



# NTNU

Kunnskap for en bedre verden

**Jobbnorge ID:** 249492  
**Deadline:** 10/8/2023  
**Website:** <http://www.ntnu.no>  
**Scope:** Fulltime  
**Duration:** Temporary

We are looking for a

## PhD Candidate in Structural Engineering

### This is NTNU

NTNU is a broad-based university with a technical-scientific profile and a focus in professional education. The university is located in three cities with headquarters in Trondheim.

At NTNU, 9,000 employees and 43,000 students work to create knowledge for a better world.

You will find more information about working at NTNU and the application process [here](#).

Video: <https://youtu.be/Xt-yHCN5QS0>

### About the job

We have a vacancy for a PhD Candidate in Structural Engineering at Department of Ocean Operations and Civil Engineering at NTNU in Ålesund, Norway. We are looking for a candidate who is motivated to improve existing and develop new resilience assessment frameworks that can be applied to aging coastal infrastructure.

NTNU Ålesund is currently focusing on asset management and resilience of critical transport infrastructure. Resilience can be defined as the ability to anticipate, prepare for, adapt to changing conditions, and withstand, respond to, and recover rapidly from disruptions. The expected increase in the frequency of extreme hazards together with aging infrastructure and following its structural deterioration are two main concerns threatening the resilience of existing coastal infrastructure that consists of multiple bridges, roads and ferry quays that play a crucial role in Norway's economy and society. This in turn puts strains on infrastructure owners that need to prioritize which assets need retrofit and repair the most.

The PhD project aims to contribute to aid decision-makers in how to manage existing assets in order to ensure maximum resilience of the infrastructure network. The goal is to develop a framework for prioritization of which assets should be selected for maintenance, retrofit and repair, based on information gained by modern engineering tools such as finite element model updating, force identification and structural health monitoring.

For a position as a PhD Candidate, the goal is a completed doctoral education up to an obtained doctoral degree.

You will report to supervising Associate Professor Bartosz Siedziako. Your immediate leader is Head of the department.

### Duties of the position

- identify relevant damages for coastal infrastructure
- identify the current state of ferry quays in MR County by means of portable SHM system and inspections
- develop reliable numerical models for the current state of the quays/bridges
- examine whether structural health monitoring can contribute to extending the remaining useful life and aid in decision making resulting in more economical maintenance activities
- perform numerical simulations with the use of the finite element method
- conduct field measurements on existing structures using portable instrumentation and collection data acquisition system
- dissemination of results in scholarly journals, at international conferences, and for the general public
- collaborate with other PhDs and academic staff at the department working on structural health monitoring, finite element model updating, force identification, and estimation of remaining useful life

### Required selection criteria

- professionally relevant background in structural engineering or/and structural dynamics
- your education must correspond to a five-year Norwegian degree programme, where 120 credits are obtained at master's level. You must have a strong academic background from your previous studies and an average grade from the master's degree program, or equivalent education, which is equal to B or better compared with NTNU's grading scale. If you do not have letter grades from previous

studies, you must have an equally good academic basis. If you have a weaker grade background, you may be assessed if you can document that you are particularly suitable for a PhD education.

- you must meet the requirements for admission to the faculty's doctoral program (<https://www.ntnu.edu/studies/phiv>)
- master's students can apply, but the master's degree must be obtained and documented
- good programming skills in MATLAB/Python
- good written and oral English language skills

The appointment is to be made in accordance with [Regulations on terms of employment for positions such as postdoctoral fellow, PhD candidate, research assistant and specialist candidate](#) and [Regulations concerning the degrees of Philosophiae Doctor \(PhD\) and Philosodophiae Doctor \(PhD\) in artistic research national guidelines for appointment as PhD, post doctor and research assistant](#)

## Preferred selection criteria

- Experience working with experimental data
- Experience with field measurements
- Experience working with sensors
- Knowledge in finite element method, model updating and experimental modal analysis

## Personal characteristics

- strong capabilities in analytical thinking
- positive attitude
- good communications skills
- ability to take initiative and to work independently
- self-motivated, enthusiastic, and dedicated

Emphasis will be placed on personal and interpersonal qualities, and motivation for the position.

## We offer

- exciting and stimulating tasks in a strong international academic environment
- an open and [inclusive work environment](#) with dedicated colleagues
- favourable terms in the [Norwegian Public Service Pension Fund](#)
- [employee benefits](#)

## Salary and conditions

As a PhD candidate (code 1017) you are normally paid from gross NOK 532 200 per annum before tax, depending on qualifications and seniority. From the salary, 2% is deducted as a contribution to the Norwegian Public Service Pension Fund.

The period of employment is 3 years.

