HS2006 Luminaire Design 15.0 credits

Ljusarmaturdesign

This is a translation of the Swedish, legally binding, course syllabus.

If the course is discontinued, students may request to be examined during the following two academic years

Establishment

Course syllabus for HS2006 valid from Autumn 2010

Grading scale

A, B, C, D, E, FX, F

Education cycle

Second cycle

Main field of study

Built Environment,Technology and Health

Specific prerequisites

Eligibility for the programme Architectural Lighting Design or the programme Architectural Lighting Design and Health.

Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

Intended learning outcomes

- Students should be able to describe the historical evolution of luminaires in relation to technological and socio-cultural aspects and analyse the state of the art.
- Students shall practice the luminaire design process from concept phase till prototype construction.
- Students must develop the design for a new luminaire and justify the design decisions in terms of the knowledge previously acquired, the connection with the year's course theme and the available technical possibilities.
- Students shall examine the manufacturing processes suitable for the mass-production of their product.

Course contents

- Theoretical basis in luminaire design: methodology and tools.
- Luminaire design history.
- Character of light sources and their fields of application.
- Lighting distribution, reflector constructions and material features, as reflection, transmission, refraction and absorption.
- Laboratory tests measurements of full-scale mock-ups.
- Technologies, materials and electrical components.
- Standards, specifications and rules for technical fixtures
- Sustainability, economy and marketing.

Disposition

Content's structure:

Design Methodology III 2 cr.

(Interaction in lighting design)

Design and Society 1,5 cr.

(History, state of the art, trends)

Technology III 1 cr.

(Lighting distribution)

Product Design 3 cr.

(Material, Industrial production, recycle)

Luminaire Design 7,5 cr.

(Prototype)

Course literature

M.Rea, Lighting Handbook, 9th ed., IESNA, NY, 2000

To be complemented during the course.

Examination

- INL1 - Assignments, 2.0 credits, grading scale: P, F
- INL2 - Assignments, 1.5 credits, grading scale: P, F
- INL3 - Assignments, 1.0 credits, grading scale: P, F
- INL4 - Assignments, 3.0 credits, grading scale: P, F
- INL5 - Assignments, 7.5 credits, grading scale: P, F

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

Project (team work, process, concept, result) and workbook (report of lectures, process and reflections). 80% attendance.

Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.