AALBORG UNIVERSITET

CURRICULUM FOR THE MASTER'S PROGRAMME IN ARCHITECTURE CAND.POLYT. 2019

CIVILINGENIØR
AALBORG

MODULER SOM INDGÅR I STUDIEORDNINGEN

INDHOLDSFORTEGNELSE

ZERO ENERGY BUILDINGS

2019/2020

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the course is to enable students in a professional way to develop and document Zero Energy Buildings using both passive and active energy technologies.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of the political strategy at national as well as international level for saving energy in the building sector
- Must have knowledge of energy optimisation of existing buildings
- Must have knowledge of intelligent and dynamic climate shields
- Must have knowledge of active energy technologies

SKILLS

- Must be able to apply indoor environmental systems and technologies
- Must be able to analyse, simulate and apply passive energy technologies in buildings
- Must be able to simulate and analyse the dynamic behavior of a building regarding indoor environment and energy use taking all relevant parameters into account
- Must be able to apply advanced mathematical models to the analysis of passive energy technologies and the interplay between building design, building use and outdoor climate

COMPETENCES

- Can discuss and reflect on the influence of the chosen indoor environmental level on the buildings total energy use
- Can use a professional and interdisciplinary approach to the design of zero energy building
- Can use a professional and interdisciplinary approach to energy optimisation of existing buildings
- Can choose proper modeling of single zone and multi-zone buildings and discuss inherent model limitations

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Zero Energy Buildings
Type of exam	Written or oral exam
ECTS	5
Permitted aids	Without 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	Energineutralt byggeri
Module code	AODAPM1K17V1
Module type	Course
Duration	1 semester
Semester	Autumn
ECTS	5
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

INTEGRATED DESIGN OF SUSTAINABLE AND TECTONIC ARCHITECTURE

2019/2020

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the course is to enable the students to acquire knowledge of technical, functional and aesthetic aspects of and approaches to sustainable architecture, to acquire knowledge of integrated design concepts and to become skilled in analysing and comparing such approaches and concepts with regard to user needs.

LEARNING OBJECTIVES

KNOWLEDGE

Knowledge

- Must have knowledge of different approaches to sustainable architecture
- Must have knowledge of different low-energy and zero-energy concepts and the importance of user-related behavior
- Must have knowledge of sustainable site planning and infrastructure
- Must have knowledge about architecture in relation to site, climate and materials

SKILLS

- Must be able to use the terminology in the field of sustainable architecture
- Must be able to analyse and reflect upon the integration of climatic, technical, spatial, social, functional, aesthetic and logistic needs of a specific client and/or user group
- Must be able to analyse and evaluate different strategies to design sustainable architecture and zero-energy buildings
- Must be able to evaluate buildings by using assessment and certification methods for high performance buildings

COMPETENCES

- Can evaluate different approaches to zero-energy concepts
- Can analyse a building concept with regard to architectural qualities and the technical performance of the building and users needs
- Can evaluate different concepts with regard to their qualities in relation to the people who live or work in the buildings
- Can evaluate methodologies of building certification methods

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Integrated Design of Sustainable and Tectonic Architecture
Type of exam	Written or oral exam
ECTS	5
Permitted aids	Without 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	Integreret design af bæredygtig og tektonisk arkitektur
Module code	AODAPM1K192
Module type	Course
Duration	1 semester
Semester	Autumn
ECTS	5
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

SUSTAINABLE ARCHITECTURE

2019/2020

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of this project is to develop preliminary building design for a zero-energy building using advanced integrated design process methodology. Technical, spatial, social, functional, logistical as well as aesthetic problems must be solved in the integrated building design.

Students who complete the module:

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of advanced integrated design
- Must have knowledge of different strategies in the field of sustainable architecture
- Must have knowledge of passive energy technologies in relation to indoor environment

SKILLS

- Must be able to elaborate the building design through the advanced use of the integrated design process
- Must be able to integrate technical solutions in relation to energy and climate with respect to the performance of the building
- Must be able to evaluate the technical solutions for the building
- Must be able to choose, implement and combine strategies for the use of passive as well as active energy technologies
- Must be able to model and design zero-energy buildings with sustainable architectural qualities
- Must be able to devise solutions which include social, technical and environmental aspects
- Must be able to identify and target their design to the defined user group and their demands and well-being in the building

COMPETENCES

- Can develop an integrated building proposal that fulfills all predefined architectural, functional and technical design criteria and target values
- Can communicate proper terminology in oral, written and graphical communication and documentation of problems and solutions in the integrated design of buildings and building services
- Can discuss and reflect on potentials and limitations in integrated building energy design

TYPE OF INSTRUCTION

See general description of the types of instruction described in the introduction to Chapter 3.

