MSc Master program

SUSTAINABLE ARCHITECTURE
Faculty of Architecture and Design

NTNU
Norwegian University of Science and Technology
SUSTAINABLE ARCHITECTURE

The MSc in Sustainable Architecture at NTNU aims to educate and train building professionals in the use and development of competitive methods and solutions for lowering GHG emissions of the built environment in a life-cycle perspective.

The curriculum of the MSc in Sustainable Architecture is structured around three main concerns related to the environmental impact of the built environment (I semester: optimizing environmental performance, II semester: minimizing environmental impact and III semester: integrated energy design processes). In the fourth semester students develop their Master thesis, as a research based report or a design project.

Nowadays, architects and engineers need to be able to design buildings able to establish a symbiotic relation with the natural environment. An architectural design process cannot any longer disregard a deep comprehension of the natural environment’s limits and resources, both in qualitative and quantitative terms. Scientific principles and laws governing nature, become thus a meaningful platform for imagining a new generation of buildings able to compensate the environmental impact related to their construction, operation and disassembly.

MSc curriculum _ 4 semesters

1. ENVIRONMENTAL PERFORMANCE
   - 7.5 stp _ Concepts and strategies in Sust Arch
   - 7.5 stp _ Climate and built form / Theory
   - 15 stp _ Climate and built form / Design

2. ENVIRONMENTAL IMPACT
   - 7.5 stp _ Experts in team
   - 7.5 stp _ Emissions as design drivers / Theory
   - 15 stp _ Emissions as design drivers / Project

3. INTEGRATED ENERGY DESIGN
   - 7.5 stp _ Elective course
   - 7.5 stp _ Integrated Energy design / Theory
   - 15 stp _ Integrated Energy design / Project

4. THESIS

Each semester is structured around a specific know-how area without loosing connection to the others.
COURSE STRUCTURE
The curriculum of the MSc in Sustainable Architecture is structured around three main concerns related to the environmental impact of the built environment (environmental performance, environmental impact and integrated energy design). The focus of the theory and project courses run in each semester corresponds to the acquisition of specific knowledge and competence for lowering GHG emissions of buildings. The lectures, studio and laboratories are aligned towards the focus of the specific semester without losing a holistic perspective. The first semester focuses on climate analyses and the optimization of buildings’ environmental performance. The second semester addresses issues related to the environmental impact of materials from a life cycle perspective. During the third semester, students are introduced to integrated design processes for optimizing the building environmental performance in relation to the integration of the energy systems.

ENTRY QUALIFICATIONS
The programme is open to both international and Norwegian students with a 3-year Bachelor Degree in Architecture, Engineering or Urban Planning. Students with a background in other relevant fields may also be considered for admission, further to a discussion with the Master coordinator and Advisory Board. A minimum of 30 ECTS related to architectural design or building construction is generally required in order to get access into the programme.

The MSc program is open to both architects and engineers. Throughout the two year duration of the MSc programme, a holistic approach is emphasized which encompasses the many architectural expressions and possibilities within a zero emission built environment. Within each of the theory and project courses, high demands are made towards integrated design strategies so as to ensure the usability and synergy of the design with its surroundings and users. Throughout the whole program, the students are continuously trained in interdisciplinary co-operation to better equip them to integrate integrated design methods in their everyday professional practice.
NTNU gathers technological knowledge in Norway. In addition to technology and science, we have a wide range of courses in social science, humanities, sciences, medicine, architecture and fine arts. Collaboration across disciplines enables us to develop innovative ideas and create solutions that change our daily lives.

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SUSTAINABLE ARCHITECTURE
Restricted admission

Application deadlines:
www.ntnu.edu/studies/mssusarc/

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Application code: 194-9673 (international)
194-8993 (nordic/norwegian)

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