

**MASTER OF SCIENCE**  
Product and System Design  
Ship Design

 **HØGSKOLEN**  
I ÅLESUND

Aalesund University College

Once an **Engineer** - Always an **Engineer**

Jonathan, Product Designer

[www.hials.no](http://www.hials.no)





In our northern corner of the world you can combine your studies with exciting outdoor activities, both winter and summer. Challenge yourself with skiing, white water rafting or climbing. Or simply enjoy the fresh air, clean water and lots and lots of space. As a student in Norway you will never be short of possibilities for unique nature experiences.



## WELCOME AS STUDENT IN AALESUND

Aalesund University College is the only institution in the world offering international Master's Degrees in Advanced Maritime Operations. Aalesund is the most beautiful city in Norway. There is a balance of city life, nature and sea, and you can enjoy your time in a coffee bar after hiking in the mountains.

Creative dialogue and interaction between lecturers and students are at the heart of our program, and it creates the sense of belonging to a small and lively community. We will do everything we can to make sure you feel at home and enjoy your stay here.

### CAMPUS

At Aalesund University College you will be training in of the most advanced maritime simulators in the world, and students benefit from close connections with nearby innovative maritime enterprises.

The campus is situated right outside the city center, and contains a bookshop, library, computer labs, and cafeteria. The facilities are modern, spacious, and accessible 24 hour a day.

### WAY OF LIFE

Norway is not among the most crowded places on the planet! But Norwegians enjoy the space and the diverse nature, and visitors are often astonished by Norwegians' active way of life.

Norway is a modern country where the explorative mind-set is geared towards technology, innovation, and developing a knowledge-based society. Norwegians continue to further develop the oil and gas industry, fisheries, and traditional industrial areas.

### STANDARD OF LIVING

The United Nations (UN) ranks Norway as having the highest standard of living in the world. This ranking is based on average levels of education and income, combined with expected length of lifetime, and factors like human rights and cultural freedom. Norway has high educational levels and material wealth, and good health care. You will always feel very safe in Norway.

### LIVE AND STUDY IN AALESUND

Aalesund is situated on several islands on the West Coast of Norway. Art Nouveau architecture creates a fairy-tale atmosphere in the center of Aalesund. This setting is enhanced by spectacular mountains and fjords. Whether you choose to live in the town center or in a nearby area, you have easy access to Aalesund University College and other facilities.

# MASTER OF SCIENCE

## PRODUCT AND SYSTEM DESIGN

Advanced Maritime Operations are at the center of Western Norway's shipping activities. The future for Product and System Design is unlimited. You can be part of shaping the offshore-future with a Master's Degree in Product and System Design from Aalesund University College.

### PROGRAM

The program focuses on the design of ship equipment and maritime systems. You will be challenged in developing new solutions that are safe, environmentally friendly, and efficient. You will learn about advanced systems that include robots, cranes and winches which address the complex interactions between operators and machines.

You will also concentrate on the maritime operations on board, and you will be simulating these operations in order to design the required maritime systems in the most efficient way.

Part of the program combines theory and practice by students spending time with nearby maritime companies. The maritime cluster around Aalesund is among the most developed in the world, and Norwegian maritime enterprises form an internationally competitive, expertise-based industry that comprises an unrivalled degree of professionalism. You will acquire skills and attitudes to act efficiently within the design of maritime products and systems in the offshore industry throughout the world.

### SUBJECTS

Machinery Systems Design  
Mechatronics, Robots and Deck Machines  
Product and System Design  
Product Family Design  
Industrial Design and Human Factors  
Computer Aided Engineering (CAE)  
Scientific Theory and Methods  
Managing International Corporations

### COURSE MODULES

Human-Machine-Interaction  
Lean Systems  
System Modeling  
System Simulation  
Systems Engineering  
Automation of Repeated Design Tasks  
Structural Integration of Heavy Equipment on hull structures  
Platform Design  
Visualization  
Ships and Systems for Cold and Harsh Environments  
Advance Marine Operations  
Safety Evaluation of Advanced Marine Operations  
Multiphysics  
Predictive Control

The modules are taught in short, intensive courses. Qualified lecturers come from all over the world and several modules are taught by experts from the maritime industry.