EXAM

EXAMS

Name of exam	Sustainable Architecture
Type of exam	Oral exam based on a project
ECTS	20
Permitted aids	Without 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 arkitektur
Module code	AODAPM1P17V3
Module type	Project
Duration	1 semester
Semester	Autumn
ECTS	20
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

PERFORMANCE-AIDED DESIGN: FORM, MATERIAL, STRUCTURE, ACOUSTICS AND FABRICATION

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The module adds to knowledge obtained in 1. semester of the Master's programme in Architecture

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the course is to enable students with the parametric design tools and the understanding required to develop integrated design with respect to form, material, structure and fabrication. Parametric design tools support the definition of advanced geometry, and the interaction between geometry and structural and/or acoustics analysis. Issues of fabrication are considered in the context of parametric modeling and rapid prototyping.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of complex spatial structures, including an understanding of the structural functionality of various construction systems using shells, plates, frames, beams, etc.
- Must have knowledge of parametric design tools that enable the generation of quick feedback loops from generation of form and performance analysis (structure, acoustics)
- Must have knowledge of advanced room acoustics

SKILLS

- Must be able to use parametric design tools to enable quick feedback loops between geometric exploration of form and performance analysis including structural and acoustic parameters
- Must be able to make a structural analysis of complex spatial structural systems
- Must be able to use advanced numerical tools for structural and acoustics analysis of advanced structural systems or rooms

COMPETENCES

- Can create a synthesis of architectural, structural and acoustic requirements larger scale buildings, by using parametric design tools that support the definition and control of advanced geometry, digital fabrication and performance analysis

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Performance-Aided Design: Form, Material, Structure, Acoustics and Fabrication
Type of exam	Written or oral exam
ECTS	5
Permitted aids	Without 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	Performancebaseret design: Form, materiale, struktur, akustik og fabrikation
Module code	AODAPM2TK7V1
Module type	Course
Duration	1 semester
Semester	Spring
ECTS	5
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

TECTONIC STUDIES AND EXPERIMENTATIONS IN FORM, STRUCTURE, MATERIALS AND DETAILS

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The module adds to knowledge obtained in 1. semester of the Master's programme in Architecture

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the course is to provide a broad critical understanding of tectonic theory and practice in tectonic design through the presentation and analysis of relevant engineering and architectural theories, methods and models in historical as well as contemporary engineering and architectural design combined with physical tectonic studies, experimentation, modeling, prototyping and crafting.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of tectonic theory, methods and models that are applicable to a tectonic design
- Must have knowledge of prototyping and crafting methods
- Must have tectonic knowledge of interrelationship between form, structure, materials and detail

SKILLS

- Must be able to analyse and critically reflect on the application and use of form, structure, materials and details in a tectonic design
- Must be able to design and model tectonic constructions with an interrelationship between form, structure, materials and detail
- Must be able to demonstrate understanding of tectonic constructions during experimentation, modeling, prototyping and crafting

COMPETENCES

- Can design a tectonic project on the basis of engineering and architectural analyses, sketches, physical models and a critical account of the process evaluating its tectonic quality

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Tectonic Studies and Experimentations in Form, Structure, Materials and Details
Type of exam	Written or oral exam
ECTS	5
Permitted aids	Without aids
Assessment	Passed/Not Passed

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	Tektoniske studier og eksperimenter med form, struktur, materialer og detaljer
Module code	AODAPM2TK7V2
Module type	Course
Duration	1 semester
Semester	Spring
ECTS	5
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

TECTONIC DESIGN: STRUCTURE AND CONSTRUCTION

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The module adds to knowledge obtained in 1. semester of the Master's programme in Architecture

