

# MASTER OF SCIENCE IN CIVIL- AND ARCHITECTURAL ENGINEERING

1. ST SEMESTER	2. ND SEMESTER	3. RD SEMESTER	4. TH SEMESTER
Compulsory courses	Compulsory courses	Elective Courses	Thesis
Compulsory courses	Compulsory courses	Elective Courses	
Compulsory courses	Compulsory courses	Elective Courses	
Specialised study packages	Specialised study packages	Elective Courses	
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Specialised study packages	Specialised study packages	Elective Courses	
30 ECTS	30 ECTS	30 ECTS	30 ECTS

## COMPULSORY COURSES

A basic package of six subjects taken during the first year of studies.

### SPRING:

Risk and Reliability Engineering	5 ECTS
Experimental Mechanics Theory or Integrated Energy Design or Advanced Planning and Scheduling of Construction Projects	5 ECTS
Project 2 - Integrated Engineering Project	5 ECTS

### FALL:

Numerical Analysis in Civil Engineering	5 ECTS
Structural Concepts or Heat and Mass Transfer	5 ECTS
Project 1 - Research Methods in Civil and Architectural Engineering	5 ECTS

## SPECIALISED STUDY PACKAGES

### STRUCTURAL ENGINEERING: 25 ECTS IN

#### Monitoring of Structures:

Structural Dynamics	5 ECTS
Random Vibration	5 ECTS
Modal Testing	5 ECTS

#### Structural Analysis and Concrete Structures:

Mechanics Theory of Plasticity	5 ECTS
Concrete Structures	5 ECTS
Steel Structures	5 ECTS

#### Geotechnical Engineering:

Geotechnical Monitoring and Field Testing	5 ECTS
Numerical Analysis in Geotechnical Engineering	5 ECTS
Experimental Geotechnics	5 ECTS

### INTEGRATED ENERGY DESIGN: 25 ECTS IN

#### Indoor Climate and Energy:

Indoor Climate	5 ECTS
Simulation of Building Energy Systems	5 ECTS
Energy-efficient Building Envelope Design	5 ECTS

#### (Day) Lighting Design:

Daylighting Design	5 ECTS
Electric Lighting Design	5 ECTS
Simulating Lighting Reality	5 ECTS

#### Fluid Dynamics in Architectural Engineering:

Natural Ventilation	5 ECTS
CFD in Architectural Engineering	5 ECTS
Air Physics in Building Ventilation	5 ECTS

### CONSTRUCTION MANAGEMENT: 25 ECTS IN

#### Construction Management:

User and Client Involvement in Construction	5 ECTS
Constructional Economics and Process	5 ECTS
Lean, Lean Construction & Lean Design	5 ECTS
Individually composed specialization	10 ECTS

### TECTONIC BUILDING DESIGN: 25 ECTS IN

#### Tectonic Design:

Computational Design	5 ECTS
Form-finding in Building Design	5 ECTS
Tectonics - Structure as Architecture or Architectural Acoustics	5 ECTS
Individually composed specialization	10 ECTS

## ELECTIVE COURSES

Choose courses from the specialised study packages or other courses at the Department of Engineering, and the broader Faculty of Science approved by the study program manager. AU Course Catalogue: [kursuskatalog.au.dk/en/](https://kursuskatalog.au.dk/en/)