

Bachelor

# Applied Earth Sciences



25%  
Applied Earth Sciences

25%  
Geology

25%  
Physics and Chemistry

25%  
Mathematics

**Have you ever wondered how tunnels or mines are constructed? Are you interested in how you can make use of the Earth's geothermal energy? Or how to monitor processes at or below the surface of the Earth using satellites? Then studying Applied Earth Sciences is a good choice for you! It teaches you to apply and develop engineering approaches for the responsible use and management of the subsurface. Moreover, you will be trained to monitor changes in the subsurface, on the Earth's surface and in the atmosphere using a wide range of technologies.**

Admission requirements	VVO N&T N&G with WiB/Na
Language	English
Number of first year students in 2020	72
Binding Study Advice*	60%
Numerus Fixus	No
Average study week	
12 hours	Lectures
19 hours	Self-study
9 hours	Projects and laboratory classes

\* % of students who get a positive BSA

## What does the programme look like?

Applied Earth Sciences is the only degree programme in the Netherlands that combines geology, engineering and technology. During the programme you will obtain knowledge about the processes that shape the subsurface of our planet. You will also learn to apply that knowledge to tackle challenges related to resource security, responsible extraction of resources, energy transition and climate change adaptation, among many others. Additionally, you will be introduced to the use of satellites to monitor phenomena such as subsidence caused by the extraction of gas, water or salt or, changes to the Earth's surface due to earthquakes.

Because of the focus on the subsurface the programme contains courses in geology and geophysics, teaching you about the processes that shape the Earth. In order to provide you with the required engineering and technological skills you will take courses in physics, chemistry and mathematics.

During the bachelor programme you will not spend all your time attending lectures. You will take laboratory classes, experience fieldwork and participate in tutorials.

As an Applied Earth Sciences student, you will develop critical thinking skills and learn to be an entrepreneurial engineer with the ability to anticipate the future.

# Applied Earth Sciences

## What will you learn?

During the first year you will attain a good foundation in mathematics, physics and chemistry. You will learn about geology and the context of Applied Earth Sciences. This means that you will dive into the challenges related to subsurface engineering and learn how to monitor, manage and mitigate the impact on society and the environment using technology.

In the second year you will continue to develop your technical and geological knowledge and increasingly learn to apply this knowledge. Towards the end of the academic year, you carry out fieldwork in the South of France.

The first half of your third year will consist of a freely selected minor. The minor enables you to broaden your perspective by taking courses outside your specialist field, or to further specialise in a field of your choice.

The second half of the third academic year is spent on finalizing your BSc degree programme. You will do this by taking several courses where knowledge and expertise obtained earlier in the programme are integrated in order to solve real problems. Additionally, you will be working on your final Bachelor assignment. This must be on a topic related to one of the six tracks of the Master's degree programme

in Applied Earth Sciences, which are Applied Geophysics, Environmental Engineering, Geo-Engineering, Geoscience & Remote Sensing, Geo-Energy Engineering and Resource Engineering.

During your study programme, you will have numerous opportunities to get into contact with companies and organisations. These opportunities will allow you to build an international network of professionals.

## What is the profile of an AES student?

You are:

- able to work independently
- full of initiative
- interested in the Earth and responsible/sustainable use of resources
- good at physics and mathematics



**68%**  
male



**32%**  
female

**4.3**



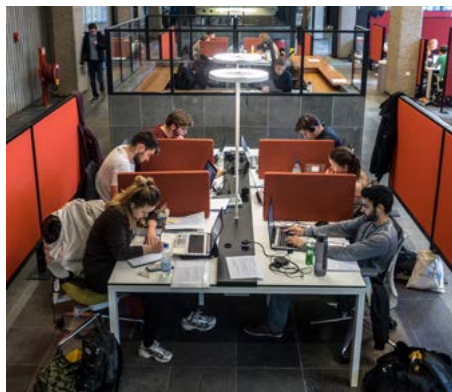
Study atmosphere (NSE 2019), AES

Students describe the atmosphere as a close community in which you have personal contact with other students and staff



**40%**  
International  
students

15+ nationalities  
among staff



**25%**  
Applied Earth  
Sciences

**25%**  
Geology

**25%**  
Physics and  
Chemistry

**25%**  
Mathematics



**100 %**  
of AES students  
go abroad as  
part of their  
programme

## What skills will you obtain?

You learn to

- think critically and independently to solve complex problems
- devise, calculate and research the technical potential of a project
- assess uncertainties and exercise judgement in complex situations with limited information
- work in a multidisciplinary and multicultural team
- develop specialist knowledge pertaining to subsurface engineering

## Courses

Mandatory courses 83%  
Elective courses 17%



**72**  
first year  
AES students  
in 2020