COURSE REPORT – Summary of course evaluation

The course report is a summary of the course evaluation. The course evaluation takes into account the students' course evaluations, the study administration's views, the teachers' views, and the course outcome - ie the students' actual results, course completion, and conditions for course implementation such as teaching and supervision time, premises and support functions. The course report also contains an analysis and development/action plan for the course.

The course report forms the basis for feedback to students and follow-up in quality dialogues both in the education-centered and in the university-wide quality work.

Background information (To be completed by the course administrator)

Course LADOK code: BY245E	**Scope (hp): 7,5 hp**
Course title: Built Environment: Digital Construction/Fabrication in Architecture and Urban Design	
Course coordinator: Per-Kristian Hansson	**Number of registered students: 42**
Semester in which the course is conducted: Spring Term 2026	
Is the course an independent course, programme course or contract course? If the course has been completed within a programme, enter the programme name. TGHAU24h	

Administration's perspective (To be completed by the course administrator)

The administration's views:

Forms of evaluation and feedback (To be completed by the course coordinator)

Formative course evaluation: (Describe the form of course evaluation and when it was completed) Formative course evaluation during tutoring as a support for students during their group-work. In full class, following presentations and milestones during the course.	**Number of students who participated in the course evaluation:** All student groups (more or less) actively participated in the formulative course evaluation. Both in an ad hoc and semi-structured manner.
Summative course evaluation: (Describe the form of course evaluation and when it was completed) A course evaluation was taking place following the end of a public course exhibition. Students were informed to participate after the deconstruction of the exhibition.	**Number of students who participated in the course evaluation:** Roughly 15 students participated in the summative and open forum course evaluation.
Feedback to students: (Describe how and when the feedback will be given to the current student group) Feedback was given during tutoring in groups and during the course evaluation. After the students were given the opportunity to evaluate and comment on the course content, expectations, overall	

quality, effectiveness, and whether learning goals were met, we (the teachers) gave our response as feedback in an open forum format.

Student's perspective (To be completed by the course coordinator)

Summary of the students' course evaluations: (The five university-wide questions should be included. Compilation from digital questionnaires can be appended.)

(I vilken utsträckning anser du dig ha uppnått kursens lärandemål?)
To what extent do you think you have achieved the (above listed) learning objectives of the course?

A mean response 4,3 (scale 1-6), correlate with the open forum evaluation. The learning outcomes is somewhat unclear to the students and would benefit to be revised together with the course syllabus to better describes the course.

(I vilken utsträckning anser du att kursens arbetsformer/ läraktiviteter har varit ett stöd i ditt lärande för att kunna uppnå lärandemålen?)
To what extent do you think that the working methods / learning activities on the course have reinforced your learning and your ability to achieve the learning objectives?

A low mean response 3,9 (scale 1-6), correlate with the open forum evaluation. The course, as it is, asks a lot of the students with very limited practice in CAD/CAM – moving on to robotics and digital fabrication. The course should support the students at beginner level.

(I vilken utsträckning anser du att kursens examinationsformer gett dig möjlighet att visa hur väl du uppnått lärandemålen?)
To what extent do you think that the methods and forms of assessment (tests etc.) give you the possibility to demonstrate that you have achieved the learning objectives?

A mean response 4,4 (scale 1-6), correlate with the open forum evaluation. More clarity about the forms of examination, from the beginning of the course. Students ask to be divided in smaller groups of max 4/group and expect the examination and grades to better correspond to individual performance.

(I vilken utsträckning anser du att kursen som helhet har uppfyllt dina förväntningar?)
To what extent do you think that the course in its entirety has fulfilled your expectations?

A low mean response 3,9 (scale 1-6), correlate with the open forum evaluation. Students express a general unfamiliarity with the field of robotics and digital fabrication. Showing in both expectations and progress of the course, and in the learning outcome. Student expectations a very varied as is

(I vilken utsträckning har kursen gett dig möjlighet att ta ansvar för eget lärande?)
To what extent do you think that the course has given you possibilities to take responsibility for your own learning?

A high mean response 5,0 (scale 1-6), correlate with the open forum evaluation. One of the courses strengths is that we ask of students to take on the responsibility for their own learning, by practicing, prototyping, and solving the assignments together. The assessment is based on the learning-process itself, how you develop architectural design and concepts from prototyping with physical materials and digital CAD/CAM tools, and students' ability to assess and evaluate their results. For most of the students, this is a new method of architectural inquiry and learning.

Teacher's perspective (To be completed by the course coordinator)

Summary of the teacher's views/Results: (The comments on the course's implementation and the results based on an assessment of the students' actual learning outcomes in relation to the

intended learning outcomes, are summarised here. Both success factors and problems are identified).