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the project is to develop a preliminary design with a tectonic design approach and to achieve an authenticity of innovative design of structure and the architectural expression by ensuring a continuity and integrity between form, structure and construction. Further the aim is to develop the Nordic craft tradition in relation to the new innovative design of structure, use of materials and means of construction in contemporary architecture.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of complex spatial structures, including an understanding of the structural functionality of various construction systems in connection with the architectural ideas behind a project and in relation to context
- Must have knowledge of tectonic theory and methods and a critical understanding of Nordic architecture, and an aesthetic and technical understanding of the interplay between form, structure, materials and detail in relation to the integrity of architectural design

SKILLS

- Must be able to make engineering and architectural innovative design of buildings that emphasize the interplay between form, structure, materials and detail in relation to the integrity of an architectural idea
- Must be able to do performance aided design using parametric design tools for structural and acoustical analysis
- Must be able to synthesize complex room programs, functional and aesthetic demands, and be able to integrate constructional and tectonic design in a coherent architectonic project solution of substantial quality
- Must be able to apply critical reasoning to the innovative engineering and architectural design issues that arise through project development and to demonstrate independent thinking and informed judgment

COMPETENCES

- Can demonstrate making performance aided engineering and architectural design of a building of high complexity and substantial scale
- Can prepare a design proposal for a tectonic building of substantial aesthetic, architectural, constructive, structural and functional qualities
- Can present the project in a professionally competent way by means of relevant media and techniques

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Tectonic Design: Structure and Construction
Type of exam	Oral exam based on a project
ECTS	20

Permitted aids	Without 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	Tektonisk design: Struktur og konstruktion
Module code	AODAPM2TP7V3
Module type	Project
Duration	1 semester
Semester	Spring
ECTS	20
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

ARCHITECTURE, HEALTH AND WELL-BEING

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The module adds to knowledge obtained in 1. semester of the Master's programme

in Architecture

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

To address some of the most important societal challenges such as aging society, lifestyle diseases and stress, the course focuses on social sustainability within building types that address these topics like elderly homes, schools, kindergartens and psychological institutions. The main goal is to gain knowledge, skills and competencies in the sustainable design of buildings for health and well-being.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of social sustainability in built environments
- Must have knowledge of state-of-the-art design principles for health and well-being
- Must have knowledge of human behavior related to indoor environment, light and built structures
- Must have knowledge of theories and methods to address human physical, social and psychological needs and demands for architecture

SKILLS

- Must be able to apply evidence based research on indoor climate, light and structural principles to support health and well-being in the design of built environments
- Must be able to understand human perceptions of the architectural environment and address this in the design of health and welfare buildings
- Must be able to critically address user perspectives and integrate concerns for human behavior, needs and demands in the design of health and welfare buildings

COMPETENCES

- Must be able to use research and evidence-based knowledge in discussion and reflection on building designs for health and well-being
- Must be able to evaluate architectural strategies for health and well-being
- Must be able to critically evaluate and discuss the impact of indoor environment, light and structural design on health and well-being

TYPE OF INSTRUCTION

Type of instruction:See general description in § 17.

EXAM

EXAMS

Name of exam	Architecture, Health and Well-being
Type of exam	Written or oral exam

ECTS	5
Permitted aids	Without 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	Arkitektur, sundhed og velvære
Module code	AODAPM2SK7V1
Module type	Course
Duration	1 semester
Semester	Spring
ECTS	5
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
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Faculty	Technical Faculty of IT and Design

MATERIALITY AND CONSTRUCTION OF SUSTAINABLE BUILDINGS

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The module adds to knowledge obtained in 1. semester of the Master's programme in Architecture

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the course is to provide an understanding of the diverse and specific qualities of building materials and constructions and their use in contemporary buildings. The course aims at providing an advanced understanding of material theory, experimental methods of working with materials and practice in design and evaluation of sustainable buildings.

This includes insight into material behavior of selected materials, certification systems as well as appreciation of how materials may be applied and perceived within the architectural realm.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of state-of-the-art materials and building products related to sustainable building design
- Must have knowledge of green building certification systems, including principles for life cycle assessment and life cycle costs of materials
- Must have advanced knowledge of perception of materials in architecture in relation to thermal, visual, tactile, acoustic and aging qualities and durability.