### CAREER OPPORTUNITIES

With a Master's Degree in Product and System Design from Aalesund University College you are well prepared to work in design and engineering companies, shipbuilding and shipping companies, and in the offshore industry all over the world. During your studies you will be able to spend time with nearby industry.

### FUNDING

There are no tuition fees for the Master's programs, but all students must have sufficient funding to cover the cost of living (including accommodation, food, transport, books etc). Please note that Norwegian authorities require all foreign students to document how they will finance their studies in Norway when applying for a student visa to Norway. The required amount for the academic year 2010/2011 is approximately NOK 90 000. Travel to/from Norway is not included. See more information on [www.udi.no](http://www.udi.no)

### NAVNEET SHARMA

Student MSc Product and System Design

I have found my course to be very interesting and challenging at the same time. Studying for a Master's Degree in Product and System Design requires a lot of initiative and self study. I like the company visits which keep us informed about the industry. The lecturers are open to helping students, and they are easily approachable. Aalesund University College has good facilities to aid students in their work, and it is easy to stay in touch with friends and family at home.

Life in Aalesund is easy, and I enjoy being here. It is very safe and people are helpful. There were no problems for me coming from India, but students need to be prepared for the cold climate.

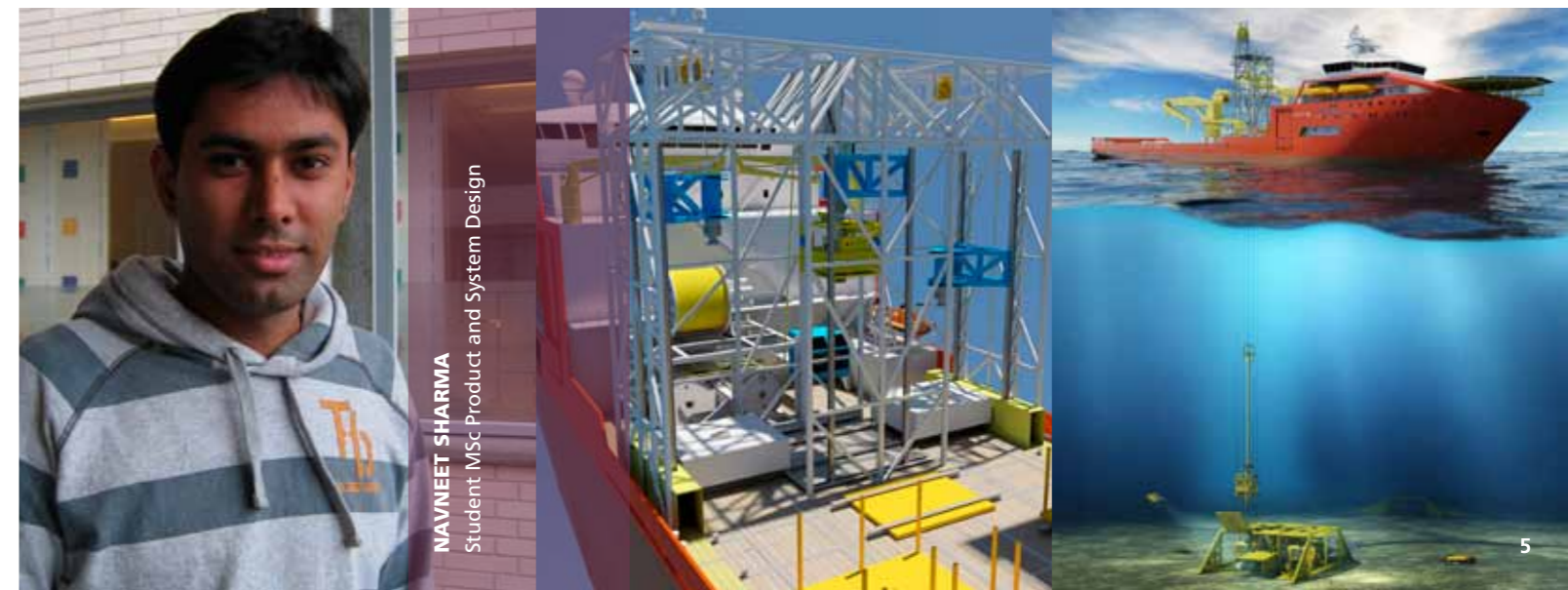
**Application deadline for Non-EU/EEA citizens: 1 March**  
**Application deadline for Norwegian, Nordic and EU/EEA citizens: 15 April**

