AALBORG UNIVERSITET

# STUDIEORDNING FOR KANDIDATUDDANNELSEN I BÆREDYGTIGT DESIGN, 2022, KØBENHAVN

CIVILINGENIØR
KØBENHAVN

MODULER SOM INDGÅR I STUDIEORDNINGEN

# INDHOLDSFORTEGNELSE

Staging Collaborative Design for Sustainability 2025/2026 ..... 3
Design in Organisations 2025/2026 ..... 5
Production Systems and Sustainability 2025/2026 ..... 7
Design for Sustainability 2025/2026 ..... 9
Design for Sustainable Transitions 2025/2026 ..... 11
Market Creation and Entrepreneurship 2025/2026 ..... 13
Sustainable Transitions 2025/2026 ..... 15
Concept Driven Change 2025/2026 ..... 17
Design Research Project 2025/2026 ..... 19
Project-Oriented Study in an External Organisation 2025/2026 ..... 21
International Design Project 2025/2026 ..... 23
Entrepreneurship Design Project 2025/2026 ..... 25
Master's Thesis 2025/2026 ..... 27

# STAGING COLLABORATIVE DESIGN FOR SUSTAINABILITY

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge of the complexities and interrelations between product, service and system developments and strategies for how to change them
- has knowledge and understanding of existing design methods and tools, their limitations, and how to experiment with improvements
- has knowledge of how to stage of collaborative design processes

#### SKILLS

- can carry out a theoretically informed empirical analysis of sustainable challenges related to current design and innovation of products, services and systems
- can conceptualise ideas and design solutions oriented to create and support changes towards sustainability
- can co-design a design solution and a reconfigured sociotechnical network of relations
- has the ability to identify and apply the relevant technical knowledge necessary to understand the design problem and possible solutions
- can professionally pitch a business idea based on a design solution

#### COMPETENCES

- can give a reflected criticism of existing design knowledge and methods and suggest relevant design approaches
- can clearly present and communicate the content and outcome of the project academically and demonstrate the practical implications to collaborative partners in the field
- has ability to conceptualise design solutions across disciplinary boundaries and sectors based on theoretically informed empirical analysis
- Can reflect on the limitations of considering engineers, designers and other experts as providers of purely technical expertise (PBL)
- Can reflect on his/her own ability to operate and contribute to teamwork in an intercultural context (PBL)

### TYPE OF INSTRUCTION

Project is carried out in teams and planned in cooperation with an external partner. The project offers instructions in engineering design methods, staging of participatory design and qualitative interviews.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Staging Collaborative Design for Sustainability |
| Type of exam | Oral exam based on a project |
| ECTS | 15 |
| Permitted aids | |

| | |
|---|---|
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Iscenesættelse af co-design for bæredygtighed |
| Module code | TBSDK20101 |
| Module type | Project |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 15 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# DESIGN IN ORGANISATIONS

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge about current international research on theories and methods for organising and staging design and innovation processes in organisations
- has knowledge about current international research on theories and methods for product, service and systems development
- can recognise and use processes, methods and situations related to product, service and systems development, and critically reflect on their value

#### SKILLS

- can understand and analyse ways of organising and staging knowledge work in product, service and systems development
- can assess and critically reflect upon own basic socio-political assumptions and roles, and explain the significance in and for the involvement of different types of players in design processes
- is able to understand the role of social systems, infrastructures and political concerns, and analyse drivers and constraints imposed on design and innovation processes in organisations
- is able to understand the role of knowledge sharing, knowledge management and learning in product, service and systems development
- can identify and use intermediaries and boundary objects in the staging and navigation of disciplinary dialogues and innovation processes
- can define research topics and questions, and analyse case studies with literature

#### COMPETENCES

- can independently organise design and development projects in organisations, and stage and navigate the organisations' social systems and political concerns

### TYPE OF INSTRUCTION

Lectures, exercises and project work

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Design in Organisations |
| Type of exam | Written or oral exam<br>Will be specified in the semester description. |
| ECTS | 5 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |

| | |
|---|---|
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Design i organisationer |
| Module code | TBSDK20102 |
| Module type | Course |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 5 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Per Richard Hansen |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# PRODUCTION SYSTEMS AND SUSTAINABILITY

