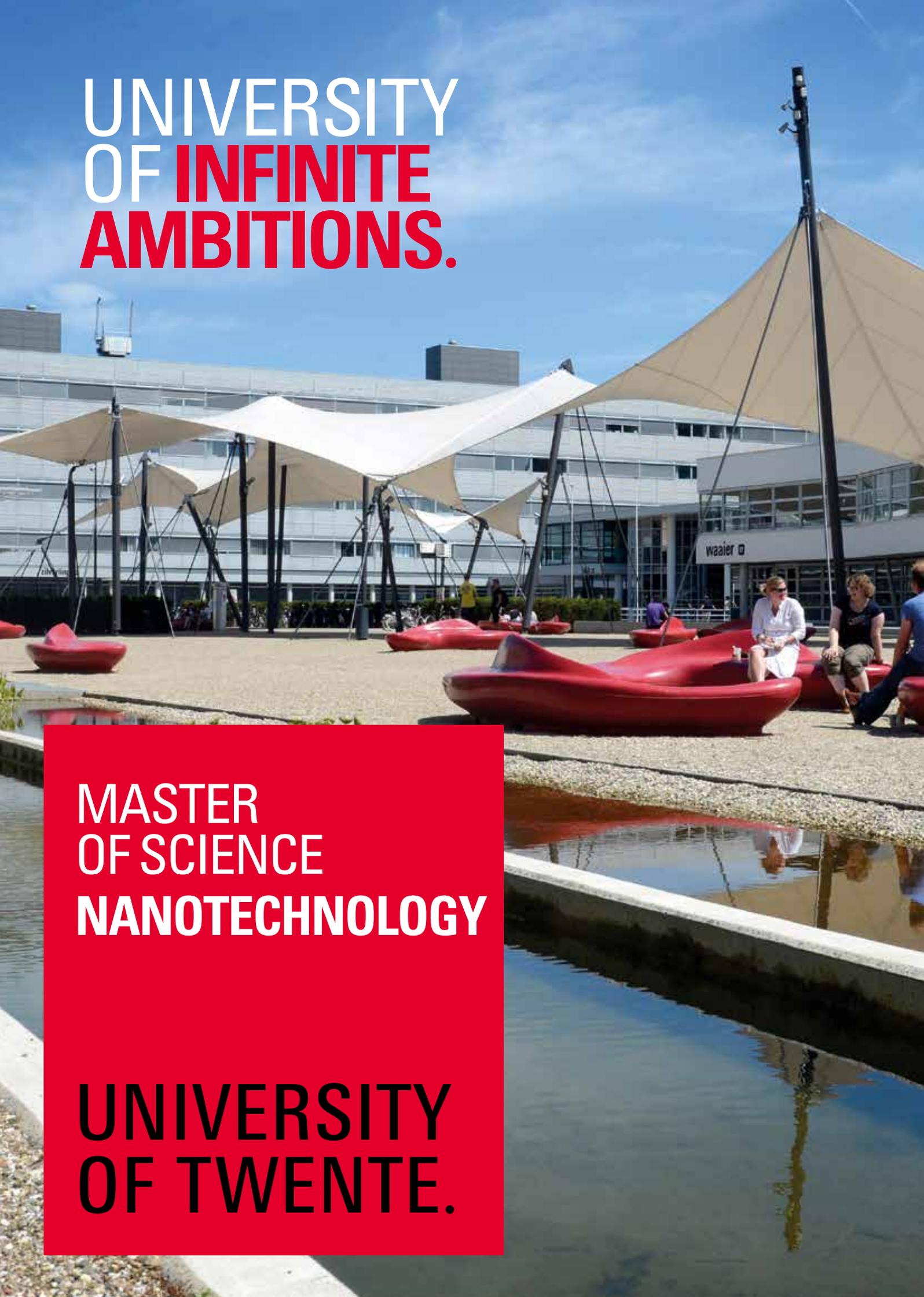
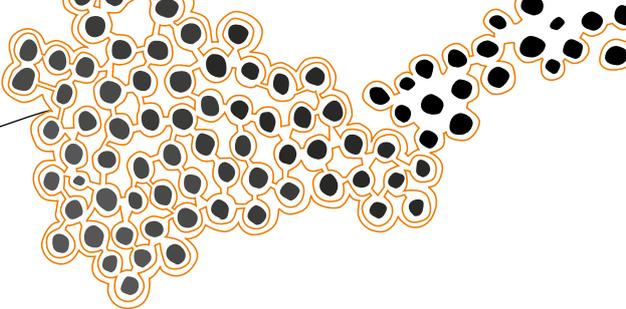


UNIVERSITY  
OF **INFINITE**  
**AMBITIONS.**

MASTER  
OF SCIENCE  
NANOTECHNOLOGY

UNIVERSITY  
OF TWENTE.