The course asks a lot of the students with essentially no practices of CAD/CAM, at best beginner level – moving on to robotics and digital fabrication. Some students are very ambitious and are quick learners, while others are not putting in the efforts that we want to see. The ability of the students to learn and to commit to the course assignments are very variable. Making group-work essentially difficult and problematic for students individual learning. A general feeling is that we should avoid having the student collaborate in too big groups, and to run presentations and milestone exercises in half-class. Average 40 student class is too big for group presentations with peer student involvement. A maximum of 2-4 students/group could be advisable. Further, the division of the class in two would expose each student for better learning opportunities from pin-ups and big group tutorials.

Students express a general unfamiliarity within the field of robotics and digital fabrication. Shown in both expectations and results of the learning outcome. Clarity about the methods and forms of assessment from the very beginning of the course is advisable. The focus of the course is unclear as we do not engage with robotics as a technology in hands-on prototyping. The course focus is rather *Prototyping in Architecture*, using the technologies, machinery, and tools available at the university workshops and labs.

Hands-on and applied methodology works well and readies the students for their individual bachelor's project. One of the courses strengths is that we ask of students to take on the responsibility for their own learning, by practicing prototyping and solving the assignments by informed choices in digital-physical probing across scales and technologies.

The assessment form is on the learning process itself, how students develop architectural design and concepts from prototyping: using specific materials and digital CAD/CAM tools, and to their ability assess and evaluate their outcomes in iterative prototyping. Hand-ins of group and individual work is the base for assessment. An update in course literature is needed to better support the students learning of methods in architectural prototyping, as well as materials and fabrication strategies.

We suggest revising the syllabus to better fit the available technology in the workshops, (and labs), and a shift of focus towards working with materials and prototyping in architecture at the urban scale. We are teaching prototyping as a methodology of architectural and urban inquiry, framing the course around strategies such as re-use, transformation, (pre)fabrication, disassembly, hybrid construction systems, and materials. While critically assess outcomes of the applied technologies and how they come into play (both engineered materials and machine technologies).

Analysis and action plan **(To be completed by the course coordinator)**

Analysis: (The course coordinator is responsible for ensuring that the analysis is based on a summary of the students' individual course evaluations, views from relevant teachers and course administrators, knowledge development in the field of research and that this analysis is done in collaboration with the teaching team.)

The course asks a lot of the students with essentially no practice in CAD/CAM – to enter robotics and digital fabrication. The working methods could be better adapted to the students' abilities through a revised course syllabus and a focused order of program courses that build students experience in CAD, preceding this course methods of digital-physical prototyping in CAD/CAM.

Points of improvement:

Clarity about the presentation/pin-up and hand-in examination form. How we assess the students work, (from the beginning of the course).

Convey the learning process itself; how to develop architectural inquiry at urban scale from prototyping, using materials and digital CAD/CAM tools. Emphasize methods for the students to assess and evaluate their outcomes.

Students wish for more points of reference in research and in industry (from lectures, factory and site visits).

Course assignments relating to the extended research field of Urban Studies.

Provide supplementary reading to support the students conceptual and applied learning with methods and forms of assessment in digital-physical probing.

Students divided in smaller groups of max 4/group. Divide in half-class for pin-ups and presentations.

Frame the course assignments around strategies such as transformation, (pre)fabrication, disassembly, hybrid construction systems, and materials re-use at the urban scale. Connect these strategies to methods of probing with materials and machine technologies in digital-physical modes of architectural inquiry.

Learning outcome: Architectural inquiry from digital-physical prototyping, and assessment of materials strategies in urban architectural construction.

Action plan: (The changes planned to be made in the short and long term are stated here, as well as the timetable for when the actions are planned be carried out and who is responsible for the implementation. If identified problems are left without action, this should be justified. The follow-up of proposed measures according to the previous course report(s) is presented here.)

To improve the course, (two years as course coordinator), we (the teachers) suggest amending the course syllabus together with the course learning outcomes:

A shift of focus to: *Prototyping in Architecture*, using the technologies, machinery, and tools available at the university workshops and labs. Technologies that better fit the students' abilities. The teachers (Per-Kristian H. and Petter W.) is preparing the coming course programme (spring 2027) and will suggest amendments to the syllabus in this academic year (2026/2027), to be implemented at the earliest the following academic year (2027/2028).

At the same time, a review of the order of courses could benefit the course: Courses that build students practice and experience in CAD could precede this course that build more technical skills in CAD/CAM and digital-physical prototyping. Parts of the 1st semester course (BY217H) *Byggd miljö: Klimatneutralt byggande och digitala verktyg* (15 hp) could for example be connected to this 4th semester course, in terms of learning outcomes and perhaps timeline.

Publishing and archiving **(To be handled by the course administrator)**

The course report is published and archived according to the university's instructions.
The students are informed about the publication.
The course report is shared with the programme coordinator (if applicable) and saved according to any additional requests on behalf of the department.