SKILLS

- Must be able to carry out assessment and certification of buildings with regard to materials and construction
- Must be able to master building detailing of sustainable architecture as regards to technical performance and materiality
- Must be able to address developments in building materials and components as regards to technical properties, technology and impact on human perception

COMPETENCES

- Must be able to independently discuss and reflect upon the complex use of materials in sustainable buildings
- Must be able to independently discuss and reflect upon green building evaluation methods
- Must be able to demonstrate a professional and interdisciplinary approach to the selection and application of materials in sustainable building

TYPE OF INSTRUCTION

See general description of the types of instruction in § 17 .

EXAM

EXAMS

Name of exam	Materiality and Construction of Sustainable Buildings
Type of exam	Written or oral exam

ECTS	5
Permitted aids	Without aids
Assessment	Passed/Not Passed
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	Materialitet og konstruktion af bæredygtige bygninger
Module code	AODAPM2SK7V2
Module type	Course
Duration	1 semester
Semester	Spring
ECTS	5
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

SUSTAINABLE WELFARE BUILDINGS

2019/2020

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the project is to enable the students to develop preliminary building design for energy efficient welfare buildings with special emphasis on structure, materials and detailing aspects of architecture and using an advanced integrated design approach. Technical, structural, spatial, social, health, well-being, functional, logistical as well as tectonic and aesthetic problems must be solved in an integrated building design for a specific user group.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge of advanced integrated design
- Must have knowledge of material and structural methods, principles and strategies that are applicable to sustainable architecture
- Must have knowledge of architectural conditions for health and well-being
- Must have knowledge of different strategies in the field of sustainable welfare architecture

SKILLS

- Must be able to choose, implement and combine structural strategies with passive as well as active energy strategies in architectural design
- Must be able to choose and implement building materials with adequate detailing
- Must be able to model and design energy efficient buildings with sustainable structural qualities using computational design tools
- Must be able to identify and target a design for a defined user group and defined activity with emphasis on indoor climate and sensuous qualities
- Must be able to evaluate the sustainable standard of the building according to acknowledged environmental certification systems.

COMPETENCES

- Must be able to develop a sustainable welfare building proposal that fulfills all predefined architectural, structural, functional, social, energy and acoustic requirements
- Must be able to communicate proper terminology in oral, written and graphical communication and documentation of problems and solutions in the integrated design of buildings and building services
- Must be able to discuss and reflect on tectonic, material, perceptive and aesthetic qualities of integrated sustainable building design

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Sustainable Welfare Buildings
Type of exam	Oral exam based on a project
ECTS	20
Permitted aids	Without 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	Bæredygtigt velfærdsbyggeri
Module code	AODAPM2SP7V3
Module type	Project
Duration	1 semester
Semester	Spring
ECTS	20
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

CONSTRUCTION MANAGEMENT

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The student must have knowledge, skills and competencies within the architectural design and engineering field corresponding to the completion of the MSc01 and MSc02 Architectural Engineering education.

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

An introduction to project, design and construction management.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have knowledge and understanding of theories and methods within project, design or construction management Must have knowledge of ethical, economical, legal and social interests in the field of construction management
- Must have knowledge of current theories and practice in construction management

SKILLS

- Must be able to analyse and assess the cross-disciplinary inclusion of actors involved in the decision-making processes
- Must be able to use methods and techniques for preparing cost estimates for building construction projects
- Must be able to apply methods of planning and scheduling of construction projects
- Must be able to identifying work elements, estimating activity durations, preparing network schedules and schedule updates, analysing planned vs. actual project progress

COMPETENCES

Can apply methods and theories for project, design or construction management within a given budget using specified materials and construction methods

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Construction Management
Type of exam	Written or oral exam
ECTS	5
Permitted aids	Without aids
Assessment	Passed/Not Passed
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	Projekt-, design- og byggeledelse
Module code	AODAPM3K17V1
Module type	Course
Duration	1 semester
Semester	Autumn
ECTS	5
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design

RESEARCH, PRACTICE AND DEVELOPMENT IN ARCHITECTURAL DESIGN AND ENGINEERING

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The student must have knowledge, skills and competencies within the

architectural design and engineering field corresponding to the completion of

the MSc01 and MSc02 Architecture & Design educational programme.