### Admission Requirements:

4-year Bachelor degree in Mechanical Engineering, Marine Technology, Automobile Engineering or a documentet equivalent education. Documentet English skills.



For admission, structure of the program and further information, please see: [www.hials.no/mscproduct](http://www.hials.no/mscproduct)



NAVNEET SHARMA  
Student MSc Product and System Design

# MASTER OF SCIENCE

## SHIP DESIGN

A ship is a very complex organism. Various systems act in concert to perform the different tasks a ship may be designed to carry out. Aalesund University College is situated in the middle of the world's largest maritime cluster, and you will benefit from international and regional expertise.

### PROGRAM

It is a great engineering challenge to design new ship systems that could turn shipping into the most efficient, safe and environmentally friendly means of transportation in the future. New ship design is typically in response to needs coming from new technologies, changes in the world politics, new strategies and lessons learned from previous ship development.

During your second semester you choose one of the following majors:

- Ship Structural Design. In this course you will study the factors influencing the structural design of ships. Theoretical understanding of the structural capacity of a ship is accompanied by up-to-date practical calculation methods.
- Computational Fluid Dynamics (CFD). A theoretical background to numerical prediction of fluid flow is given. CFD tools are used to predict the resistance of ship hulls and to study local flows for design optimization of various structural details (brackets, rudder positions, etc.).

### SUBJECTS

Ship Design  
Ship Hydrodynamics  
Computational Fluid Dynamics (CFD)  
Ship Structural Design  
Product Family Design  
Industrial Design and Human Factors  
Computer Aided Engineering (CAE)  
Scientific Theory and Methods  
Managing International Corporations

### COURSE MODULES

Supply Chain Management  
Lean Systems  
System Modeling  
System Simulation  
System Engineering  
Automation of Repeated Design Tasks  
Structural Integration of Heavy Equipment on hull structures  
Platform Design  
Visualization  
Ships and Systems for Cold and Harsh Environments  
Advanced Marine Operations  
Safety Evaluation of Advanced Marine Operations  
Multiphysics

Modules are taught by teams involved in maritime operations. The modules are taught in short, intensive courses. Qualified lecturers come from all over the world.

### CAREER OPPORTUNITIES

With a Master's Degree in Ship Design from Aalesund University College you are well prepared to work in engineering companies, shipbuilding and shipping companies as well as in the offshore industry all over the world. During your studies you will be able to spend time with the nearby industry.

### FUNDING

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### KARL HENNING HALSE

Associate Professor

In the region around Aalesund, there is an international leading industrial maritime cluster. The cluster consists of more than 200 companies with 21 000 employees and with a total turn-over of more than 50 billion NOK. The cluster contains a complete chain of companies ranging from ship owners through design companies, ship yards, and equipment suppliers to classification companies and governmental bodies.

There was a clear signal from the local maritime industry that a Masters Study in Ship Design would be beneficial to the entire cluster. As a response to this request, Aalesund University College has developed the present Master's program in Ship Design, a study which may become an important door opener for students who wants to be a part of a strong and active maritime cluster.

**Application deadline for Non-EU/EEA citizens:** 1 March  
**Application deadline for Norwegian, Nordic and EU/EEA citizens:** 15 April

### Admission Requirements:

4-year Bachelor degree in Mechanical Engineering, Marine Technology, Automobile Engineering or a documentet equivalent education. Documentet English skills.



For admission, structure of the program and further information, please see: [www.hials.no/mscship](http://www.hials.no/mscship)



KARL HENNING HALSE  
Associate Professor





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