

University of Puerto Rico
 Mayagüez Campus
 College of Engineering
 Department of Electrical and Computer Engineering
 Bachelor of Science in Electrical Engineering

Course Syllabus

1. General Information:	
Alpha-numeric codification: INEL 4409 Course Title: ILLMINATION ENGINEERING Number of credits: 3 Contact Period: 45 Elective in INEL	
2. Course Description:	
English: Illumination design. Development and application of methods on luminance techniques. Interior and exterior lighting.	
Spanish: Diseño de iluminación. Desarrollo y aplicación de métodos en técnicas de luminancia. Iluminación interior y exterior.	
3. Pre/Co-requisites and other requirements:	
Prerequisite: INEL 4103	
4. Course Objectives:	
The purpose of this course is to prepare students to be proficient in designing interior and exterior illumination systems.	
5. Instructional Strategies:	
<input checked="" type="checkbox"/> conference <input checked="" type="checkbox"/> discussion <input type="checkbox"/> computation <input type="checkbox"/> laboratory <input type="checkbox"/> seminar with formal presentation <input type="checkbox"/> seminar without formal presentation <input type="checkbox"/> workshop <input type="checkbox"/> art workshop <input type="checkbox"/> practice <input type="checkbox"/> trip <input type="checkbox"/> thesis <input checked="" type="checkbox"/> special problems <input type="checkbox"/> tutoring <input type="checkbox"/> research <input type="checkbox"/> other, please specify:	
6. Minimum or Required Resources Available:	
All students are expected to bring a solid background in electric systems analysis. Students must work on projects by applying the technics discused in class.	
7. Course time frame and thematic outline	
Outline	Contact Hours
Light, eye, and vision	1.5
Color	1.5
Photometric units and terminology	2
Light sources	10
Optics and control of light	3
Luminaries	3
Lighting economics	3
Interior lighting design	9
Exterior lighting design	9

Exams	3
Total hours: (equivalent to contact period)	45

8. Grading System

Quantifiable (letters) Not Quantifiable

Evaluation Strategies (Suggested): The faculty member teaching the course will provide the student with the evaluation strategy he/she will be using throughout the semester. This will be done within the first week of classes.

	Quantity	Percent
<input checked="" type="checkbox"/> Exams	3	75%
<input type="checkbox"/> Final Exam		
<input type="checkbox"/> Short Quizzes		
<input type="checkbox"/> Oral Reports		
<input type="checkbox"/> Monographies		
<input type="checkbox"/> Portfolio		
<input checked="" type="checkbox"/> Projects	1	25%
<input type="checkbox"/> Journals		
<input type="checkbox"/> Other, specify: Homework	_____	
TOTAL:		100%

9. Bibliography:

R. Pérez Colón, Manual de Diseño de Sistemas de Iluminación, RUM, 2001

10. According to Law 51

Students will identify themselves with the Institution and the instructor of the course for purposes of assessment (exams) accommodations. For more information please call the Student with Disabilities Office which is part of the Dean of Students office (Chemistry Building, room 019) at (787)265-3862 or (787)832-4040 extensions 3250 or 3258.

Contribution of Course to meeting the requirements of Criterion 5:

Math	Basic Science	General	Engineering Topic
			√

12. Course Outcomes

Map to Program Outcomes

- The student is able to apply mathematics and science fundamentals to solve or to analyze an engineering problem or principle within the course material. (a)
- The students are able to follow logical and orderly design procedures, and complete a design to meet the given set of specification. The students clearly document his alternatives and decisions along the design process, and include considerations of codes, protocols, and engineering standards related to the design area. (c)
- Team members demonstrate an ability to organize the team (d)

- assigning responsibilities, balancing the work load, and participating in regular meetings. The objective of the design or assignment is completed. Students are able to compare different alternatives to present a suitable solution.
4. Students are able to compare different alternatives to present a suitable solution. Their solution shows their ability of physical thinking, approximation and simplification. (e)
 5. Students are able to apply ethical analysis in the evaluation of the proposed design. The work complies with safety standards, and their final design solution avoids ethical compromises. (f)
 6. Students are able to write a project report or paper. (g)
 7. Students prove their ability to find information related to their discipline by including a reference list of articles related to their course work. (i)
 8. Students discuss different alternatives to solve their problem with emerging technologies and their associated cost, and comment on their importance and how they cope with the needs of their design. (j)
 9. Students are able to make an appropriate choice and use of specialized tools, and software to complete a design. (k)

Person(s) who prepared this description and date of preparation: Lionel R. Orama. Submitted by: Lionel R. Orama, June, 19, 2008, Committee Coordinator.