LUNDS UNIVERSITET
Lunds Tekniska Högskola

*Course syllabus*

# Digital designstudio
# Computational Design Studio

## ASEN25, 15 credits, A (Second Cycle)

**Valid for:** 2023/24
**Faculty:** Faculty of Engineering, LTH
**Decided by:** PLED A
**Date of Decision:** 2023-03-28

## General Information

**Main field:** Digital Architecture and Emergent Futures. **Depth of study relative to the degree requirements:** Second cycle, has only first-cycle course/s as entry requirements.
**Compulsory for:** MAEF2
**Elective for:** A4
**Language of instruction:** The course will be given in English

## Aim

The aim of the course is to develop the student's ability to use, implement, and contextualise computational thinking and tools within an architectural design process. The student will strengthen their understanding of potential relationships between "push" (i.e. technology and methods development) and "pull" (i.e. changes in societal needs and demands) as drivers for change in the design professions. They will develop their ability to act as a mediator for transdisciplinary collaborations. The student will also develop their ability to communicate their work in an international context, both visually and verbally.

## Learning outcomes

*Knowledge and understanding*
For a passing grade the student must

- demonstrate an understanding for the potential use of computational design and fabrication technologies in the realisation of a sustainable built environment

*Competences and skills*
For a passing grade the student must

- demonstrate skills in the use of computational design tools for creating architectural outcomes,
- demonstrate the ability to independently develop design strategies based on available design software and fabrication equipment,
- demonstrate advanced ability in words, drawings and pictures to communicate their project.

*Judgement and approach*
For a passing grade the student must

- demonstrate the ability to evaluate the consequences of design choices from multiple perspectives including sustainability and design quality,
- demonstrate the ability to assess the value of concepts and results in relation to a human perspective,
- demonstrate the ability to critically evaluate one's own performance during the design process.

## Contents

The course trains architectural and analytical ability through an experimental design approach, based on scientific as well as artistic thought. Advanced digital tools for design as well as fabrication are used and engaged within the course, with an emphasis on the student’s ability to control the tools to achieve specific design outcomes. The course is composed of two distinct design assignments that follow consecutively, one in each study period. The design assignments focus on implementing the computational tools taught in previous courses within a workshop format. The course includes lectures and mandatory presentations, as well as continuous tutorials and supervision in the design studio.

## Examination details

**Grading scale:** UG - (U,G) - (Fail, Pass)
**Assessment:** Approved projects and assignments, and 80% attendance at seminars and lectures. Mandatory attendance at reviews. The proposal and presentation qualities are evaluated and discussed by an evaluation team of examiner, teachers and external critics after which the examiner decides whether the project qualifies for a pass. At the grade Fail the student has the right to re-examination after completion or revision of the project. Examiner informs the student what is required to achieve a pass. The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

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**Parts**

**Code:** 0123. **Name:** Computational Design Studio I .
**Credits:** 7,5. **Grading scale:** UG. **Assessment:** To obtain a passing mark each student shall have made all submissions required; and handed in, and got approved, all projects and exercises. Mandatory attendance at reviews. In addition, the student must have an attendance of at least 80 % and achieved approved results of all workshops, lectures and scheduled exercises.

**Code:** 0223. **Name:** Computational Design Studio II.
**Credits:** 7,5. **Grading scale:** UG. **Assessment:** To obtain a passing mark each student shall have made all submissions required; and handed in, and got approved, all projects and exercises. Mandatory attendance at reviews. In addition, the student must have an attendance of at least 80 % and achieved approved results of all workshops, lectures and scheduled exercises.

## Admission

**Assumed prior knowledge:** ASEF01 Programming for Architects
**The number of participants is limited to:** No
**Selection:** Completed university credits within the program. Within programmes where the course is given as a mandatory or elective mandatory course students are guaranteed admission. Thereafter priority is given to students enrolled in programmes that include the course in the curriculum.

## Reading list

- No compulsory literature is attached to the course. The course is a skills-training design course where dialogues in the form of supervision and discussions in student groups constitute the main support for learning.

## Contact and other information

**Course coordinator:** David Andréen, david.andreen@abm.lth.se