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The aim of the module is to use the latest architectural design and engineering research and/or professional practice to raise students' knowledge and development level. Furthermore, the module must document the use of research based or practice based knowledge. This means to familiarize the students with basic research, practice or development methods and theory, as well as enable them to acquire specific knowledge within one of the following chosen fields: *A) Project-oriented study in an external organisation, B) Semester project with company* contact, or *C) Research semester project*, related to architectural design and engineering.

The Project-oriented study in an external organization must have a scope that correspond the ECTS load.

LEARNING OBJECTIVES

KNOWLEDGE

- Must have scientific, practical or conceptual knowledge of relevance to the chosen field related to architectural design and engineering
- Must have knowledge of the theory used and the methodologies used within the chosen field related to architectural design and engineering
- Must have knowledge of the relevance and validity of results produced through methods in the chosen field.

SKILLS

- Must be able to formulate a given scientific or practice-based problem in a clear and consistent way
- Must have the ability to select research- or practice based knowledge in the chosen field related to architectural design and engineering
- Must be able to select and apply an appropriate research or praxis-oriented method for the chosen problem area to be examined within the given timeframe or time available
- Must be able to engage with professional environments and further develop their interdisciplinary approach in the chosen field

COMPETENCES

- Must be able to seek out and reflect on relevant theoretical, methodological and/or empirical knowledge, and apply to a given problem/project of their choice
- Must be able to integrate relevant research knowledge into a practical project or a theoretical project related to architectural design and engineering
- Must be able to communicate and transfer results in a clear and systematic way
- Can work in relevant cross-disciplinary environments and solve design related tasks in the chosen field

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Research, Practice and Development in Architectural Design and Engineering
Type of exam	Oral exam based on a project
ECTS	25
Permitted aids	Without 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	Forskning, Praksis og udvikling inden for arkitekturingeniør- og designområdet
Module code	AODAPM3P192
Module type	Project
Duration	1 semester
Semester	Autumn
ECTS	25
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
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MASTER'S THESIS

2019/2020

PREREQUISITE/RECOMMENDED PREREQUISITE FOR PARTICIPATION IN THE MODULE

The student must have knowledge, skills and competencies within the architectural design and engineering field corresponding to the completion of the MSc01 - MSc03 Architectural Engineering education.

CONTENT, PROGRESS AND PEDAGOGY OF THE MODULE

The final semester sets the stage of manifestation of the students' abilities to make design solutions. The students must define a problem and display the ability to achieve a design proposal in an integrated whole. The work must include relevant theories and methodologies and be based on the skills and competencies acquired throughout the Master's program in architecture.

LEARNING OBJECTIVES

KNOWLEDGE

- Must demonstrate knowledge and understanding within the field of specialisation at a high international level
- Must be able to critically assess knowledge and identify problems within the field of specialisation
- Must demonstrate the ability to select appropriate research based knowledge in the process

SKILLS

- Must be able to use an advanced integrated design process
- Must be able to independently motivate their choice of methods or/and theoretical approach
- Must be able to demonstrate the acquired skills in tectonics and sustainability in accordance with and at a level suitable to the chosen theme of the master thesis
- Must be able to apply a range of methods within the field of engineering and architecture and demonstrate the use of selected parameters in engineering within the field of specialisation
- Must be able to communicate in a clear and systematic way relevant scientific and professional aspects of the project work both to peer and non-peer

COMPETENCES

- Can independently develop a project based on a specific problem within the field of specialisation to the highest international standards
- Can be competent in finding an integrated design solution of Tectonic and Sustainable architecture and make a design that fulfill all predefined criteria
- Can anticipate and solve problems and make a synthesis in the design that includes the technical, functional and aesthetic qualities
- Must be able to present the results of the project work professionally

TYPE OF INSTRUCTION

See general description of the types of instruction described in § 17.

EXAM

EXAMS

Name of exam	Master's Thesis
Type of exam	Master's thesis/final project

ECTS	30
Permitted aids	Without 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	AODAPM4P17V1
Module type	Project
Duration	1 semester
Semester	Spring
ECTS	30
Language of instruction	English
Location of the lecture	Campus Aalborg
Responsible for the module	Tenna Doktor Olsen Tvedebrink, Sarah Guldhammer

ORGANISATION

Study Board	Study Board of Architecture & Design
Department	Department of Architecture, Design and Media Technology
Faculty	Technical Faculty of IT and Design