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge about current systems of manufacturing and production of products, services and systems
- has knowledge about the challenges that companies face when attempting to improve their production systems for sustainability
- has knowledge about the potentials of IT systems to support or interfere with achieving sustainability

#### SKILLS

- can analyze potentials and barriers for designing products that last longer, that are reparable and/or that are designed for disassembly from a production system point of view
- can analyze which implications changes in materials or redesigns might cause to current production and logistic systems
- can analyze how to incorporate IT systems to support sustainable solutions
- can model a given product in a digital program
- can simulate physical conditions like stress on a given component digitally

#### COMPETENCES

- can evaluate the sustainability potential of a given manufacturing and production system
- can evaluate the role of IT systems in sustainable solutions
- can design manufacturing and production systems that are sustainable

### TYPE OF INSTRUCTION

Lectures, exercises and project work

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Production Systems and Sustainability |
| Type of exam | Written or oral exam<br>Will be specified in the semester description. |
| ECTS | 5 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Produktionssystemer og bæredygtighed |
| Module code | TBSD22103 |
| Module type | Course |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 5 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# DESIGN FOR SUSTAINABILITY

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has an understanding of the global sustainability challenges and institutional factors influencing the development of design for  circular economy and other sustainability approaches
- has an understanding of environmental, economic, and social aspects of product and service system design
- has an understanding of the merits and limitations of key tools used to assess and improve the sustainability of product and service system design

#### SKILLS

- has the ability to collaborate with others in identifying and analyzing sustainability challenges embedded in existing production and consumption patterns
- has the ability to identify and compare environmental aspects and impacts of different products/product systems
- has the ability to apply different circular economy indicators with the purpose of developing different design strategies for promoting a circular economy
- is able to conduct a design project which supports sustainable solutions and contributes to innovation and transitions and where digital elements might play a central role

#### COMPETENCES

- can  map and critically interpret data in analyzing environmental aspects and impacts of products and product systems
- can develop design suggestions for how to improve products, services and systems development for a circular economy or other sustainability approaches, including the trade-offs encountered in the design process
- can effectively communicate the results from different methods documenting the sustainability of products, services and system design

### TYPE OF INSTRUCTION

Reading and analysing texts, lectures and cases.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Design for Sustainability |
| Type of exam | Written or oral exam<br>Will be specified in the semester description. |
| ECTS | 5 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Design for bæredygtighed |
| Module code | TBSD22104 |
| Module type | Course |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 5 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# DESIGN FOR SUSTAINABLE TRANSITIONS

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge about different design strategies to tackle sustainable transition challenges
- can understand challenges concerned with ill-defined problems and working with complex problems both on a general level and at local levels that require systemic transformations

#### SKILLS

- can identify, characterise, and analyse a subject matter as the focus for the design process
- can apply different design strategies as a response to a wicked problem
- can develop or redesign sustainable business models in order to support novel systemic solutions
- can involve interested parties in companies, governmental bodies and /or from civil society in a design process
- can use material objects to visualise and communicate project developments and findings or to facilitate dialogue

#### COMPETENCES

- can reflect upon viable design strategies as a response to wicked and ill-defined problems and develop strategies to support sustainable transitions processes through a design-oriented approach
- can reflect upon viable ways of engaging and enrolling actors from a diversity of disciplines, institutional and business domains as part of design strategies
- can reflect on the role of sustainable design engineers as experts with the capacity to facilitate cross disciplinary, sociotechnical, participatory knowledge development and not only narrow technical expertise (PBL)
- Can reflect on his/her own ability to operate and contribute to teamwork in an intercultural context (PBL)

### TYPE OF INSTRUCTION

Project assignment, carried out in groups of 4-5 students. The project should be planned in cooperation with a company, an institution or an interest group. Instructions on sustainable business models and project management will support the project work.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Design for Sustainable Transitions |
| Type of exam | Oral exam based on a project |
| ECTS | 15 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | External examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Design for bæredygtig omstilling |
| Module code | TBSDK20201 |
| Module type | Project |
| Duration | 1 semester |
| Semester | Spring |
| ECTS | 15 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# MARKET CREATION AND ENTREPRENEURSHIP