# MASTER'S PROGRAMME NANOTECHNOLOGY

The Master's in Nanotechnology is an internationally oriented programme and is taught entirely in English. You can start in September or February. The two-year MSc programme in Nanotechnology focuses on the design, creation and study of functional materials, structures, devices and systems by directly controlling matter on the nanometre scale.

## WHAT IS NANOTECHNOLOGY?

Nanotechnology is an emerging field that brings together elements from traditional disciplines such as applied physics, chemistry, electrical engineering and biology. At the nanoscale, which covers structures that range from 1 to 100 nanometres, the physical and chemical properties of materials undergo quantitative and qualitative changes. The multidisciplinary research field of nanotechnology focuses on these changes with a view to designing and developing functional materials, structures, devices and systems.

Nanomaterials offer an inexpensive and readily available resource with the potential to improve our lives in many ways. Their major implications for the world around us range from solar cells and energy innovations to nanomedicine breakthroughs in medical diagnosis (e.g. lab-on-a-chip).

## THE MASTER'S PROGRAMME IN NANOTECHNOLOGY AT THE UNIVERSITY OF TWENTE

Like the research generally carried out in this field, our Master's programme in Nanotechnology is multidisciplinary. On the one hand, it will offer you the chance to explore different research areas within the wider field of Nanotechnology. On the other, you will be able to specialize in a specific research field of your choice, such as bionanotechnology and nanochemistry, nanophysics or nanosystems and -devices. The programme has a strong focus on the fabrication and

characterization of (functional) nanostructures. It also has a strong research component. This combination will give you the perfect preparation for a career as a researcher. During your Master's programme, you will be able to choose from a wide range of specialized, elective courses in the fields of physics, chemistry, electrical and biomedical engineering. You will also carry out your own design project at one of our renowned research groups. This unique Master's programme offers you access to world-class labs and state-of-the-art facilities, such as our own cleanroom and nanocharacterization lab. The programme's connections with MESA+, one of the world's leading institutes in nanotechnology, means you can be sure of an exciting research environment and the best academic training in the world.

## MESA+ INSTITUTE FOR NANOTECHNOLOGY

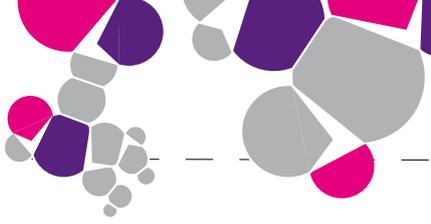
MESA+ is one of the world's largest nanotechnology research institutes, with a total of 500 scientists collaborating on cutting-edge research at the highest level in the fields of materials science, lab-on-a-chip technology, nanophotonics, nanoelectronics and nanofluidics. MESA+ is home to a state-of-the-art NanoLab with a surface area of 1250 m<sup>2</sup>. It is a unique laboratory equipped with a wide variety of technologies capable of developing an almost unlimited number of applications. The MESA+ NanoLab is not the exclusive preserve of academic research: the lab and its equipment are made available to industrial partners for 40% of the time.

## QUICK FACTS

Starting date	<b>1 September or 1 February</b>
Degree	<b>Master of Science</b>
Language	<b>English</b>
Duration	<b>2 years, 120 credits</b>
Website	<b><a href="http://utwente.nl/go/nano">utwente.nl/go/nano</a></b>

## WHY THIS PROGRAMME?

- One-of-a-kind Master's programme
- Multidisciplinary programme
- Top-rated programme
- Close connection to MESA+ Institute of Nanotechnology
- Excellent research facilities
- Opportunity to tailor your programme



# MASTER'S PROGRAMME IN NANOTECHNOLOGY

The two-year Master's in Nanotechnology is a full-time programme worth 120 credits leading to the title of Master of Science (MSc). If you have an Bachelor's degree in Advanced Technology, Chemical Engineering, Applied Physics or another relevant subject, you are welcome to enrol in this Master's programme. It is taught entirely in English.

