



Faculté des sciences appliquées

FSA

ELEC2680 LIGHTING AND PHOTOMETRY

[15h+15h exercises] 3 credits

This course is taught in the 2nd semester

Teacher(s): Christian Eugène
Language: french
Level: 2nd cycle course

Aims

At the end of this course, the students will be able to :

- understand the phenomenon of luminous perception and the different quantities which characterize the light in relation with this perception
- measure luminous quantities from both a spectral and a global point of view
- conceive and design a lighting installation
- see our world with more pleasure because more knowledge

Content and teaching methods

Lighting is the technique of production and utilisation of visible light. Its quantitative evaluation implies an appropriate metrology which is the photometry and its corollary the colorimetry. Not only the visual perception is considered but also its energetic aspect (radiometry).

- quantities related to radiation, units, geometrical relations
- interaction between radiation and material objects
- physiologic perception of luminous radiation
- principles of photometry, radiometry, calorimetry, light analysis through spectrophotometry, physical sensors of radiation
- physics of radiation, technical characteristics of luminous sources
- lighting installation (notions).

Other information (prerequisite, evaluation (assessment methods), course materials recommended readings, ...)

- Mix between lectures, practical training in the laboratory, technical visits
- A complete syllabus is available
- Since 2000, this course is concentrated in one week, in mid March, in the frame of the international week of the European network of universities "ATHENS". An additional public of trainees coming from the professional world of lighting is each year possible. Several external speakers are invited.

Prerequisites :

Basic education in engineering

Assessment :

Report (per group) on the laboratory works (plus additional exercises). A short individual evaluation at the end of the week ATHENS (or during the exam session if this formula is not retained). Confirmation of the formula is given before the starting of the second quadrimester.

Could be given in English

Other credits in programs

ARCH22	Deuxième année du programme conduisant au grade d'ingénieur civil architecte	(3 credits)
ELEC23	Troisième année du programme conduisant au grade d'ingénieur civil électricien	(3 credits)
ELME22/M	Deuxième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(3 credits)
ELME23/E	Troisième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (énergie)	(3 credits)
ELME23/M	Troisième année du programme conduisant au grade d'ingénieur civil électro-mécanicien (mécatronique)	(3 credits)
FSA3DA	Diplôme d'études approfondies en sciences appliquées	(3 credits)
MECA23	Troisième année du programme conduisant au grade d'ingénieur civil mécanicien	(3 credits)