A42D1B Digital Studio 4:1 12.0 credits

Performativ designstudio 4:1

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 A42D1B valid from Autumn 2008

Grading scale

P, F

Education cycle

Second cycle

Main field of study

Architecture

Specific prerequisites

Bachelor's Degree, or an equivalent level, within the field of Architecture.

Language of instruction

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

Intended learning outcomes

Performative Design: Substance and Surface

Introduction (common for all projects in this studio)

The Studio will actively engage the technological and affective potentials of performative design in architecture. Performance can be understood as the incorporation of contingencies or parameters (material, technical, geometric, programmatic, social and economic) that inform the design process. The generative potential of digital tools makes it possible to use parametric design as a way of evolving new information systems, new modes of fabricating, and producing building components and architecture. Contrary to a linear design approach where technological processes are applied in the interest of the optimization and resolution of a design; this studio will adopt a bi-directional approach where technological processes (in the form of parametric design and computer aided fabrication) will be incorporated as drivers of design innovation.
In order to formulate a distinction in the concept of performance that reflects its differential value in the contemporary context – both material and procedural - we will consider how technological performance coexists with affective performance, where technology is sub-sumed by the production of sensation. Immersed in an electronic paradigm that has vastly expanded in scope, moving beyond its capacity for representation to stage more profound forms of engagement, we will study the relationship between form, performance, and affect in contemporary architecture.
The studio aims at increasing the existing knowledge and enhancing skills within the field of performative design and to contribute to an increased comprehension of the discipline of architecture as a whole. The course sequence will establish new ways of thinking about design and fabrication, professional practice and its cultural impact. Upon completion of each project students are expected to have acquired knowledge and skills relevant to the context of the studio (competance in innovative architectural design strategies, competance in advanced digital modeling and fabrication, an awareness of contemporary architectural discourse); and to demonstrate an increased comprehension of the discipline of architecture as a whole.

Overall goals
1. The course is part of the Performative Design Studio.The generation of digital tools makes it possible to use parametric design as a way of evolving new information systems, new ways of producing building components and architecture.
2. The course/project goal is to increase the student's knowledge in this area/field and skills/knowledge in the field of architecture in general. The students will enter the project with varying degrees of knowledge/skills and will subsequently end up at different levels at the end of the course/project.
3. The individual student must show an increase in the particular skills/knowledge offered in the studio and in the field of architecture in general.

Course contents

Through the design of a small scale architectural project the students will acquire skills in techniques of parametric design, a rigorous understanding of advanced geometry and modeling in relation to digital fabrication and the architectural and structural aspects of design, and become acquainted with contemporary architectural discourse in close relation

to the design task. The superficial will be explored as both a technical operation, through surface modeling and CNC fabrication, and as a discussion on the relationship between substance and surface.

Disposition

The course is structured around weekly tutorials with students (2 times a week), a sequence of assignments or design tasks, a series of lectures, seminars and informal pinups. There will be two reviews with external invited jurors; Mid review and Final review. A study trip to Mexico City is planned to research the architecture of Felix Candela (structural shell design) with a possible stopover in Los Angeles to research contemporary design practices working with digital technology.

Course literature

Mark Burry, 'Between Surface and Substance,' AD Surface Consciousness (2003), 8-20.
Branko Kolarevic, Performative Architecture: Beyond Instrumentality (2005).
Sanford Kwinter, „Soft Systems," In Culture Lab (1993), ed. Brian Boigon, 207-228.
David Ruy, 'Robust Striations,' 'Excerpts,' and 'Discussions,' In Tokyo Bay Experiment Reiser + Umemoto Studio (1997), 11-19, 29-49.

Examination

- PRO1 - Project part 1, 9.0 credits, grading scale: P, F
- PRO2 - Project part 2, 3.0 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.

The course consists of two parts; a fulfilled and delivered project work (9 credits) and a passed final assessment (3 credits). There is at least one intermediate assessment during the course.

Other requirements for final grade

a) Presentation requirements
Drawings:
Plans 1:100
Sections and elevations 1:100
Analytical drawings parametric strategies, design strategies and architectural qualities
- hierarchical relationships of parametric model (process)
- graphic representation of parameters
- variations of components and complete system
- axonometric drawings showing how different systems correlate

- detailed plan of whole or part of proposal 1:20
- detailed sections and elevations 1:20
Physical Models:
Model of proposal 1:100
A series of detailed models 1:20
Images:
Showing performance qualities of your design
Showing the potential effects of your design
To hand at the latest one week after final review:
A CD with all the final material
Very well photographed physical models
Research file
A3 paper version of your presentation max 10 pages
Each semester all students must:
Have 80% attendance on all compulsory activities, including seminars and tutorials.
Attending reviews is compulsory.
If students are asked to do supplementary work after reviews to pass the course, these supplements should be handed in within a given timeframe.
Submit DESIGN task according to specifications
Submit RESEARCH task according to specifications
Participation in study trip or alternate activity

b) Examination
80% attendance. Active participation in lectures, tutorials, and seminars etc. Passed intermediate and final assessments. Compulsory attendance during the assessment reviews.
Completion: The project work shall be delivered and, if necessary, reworked within the set time limit. See general directions.
(Overall principle: Autumn term projects must be approved during the following Spring term: Spring term projects must be approved before the start of the following Autumn term. The reworked projects must be delivered at least one week before the time limit.)
The project work is to be documented in a portfolio, including drawings, analysis and models. The work process shall be legible.

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.