

COURSE OUTLINE

(1) GENERAL

SCHOOL	HEALTH & CARE SCIENCES		
ACADEMIC UNIT	BIOMEDICAL SCIENCES		
DIVISION	OPTICS AND OPTOMETRY		
LEVEL OF STUDIES	UNDERGRADUATE		
COURSE CODE	7031	SEMESTER	7 th
COURSE TITLE	LIGHTING ENVIRONMENT AND VISION		
INDEPENDENT TEACHING ACTIVITIES <i>if credits are awarded for separate components of the course, e.g. lectures, laboratory exercises, etc. If the credits are awarded for the whole of the course, give the weekly teaching hours and the total credits</i>		WEEKLY TEACHING HOURS	CREDITS
Lectures		3Lec + 1Lab	5
<i>Add rows if necessary. The organisation of teaching and the teaching methods used are described in detail at (d).</i>			
COURSE TYPE <i>general background, special background, specialised general knowledge, skills development</i>	Specialty Module		
PREREQUISITE COURSES:	NO		
LANGUAGE OF INSTRUCTION and EXAMINATIONS:	GREEK		
IS THE COURSE OFFERED TO ERASMUS STUDENTS	NO		
COURSE WEBSITE (URL)			

(2) LEARNING OUTCOMES

<p>Learning outcomes</p> <p><i>The course learning outcomes, specific knowledge, skills and competences of an appropriate level, which the students will acquire with the successful completion of the course are described. Consult Appendix A</i></p> <ul style="list-style-type: none"> • <i>Description of the level of learning outcomes for each qualifications cycle, according to the Qualifications Framework of the European Higher Education Area</i> • <i>Descriptors for Levels 6, 7 & 8 of the European Qualifications Framework for Lifelong Learning and Appendix B</i> • <i>Guidelines for writing Learning Outcomes</i>
<p>The aim of the course is to understand the principles of indoor and outdoor lighting, the ergonomics of vision in daily practices in his professional career.</p> <p>Upon successful completion of the course the student will be able to:</p> <ul style="list-style-type: none"> • To know and understand the principles and quantities of photometry • To be aware of the different types of light sources and the lighting properties of materials • To understand indoor and outdoor lighting issues and practices. • To understand the basic concepts of Ergonomics of Vision

<p>General Competences <i>Taking into consideration the general competences that the degree-holder must acquire (as these appear in the Diploma Supplement and appear below), at which of the following does the course aim?</i></p>	
<p><i>Search for, analysis and synthesis of data and information, with the use of the necessary technology</i> <i>Adapting to new situations</i> <i>Decision-making</i> <i>Working independently</i> <i>Team work</i> <i>Working in an international environment</i> <i>Working in an interdisciplinary environment</i> <i>Production of new research ideas</i></p>	<p><i>Project planning and management</i> <i>Respect for difference and multiculturalism</i> <i>Respect for the natural environment</i> <i>Showing social, professional and ethical responsibility and sensitivity to gender issues</i> <i>Criticism and self-criticism</i> <i>Production of free, creative and inductive thinking</i> <i>Others...</i> </p>
<ul style="list-style-type: none"> • Working independently • Team work 	

(3) SYLLABUS

- Light, photometry, lighting calculations and measurements, sense of brightness and whiteness, color, color temperature, surface color, color rendering index, artificial light sources, lamps and luminaires, daylight.
- Vision, eye adjustment, vision system capabilities
- Lighting and Circadian system, lighting and work
- Lighting and visual discomfort, approaches to improve visual comfort
- Lighting and perception of space and objects
- Specific lighting applications (offices, Industrial, escape, driving, retail, for the elderly)
- Light and health, light pollution

(4) TEACHING and LEARNING METHODS - EVALUATION

DELIVERY <i>Face-to-face, Distance learning, etc.</i>	In class	
USE OF INFORMATION AND COMMUNICATIONS TECHNOLOGY <i>Use of ICT in teaching, laboratory education, communication with students</i>	e-class	
TEACHING METHODS <i>The manner and methods of teaching are described in detail. Lectures, seminars, laboratory practice, fieldwork, study and analysis of bibliography, tutorials, placements, clinical practice, art workshop, interactive teaching, educational visits, project, essay writing, artistic creativity, etc.</i> <i>The student's study hours for each learning activity are given as well as the hours of non- directed study according to the principles of the ECTS</i>	Activity	Semester workload
	Lectures	39
	Assignments	23
	Study	58
	Course total	120
STUDENT PERFORMANCE EVALUATION <i>Description of the evaluation procedure</i> <i>Language of evaluation, methods of evaluation, summative or conclusive, multiple choice questionnaires, short-answer questions, open-ended questions, problem solving, written work, essay/report, oral examination, public presentation, laboratory work, clinical examination of patient, art interpretation, other</i> <i>Specifically-defined evaluation criteria are given, and if and where they are accessible to students.</i>	I. written final exam (80%) II laboratory assignments (20%)	

(5) ATTACHED BIBLIOGRAPHY

- Suggested bibliography:

In Greek

1. *Visual Optics, Drakopoulos Panos and George Asimellis, pp 440, Syghroni Gnosi 2014*
2. *Geometrical Optics, Asimellis George, Vamvakas Ioannis, Panos Drakopoulos, pp281, Syghroni Gnosi, 2012*
3. *Visual Optical Instruments, Drakopoulos Panos and George Asimellis, pp 256, Syghroni Gnosi, 2011*
4. *Illuminating engineering, Topalis F, Oikonomou L, Kourtesi St., Tzolas Publications., pp 580, 2nd ed, 2016*
5. *Artificial Light Sources, S. Kitsinelis, S Parikou Ed., 2011*
6. *Basic principles of Chromatometry, V. Orphanakos, Stamoulis Ed., 2004*
7. *Lighting and Architecture, Kontorigas Th., Ktirio Pub., 2006*
8. *Special Installations in Illumination Engineering, Toulouglou S., Ion Publish., 2007*

English

1. *Handbook of Optics, M. Bass editor, Volumes II, III, McGraw-Hill Inc, 3rd edition, 2010*
2. *Human factors in Lighting, R. Boyce, Taylor & Francis 2003*
3. *IESNA Lighting Handbook, David DiLaura, Kevin Houser, Richard Mistrick, Gary Steffy Editors, 10th edition, 2011*
4. *Optics, Blaker J.W., P. Schaeffer, an Introduction for Technicians and Technologists, Prentice-Hall, 2000*
5. *Optics, Hecht E., Addison Wesley, 4th Edition, 2001*
6. *The manual of photography, E. Allen and S. Triantaphillidou editors, 10th edition, Focal Press, 2011*
7. *Illumination engineering, Murdoch JB, Macmillan Publishing Company, 1985*
8. *Handbook of Applied Photometry, DeCusatis Editor, 1998*
9. *The light measurement Handbook, Ryer A., International light, 1997*