



## COURSE SYLLABUS

# Implementation of Digital Technologies and the Construction Industry, 6 credits

*Implementation of Digital Technologies and the Construction Industry, 6 högskolepoäng*

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<b>Course Code:</b> TIDR28	<b>Education Cycle:</b> Second-cycle level
<b>Confirmed by:</b> Dean Feb 1, 2017	<b>Disciplinary domain:</b> Technology (95%) and social sciences (5%)
<b>Revised by:</b> Director of Education Oct 27, 2021	<b>Subject group:</b> TE9
<b>Valid From:</b> Jan 1, 2022	<b>Specialised in:</b> A1N
<b>Version:</b> 2	<b>Main field of study:</b> Product Development

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### Intended Learning Outcomes (ILO)

After a successful course, the student shall

Knowledge and understanding

- display knowledge of major approaches to socio-technical systems and technology-related organizational change processes

Skills and abilities

- demonstrate the ability to analyze and explain the basic foundations of major approaches to technology-related organizational change processes
- demonstrate the ability to analyze and explain the blurred boundaries between the technology and the social when designing and implementing digital technologies
- demonstrate the ability to analyze how the characteristics of the building and construction industry shapes implementation of digital technologies

Judgement and approach

- demonstrate the ability to recognize barriers and drivers in a technology-related organizational change processes and evaluate the implications for implementation strategies

### Contents

The course takes its point of departure in viewing a production systems as intertwined network of technology, people and organization that would turn identified customer needs for products and associated services into reality. In order to facilitate this process, digital technologies has come to play an ever increasing role during the last decades. However, technology-related organizational change and development processes are seldom as straight forward as described by advocates for new technologies. Thus, in order to gain an enhanced understanding of implementation of digital technologies and the Construction Industry.

The course includes the following elements:

- Socio-technical research in new technology and information systems in architecture, engineering and construction;
- Introduction to alternative approaches to understanding socio-technical systems, such as; technological determinism, innovation studies, multi-level perspective, institution theory, social constructivism, actor-network theory, critical/political perspectives
- Industry analysis and analysis of underlying structures shaping the building and construction industry.

### **Type of instruction**

Lectures, exercises and assignments/project work.

The teaching is conducted in English.

### **Prerequisites**

The applicant must hold the minimum of a bachelor's degree (i.e the equivalent of 180 ECTS credits at an accredited university) with at least 90 credits in construction engineering or civil engineering, or equivalent. The bachelor's degree should comprise a minimum of 15 credits in mathematics. Proof of English proficiency is required.

### **Examination and grades**

The course is graded 5,4,3 or Fail.

Registration of examination:

Name of the Test	Value	Grading
Examination <sup>1</sup>	3 credits	5/4/3/U
Assignments/Project work	3 credits	U/G

<sup>1</sup> Determines the final grade of the course, which is issued only when all course units have been passed.

### **Course literature**

The literature list for the course will be provided 8 weeks before the course starts.

Scientific articles