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- can combine knowledge about sustainable innovation and design of 'things and objects' with knowledge about the market where things may be sold and consumed
- has knowledge of how markets can be constructed to incorporate 'more sustainable things and practices' and be part of solving the environmental challenges
- can explain fundamental concepts of neo-classical economics, the role of externalities and the associated view of markets as natural and pre-existing
- can explain fundamental concepts of from economic sociology on markets as constructions comprising market specific instituted arrangements that constitute legitimate goods, economic actors, and those involved in making or challenging market arrangements

#### SKILLS

- can assess the competitive situation of a product, a service or a system
- can describe the life of a product, service or system on the market and map out the processes it becomes part of
- can discuss how product, service and system design plays into the enactment of markets
- can assess how goods are valuated with prices and list of other qualities
- can discuss how consumers become able to calculate, compare and make judgments about goods
- can discuss and work out strategies for how different actors can shape rules, standards and regulations that become part of framing market arrangements for products

#### COMPETENCES

- can independently take part in discussions and reflections on how markets arrangements can facilitate more sustainable goods and market practices

### TYPE OF INSTRUCTION

Reading and analysing texts, lectures, case-work, field study as well as group discussions

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Market Creation and Entrepreneurship |
| Type of exam | Written or oral exam<br>Will be specified in the semester description. |
| ECTS | 5 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Markedsskabelse og entreprenørskab |
| Module code | TBSDK20202 |
| Module type | Course |
| Duration | 1 semester |
| Semester | Spring |
| ECTS | 5 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# SUSTAINABLE TRANSITIONS

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- can describe transition theories based on the latest international research within the area
- can present the sustainability challenges faced by modern societies and how they are linked to processes which are embedded in existing social structures
- can recognise, analyse and apply different perspectives within transition research e.g. Strategic Niche Management perspective, Socio-technical regimes, Multi-Level Perspective, Sustainable governance strategies, Practice oriented transition, Arenas as situated mappings, Transition Management

#### SKILLS

- can discuss the sustainability challenges of modern societies
- can discuss strategies for sustainable transition and argue for different strategies to tackle the challenges
- is able to create and disseminate knowledge about sustainable transitions through a public blog

#### COMPETENCES

- can evaluate and discuss the limitations of sustainable transition theories

### TYPE OF INSTRUCTION

Types of instruction are listed in §17; Structure and Contents of the Programme.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Sustainable Transitions |
| Type of exam | Written or oral exam<br>Will be specified in the semester description. |
| ECTS | 5 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Bæredygtig omstilling |
| Module code | TBSD22203 |

| | |
|---|---|
| Module type | Course |
| Duration | 1 semester |
| Semester | Spring |
| ECTS | 5 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# CONCEPT DRIVEN CHANGE

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- can identify important ideas and approaches in a number of historic and current management, innovation, design and change concepts, and reflect on these
- is able to identify and characterise concepts in organisations and society as a naturally occurring and integrated part of management, innovation, design and change processes
- can understand and analyse concepts from structural, symbolic, pragmatic and translational perspectives, and develop suggestions to how to adapt and adopt them into practical arrangements

#### SKILLS

- can analyse implicit problem diagnoses, solution spaces, suggestions for implementation and related elements of operation in current management, innovation, design and change concepts
- is able to characterise the role and performance of innovation, design and change concepts in the management of organisational processes
- is able to assess the effects of current management, innovation, design and change concepts on organisational and institutional knowledge flows, and their ability to create change
- can analyse, identify, translate and suggest implementations of particular management, innovation, design and change concepts in organisations and institutions, as well as evaluate the vulnerability of them and suggest improvements

#### COMPETENCES

- can professionally engage in the planning and execution of concept driven processes of management, innovation design and change, and independently take part in collaborating with other organisational and institutional stakeholders
- can critically reflect on own role in the work and the applicability of own competences

### TYPE OF INSTRUCTION

Reading and analysing texts, lectures, case-work, field study as well as group discussions.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Concept Driven Change |
| Type of exam | Written or oral exam |
| ECTS | 5 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Konceptdrevet forandring |
| Module code | TBSDK20204 |
| Module type | Course |
| Duration | 1 semester |
| Semester | Spring |
| ECTS | 5 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Per Richard Hansen |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# DESIGN RESEARCH PROJECT

