### 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 5 ECTS
- Integrated Energy Design or Advanced Planning 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/