

# NTNU Oceans

## NTNU Ocean Science and Technology

30 different departments at NTNU are bringing the best minds to work on cross-disciplinary subjects to better understand the ocean and to improve technological solutions for its sustainable use. Combining natural science with marine engineering, humanities and social science creates knowledge that can solve complex challenges. Six focus areas have been selected:

- Maritime transport
- Into the deep ocean
- Sustainable seafood and marine bio-resources
- Arctic exploration
- Marine minerals and renewables
- Marine environment and society

The Centre of Excellence (SFF) in Autonomous Marine Operations and Systems (AMOS) is a key driver in the development of new ocean technology at NTNU. In addition, NTNU contributes to five different centres for research-based innovation (SFI): SAMCoT, EXPOSED, MOVE, Smart Maritime, CtrlAQUA.



Photo: NTNU

## Facts and figures

NTNU has:

- 3000 researchers and scientific collaborators
- 23000 students (half of which study technology and natural sciences)
- 370 doctoral degrees awarded annually
- 105 projects in the European Commission's framework programme

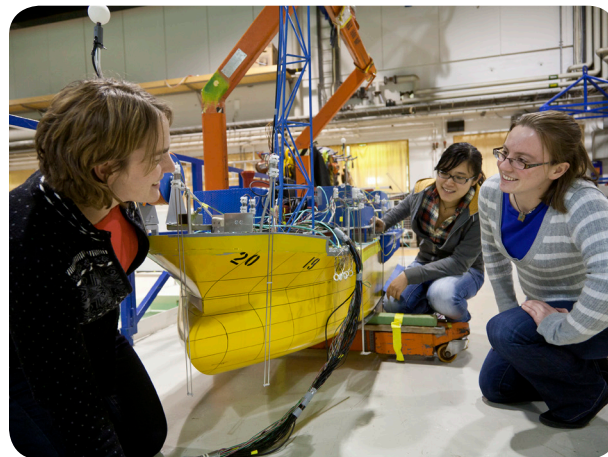


Photo: CeSOS

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Knowledge for  
a sustainable  
ocean



NTNU - Trondheim  
Norwegian University of  
Science and Technology

# STRATEGIC RESEARCH AREAS 2014–2023

**NTNU has designated four strategic research areas that form networks across faculties and departments and bring the best minds to work on cross-disciplinary subjects.**

**With the right balance and interaction between applied and long-term basic research, NTNU will contribute to solve complex problems and develop new opportunities. Our doctoral programmes are a key instrument for renewing research and strengthening society's knowledge base.**



ENERGY



HEALTH



OCEANS



SUSTAINABILITY



Photo: Kasper Hancke

## Aquaculture research at NTNU

Within the field of aquaculture, research focuses on offshore aquaculture, on land-based production of seafood in recirculation systems, and on the development of high-quality fish feed based on new marine raw materials.

The most important aquaculture knowledge areas at NTNU are:

- Aquaculture technology: automated monitoring platforms, control and sensor systems, hydrodynamic models, service vessel design, operation logistics, recirculation system technology.
- Marine biotechnology: microbiological interactions in tank environment, gut microbiota, digital fish, biofilter dynamics.
- Food safety
- Interactions with the environment: spreading of nutrients, carrying capacity analysis, automated monitoring of environmental variables, life-cycle assessment.



Photo: Brohode Frøya

## Marine study programmes at NTNU

NTNU also offers a range of relevant marine education programmes at Bachelor, Master and PhD level. Master studies in marine science and technology include:

- MSc in Marine Coastal Development (incl. specialisation in Aquaculture)
- MSc in Marine Technology (incl. specialisation in Marine resources and aquaculture)
- MSc in Coastal and Marine Engineering and Management (Erasmus)
- MSc in Cybernetics and Robotics (incl. specialisation in Aquaculture cybernetics)
- Nordic Master in Aquatic Food Production
- Nordic Master in Maritime Engineering

In addition, there are many other study programmes providing the students with insight and competence that is of relevance to the marine sector.

See [www.ntnu.edu/studies](http://www.ntnu.edu/studies).

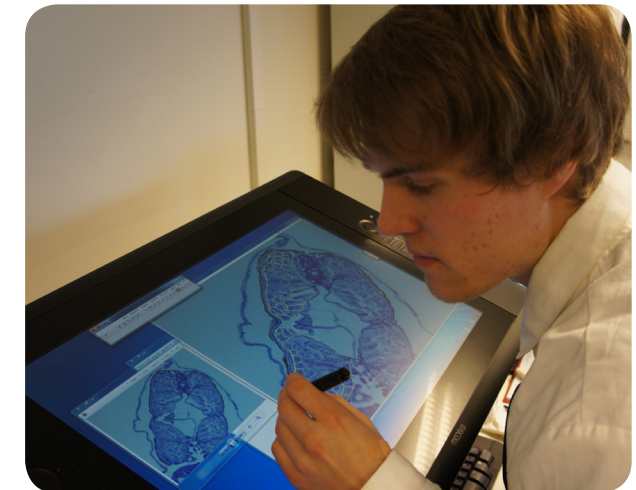


Photo: Elink Kjørsvik