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge on how to set project goals and manage a design research project
- has knowledge of how to interact and relate with other actors within the design research project
- has knowledge on the recent research literature related to the specific research project

#### SKILLS

- can formulate a research aim
- can collect empirical material, analyse this and synthesise ideas and concepts in relation to a specific design research project
- can articulate goals, define tasks and coordinate tasks in project work
- can plan and stage the work based on the scope, the complexity and the required results
- can understand the practical, complex execution of design research processes
- can deliver and communicate a thorough design solution
- can evaluate the vulnerability of a design solution

#### COMPETENCES

- can independently take part in collaboration with other researchers and actors and define own role in the work
- can give a reflected criticism of others design work and results
- can critically reflect over his/her own competencies as an integrative sustainable design engineer (PBL)
- can critically reflect on design as an iterative process that involves the integration of different kinds of knowledges and professional contributions (PBL)

### TYPE OF INSTRUCTION

Project work with supervision.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Design Research Project |
| Type of exam | Oral exam based on a project |
| ECTS | 30 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Design projekt |
| Module code | TBSDK20301 |
| Module type | Project |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 30 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# PROJECT-ORIENTED STUDY IN AN EXTERNAL ORGANISATION

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge on how to contribute in an organisation to set project goals, and work as part of a design team
- is able to identify and characterise systems, procedures and concepts as an integrated part of organisational project work

#### SKILLS

- is able to characterise the role of systems, procedures and concepts in the staging of project work
- can articulate problems and goals, and define and coordinate tasks for a design project work, and understand the principles for project definitions
- is able to assess the effects of various procedures and concepts on knowledge flows and their ability to create systems, innovation and change
- is able to analyse the use of procedures and concepts in practice and suggest improvements

#### COMPETENCES

- can professionally and independently take part in collaborating with other stakeholders in design, and define own role in this work
- can give a reflected criticism of own experiences, and on others design work and results, and the applicability of own competences in certain contexts
- can critically reflect over his/her own competencies as an integrative sustainable design engineer (PBL)
- can critically reflect on design as an iterative process that involves the integration of different kinds of knowledges and professional contributions (PBL)

### TYPE OF INSTRUCTION

Class instructions and supervision throughout the whole project period.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Project-Oriented Study in an External Organisation |
| Type of exam | Oral exam based on a project |
| ECTS | 30 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Projektorienteret forløb i en virksomhed |
| Module code | TBSDK20302 |
| Module type | Project |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 30 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# INTERNATIONAL DESIGN PROJECT

# 2025/2026

## RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The module adds to the knowledge obtained in 'Staging Participatory Design'.

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge on how to set project goals, manage and stage an international design project in a multicultural environment
- has knowledge about personal responsibilities and risks for engaging in engineering work in multicultural environments

#### SKILLS

- can formulate a purpose for an international design project
- can identify the technical knowledge needed for a project, master it, and apply it to the project
- can navigate in complexities of different structures of power to develop a project
- can navigate the complex arrangement of NGOs, government institutions, and companies in the intervening country to arrange the necessary resources for the development of a design project
- can stage a participatory design project based on involving a variety of actors
- can synthesise ideas and concepts based on interactions with actors
- can balance off viewpoints and create a harmonic unity in a multi-cultural team
- can understand the practical, complex execution of international design processes and own role within these processes
- can deliver and communicate a thorough design solution
- can evaluate the vulnerability of concepts

#### COMPETENCES

- can independently engage and take responsibility in engineering work in multicultural environments
- can independently establish and conduct a working relationship with people from different cultures
- can reflect critically on the role of engineers in the context of globalization and with relation to sustainability
- can critically reflect over his/her own competencies as an integrative sustainable design engineer (PBL)
- can critically reflect on design as an iterative process that involves the integration of different kinds of knowledges and professional contributions (PBL)

