, Vision and Perception, Color	PPT/ Lecture
2	2nd	Quality of the Visual Environment, Lighting requirements of different types of buildings	PPT/ Lecture/ Discussion
3	3rd & 4th	Day Lighting – Introduction and Concepts	PPT/ Lecture
4	5th & 6th	Day lighting – Analysis and Design	PPT/ Lecture/ Tutorials
5	7th	Electrical light sources	PPT/ Lecture
6	8th	Luminaires and Interior lighting systems.	PPT/ Lecture
7	9th	Artificial lighting design – Lumen Method	PPT/ Lecture/ Tutorials
8	10th	Artificial lighting design – Point by point method	PPT/ Lecture/ Tutorials
9	11th	Supplementary Artificial Lighting Design	PPT/ Lecture
10	12th & 13th	Lighting – Economics, Control and Maintenance	PPT/ Lecture

11	14th & 15th	Lighting design - software	Lecture / Tutorials
12	16th	Conclusion and Feedback	PPT

COURSE ASSESSMENT METHODS

S.No.	Mode of Assessment	Week/Date	Duration	% Weightage
1	Assignment/ Tutorial (Daylighting Analysis and Design)	7th week	10 days	20%
2	Test	9th week	1 hr.	20%
3	Assignment/ Tutorial (Lumen Method, point-by-point method and PSALI)	14th/ 15th week	10 days	30%
5	End-semester examination	2nd week – May 2022	2 hours	30%

COURSE EXIT SURVEY (mention the ways in which the feedback about the course is assessed and indicate the attainment also)

i. Feedback survey about course content and suggestions for any improvement/ modification - online
ii. Assessment of the knowledge the students have gained through this subject - online
iii. Feedback regarding the teaching-learning process - online

COURSE POLICY (including plagiarism, academic honesty, attendance, etc.)

i. For a student to secure a minimum of E grade he/ she has to secure a minimum of 30% in the final assessment and also secure maximum of 35% or Class Average/2 in all assessments put together.
ii. The minimum attendance requirement to be eligible for appearing in the final semester examination is 75%. A maximum of 10% shall be allowed under On Duty (OD) category.
iii. If any student is absent on the day of tutorial session, he/ she shall forfeit the marks for that particular tutorial exercise.
iv. If any candidate is absent in the test due to genuine reasons, he/ she can appear for retest.
v. Assignments are required to be prepared independently by each of the candidate. If any student submits assignments directly copied from other students / books/ journals (cut and paste) he/ she shall forfeit the marks for that particular assignment.

ADDITIONAL COURSE INFORMATION

The faculty member is available for consultation during working hours on all working days. The students can also e-mail their queries to **subbaiah@nitt.edu.**

FOR APPROVAL

Wilson .F

Course Faculty _____ **CC-Chairperson** _____ **HOD** Dr. K. Thirumaran