Appointment to a PhD position requires that you are admitted to the PhD programme in Engeneering (<https://www.ntnu.edu/studies/phiv>) within three months of employment, and that you participate in an organized PhD programme during the employment period.

The engagement is to be made in accordance with the regulations in force concerning [State Employees and Civil Servants](#), and the acts relating to Control of the Export of Strategic Goods, Services and Technology. Candidates who by assessment of the application and attachment are seen to conflict with the criteria in the latter law will be prohibited from recruitment to NTNU. After the appointment you must assume that there may be changes in the area of work.

It is a prerequisite you can be present at and accessible to the institution daily.

## About the application

The application and supporting documentation to be used as the basis for the assessment must be in English.

Publications and other scientific work must follow the application. Please note that your application will be considered based solely on information submitted by the application deadline. You must therefore ensure that your application clearly demonstrates how your skills and experience fulfil the criteria specified above.

The application must include:

- CV and certificates
- motivation letter
- transcripts and diplomas for bachelor's and master's degrees. If you have not completed the master's degree, you must submit a confirmation that the master's thesis has been submitted
- a copy of the master's thesis. If you recently have submitted your master's thesis, you can attach a draft of the thesis. Documentation of a completed master's degree must be presented before taking up the position
- project proposal (maximum 2 pages) providing the applicant's view of the research challenges related to the PhD position, as well as his/her theoretical or methodological approach
- name and contact information of three referees
- if you have publications or other relevant research work

If all, or parts, of your education has been taken abroad, we also ask you to attach documentation of the scope and quality of your entire education, both bachelor's and master's education, in addition to other higher education. Description of the documentation required can be found [here](#). If you already have a statement from NOKUT, please attach this as well.

We will take joint work into account. If it is difficult to identify your efforts in the joint work, you must enclose a short description of your participation.

In the evaluation of which candidate is best qualified, emphasis will be placed on education, experience and personal and interpersonal qualities. Motivation, ambitions, and potential will also count in the assessment of the candidates.

NTNU is committed to following evaluation criteria for research quality according to [The San Francisco Declaration on Research Assessment - DORA](#).

## General information

[Working at NTNU](#)

NTNU believes that inclusion and diversity is our strength. We want to recruit people with different competencies, educational backgrounds, life experiences and perspectives to contribute to solving our social responsibilities within education and research. We will facilitate for our employees' needs.

NTNU is working actively to increase the number of women employed in scientific positions and has a number of resources to [promote equality](#).

**The city of Ålesund**, with its population of 50 000, will provide you with plenty of opportunities to explore a region of Norway that is famous for its beautiful scenery with high mountains and blue fjords. Ålesund itself, with its Art Nouveau architecture, is by many considered to be the most beautiful city in Norway! The Norwegian welfare state, including healthcare, schools, kindergartens and overall equality, is probably the best of its kind in the world.

As an employee at NTNU, you must at all times adhere to the changes that the development in the subject entails and the organizational changes that are adopted.

A public list of applicants with name, age, job title and municipality of residence is prepared after the application deadline. If you want to reserve yourself from entry on the public applicant list, this must be justified. Assessment will be made in accordance with [current legislation](#). You will be notified if the reservation is not accepted.

If you have any questions about the position, please contact Bartosz Siedziako, telephone 94430658, email [bartosz.siedziako@ntnu.no](mailto:bartosz.siedziako@ntnu.no). If you have any questions about the recruitment process, please contact Synnøve Sunde, e-mail: [synnove.sunde@ntnu.no](mailto:synnove.sunde@ntnu.no).

If you think this looks interesting and in line with your qualifications, please submit your application electronically via [jobbno.no](http://jobbno.no) with your CV, diplomas and certificates attached. Applications submitted elsewhere will not be considered. Diploma Supplement is required to attach for European Master Diplomas outside Norway. Chinese applicants are required to provide confirmation of Master Diploma from [China Credentials Verification \(CHSI\)](#).

**Application deadline: 08.10.2023**

## NTNU - knowledge for a better world

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The Norwegian University of Science and Technology (NTNU) creates knowledge for a better world and solutions that can change everyday life.

### Department of Ocean Operations and Civil Engineering

We aim to be a hub of international knowledge and innovation in maritime operations. This involves education and research on the design of ships and marine equipment as well as on the operation of vessels. Maritime operations integrate technology, human factors and business. The interfaces between these areas often spark inspiration for innovation and new solutions. [The Department of Ocean Operations and Civil Engineering](#) is one of eight departments in [the Faculty of Engineering](#).

## Additional information

### Contact person:

Synnøve Sunde, HR

Phone: | E-mail: [synnove.sunde@ntnu.no](mailto:synnove.sunde@ntnu.no)

### Place of service:

NTNU Ålesund/Campus Ålesund 6009 Ålesund (Ålesund Municipality)