### TYPE OF INSTRUCTION

Seminars and project work with supervision.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | International Design Project |
| Type of exam | Oral exam based on a project |
| ECTS | 30 |

| | |
|---|---|
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Internationalt design projekt |
| Module code | TBSDK20303 |
| Module type | Project |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 30 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# ENTREPRENEURSHIP DESIGN PROJECT

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge on how to set project goals, manage and mature an entrepreneurial business model through an incubator program
- has knowledge about personal responsibilities and risks for engaging in entrepreneurial initiatives aimed at creating sustainable products, services and/or systems

#### SKILLS

- is able to characterize the role of systems, procedures and concepts in the development of an entrepreneurial business model
- can develop and mature a conceptual business idea through tools, theories and approaches learned in the Sustainable Design programme
- can independently formulate and delimit how this entrepreneurship project can best be exploited as part of a start-up process
- can identify and reflect about the technical knowledge needed for the conceptual idea for the business model to work
- can navigate the complex arrangement of organisations relevant for development of an appropriate business model, including the start-up program as an organization
- can apply design methods to test and prototype conceptual ideas in order to better understand market and business conditions
- can evaluate the vulnerability of entrepreneurial concepts and business models

#### COMPETENCES

- can professionally and independently engage with relevant stakeholders as part of the development of a business model
- can critically reflect over the tensions between academic and professional start-up requirements, including the lessons learned in having to integrate the two
- can reflect critically on the role of design engineers in the context of creating enterprises that have a positive global impact on sustainability
- can critically reflect on the challenges and opportunities for creating entrepreneurial initiatives for sustainable design engineering

### TYPE OF INSTRUCTION

Project work with supervision.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Entrepreneurship Design Project |
| Type of exam | Oral exam based on a project |
| ECTS | 30 |

| | |
|---|---|
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | Internal examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Designprojekt i entreprenørskab |
| Module code | TBSDK22304 |
| Module type | Project |
| Duration | 1 semester |
| Semester | Autumn |
| ECTS | 30 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |

# MASTER'S THESIS

# 2025/2026

## CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

A student who has completed this module:

### LEARNING OBJECTIVES

#### KNOWLEDGE

- has knowledge about and understanding of the latest international research in the fields of sustainability, design, innovation and/or sustainable transitions
- has knowledge about how to critically assess knowledge and identify problems with regards to sustainability, design, innovation and/or sustainable transitions, within a chosen subject

#### SKILLS

- can frame a design assignment or a sustainability challenge using professional tools and methods
- can motivate choices of methods or/and theoretical approach behind the design project
- can select appropriate research-based knowledge for use in the design process and has awareness regarding their value and limitations
- can argue for a solution with regards to its business potential and its market creation value
- can stage design and innovation processes
- can communicate and visualize design and design proposals in a professional manner

#### COMPETENCES

- is able to present the results of the project work in a project report and during an oral examination and argue for the approach taken, the decisions taken and the results
- is able independently to manage a project from start to finish and reflect on the processes, theories, methods and tools used
- can critically reflect over his/her own competencies as an integrative sustainable design engineer (PBL)

### TYPE OF INSTRUCTION

Project work with supervision, supporting seminars and milestones.

## EXAM

### EXAMS

| | |
|---|---|
| Name of exam | Master's Thesis |
| Type of exam | Master's thesis/final project |
| ECTS | 30 |
| Permitted aids | |
| Assessment | 7-point grading scale |
| Type of grading | External examination |
| Criteria of assessment | The criteria of assessment are stated in the Examination Policies and Procedures |

## FACTS ABOUT THE MODULE

| | |
|---|---|
| Danish title | Kandidatspeciale |
| Module code | TBSDK20401 |
| Module type | Project |
| Duration | 1 semester |
| Semester | Spring |
| ECTS | 30 |
| Language of instruction | English |
| Empty-place Scheme | Yes |
| Location of the lecture | Campus Copenhagen |
| Responsible for the module | Andres Felipe Valderrama Pineda |

## ORGANISATION

| | |
|---|---|
| Education owner | Master of Science (MSc) in Engineering (Sustainable Design) |
| Study Board | Study Board of Techno-Anthropology and Sustainable Design |
| Department | Department of Sustainability and Planning |
| Faculty | The Technical Faculty of IT and Design |