HS2009 Light and Space-Indoor 15.0 credits

Ljus och rum-inomhusbelysning

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 HS2009 valid from Autumn 2019

Grading scale

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

Education cycle

Second cycle

Main field of study

Architecture

Specific prerequisites

The eligibility as required for the programme, or the equivalent knowledge in Architecture or related field.

Language of instruction

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

Intended learning outcomes

- Students should gain the required knowledge within indoor lighting design, including the understanding of architectural qualities of indoor spaces' structures and user's needs, and the quantitive technical and regulatory requirements.
- Students shall transfer the acquired knowledge from previous courses into the indoor lighting design process.
- Students shall develop a complex lighting design project, from concept to realization, including calculation tools and framing aspects as sustainability, energy and economy. The solution must coordinate daylight conditions on site, electric lighting and control feasibilities.
- Students shall train and develop skills to work collaboratively in teams and independently reflect over their methodology and results, in order to be able to abstract them from the given context.
- Students should express a professional attitude in all the phases of the design process and train communication skills.

Course contents

- Indoor lighting design process: methodology and tools
- Theoretical basis in concept and calculation for indoor lighting
- Application of tools in a complex design process
- Full-scale tests and mock-ups
- Methods for treatment of sustainability, energy, maintenance and economical aspects
- Presentation techniques and communication skills

Disposition

Content’s structure:

Daylight Basics
(Concepts, units, tools)

Design Methodology II
(Process, calculation, rendering)

Technology II
(Luminaires, Energy, Control systems)

Room Space Theory
(Indoor Scale)

Indoor Lighting Design (project)
(Planning)

Course literature

Corrodi, Michelle. Spechtenhauser, Klaus. (2008) Illuminating – natural light in residential architecture.

Cuttle, Christopher. (2003) Lighting by design.

Cuttle, C. (2015). Lighting Design: A Perception-Based Approach, Routledge

Daylight and architecture. Velux Magazine.

DiLaura, Houser, Mistrick & Steffy. (2010) Lighting Handbook, 10th ed, IESNA.

Fontoynont, M. (1999). Daylight Performance of Buildings, Routledge

Lam, William (1992) Perception and lighting as form givers for architecture.

Lam, William (2011) Sunlighting As Formgiver for Architecture.

Plummer, Henry. (2009) The Architecture of Natural Light.

Peter Tregenza et al (2011) Daylighting: Architecture and Lighting Design.

Reinhart, C. (2014) Lighting Handbook, 10th ed, IES

Plus recommended and mandatory literature presented during the course.

Examination

- INLA - Workbook, 6.0 credits, grading scale: A, B, C, D, E, FX, F
- PROA - Project, 3.0 credits, grading scale: P, F
- PROB - Project, 6.0 credits, grading scale: A, B, C, D, E, FX, 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.

The course has three examination modules, a workbook (INLA), a daylight project (PROA) and a lighting design project (PROB).

The course evaluation is a combination of design task and workbook grades, which reflect teamwork and individual achievements.

The design task evaluation includes: Vision and Concept, Process, End result, Presentation.

The personal learning process is assessed through the workbook in relation to these critera: Completeness, Structure, Depth of reflections and Research.

Detailed description of assessment methodology is provided at the beginning of each course.

Other requirements for final grade

To receive a final grade for this course, grade E or higher on the workbook (report of lectures, process and reflections) and the lighting design project (process and seminars) is required, as well as a passing grade on the daylight project. 80 % attendance is also required.

Overall course grade is based on grading scale A-F.

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.