## YEAR 1

In your first year, you will take a number of specialized courses and practicals, half of which are compulsory core modules. The other modules provide greater freedom of choice: you will select 15 credits' worth of nanotechnology modules and 15 credits' worth of elective courses from a range of relevant MSc programmes, including Applied Physics, Chemical Technology, Biomedical Engineering and Electrical Engineering. The first year of the programme is designed to prepare you thoroughly for your second-year Master's thesis assignment.

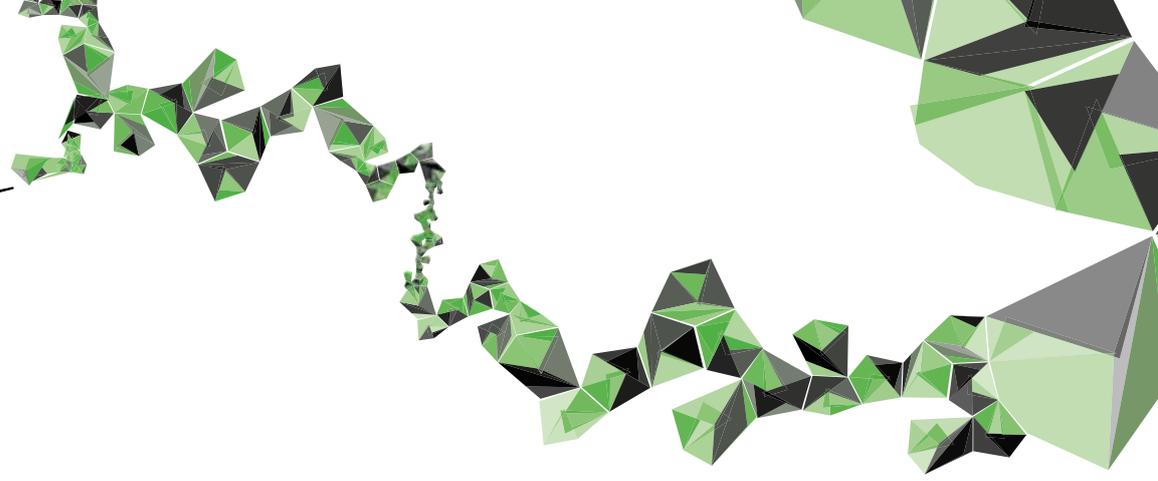
## YEAR 2

In your second year you will focus on a three-month internship and your final Master's thesis assignment. Your internship (15 credits) will be hosted by a nanotechnology company or a research group at another university or an institute active in the field. For the remaining 45 credits, you will conduct a nanotechnology research project within one of the groups at the University of Twente's MESA+ research institute. This project will form the basis of your Master's thesis, which you will defend in front of a committee and a public audience. In recent years our students have completed their projects at the BIOS Lab-on-a-Chip group, the Interfaces and Correlated Electron Systems group, Inorganic Materials Science group, Nanobiophysics group, Physic of Fluids group and the Nanoelectronics group.

## EXCELLENT RESEARCH FACILITIES

The University of Twente is an excellent place to study Nanotechnology. It is home to MESA+, one of the world's leading nanotechnology research institutes, which has an extensive cleanroom facility, specialized labs and excellent research groups. The Master's programme takes full advantage of these state-of-the-art facilities and offers you the best practical courses you can find. Furthermore, the programme works closely with another UT research institute, the MIRA Institute for Biomedical Technology and Technical Medicine, where research into areas such as nanomedicine is carried out.





## CAREER PROSPECTS

A Master's degree in Nanotechnology gives you a wide range of career options. You will be making a very smart move by upgrading your Bachelor's studies in Applied Physics, Chemical Engineering, Electrical Engineering or any other relevant subject with a Master's in the cutting-edge field of nanotechnology

## PHD PROGRAMME

Many of our graduates go on to study for a PhD, with opportunities right here at the UT's MESA+ research institute but also throughout the world. You will conduct independent research for a number of years under the supervision of a senior researcher within a research group, culminating in the public defence of your PhD dissertation.

## COMMERCIAL RESEARCH AND DEVELOPMENT

As an academic field in its own right, nanotechnology has only come to fruition within the past 15 years. More recently, it has spawned high-tech companies that create novel materials and devices for a range of applications in sectors such as energy, water, healthcare and electronics. You could find yourself working in the R&D division of a major high-tech company such as Philips, ASML, DSM or Shell. Alternatively, you could become part of a small spin-off company developing new materials, technologies or products in the field of nanotechnology. A number of companies working in this sector have their roots in MESA+.

## ADMISSION REQUIREMENTS

Applicants for the Master's programme should have a Bachelor's degree or an equivalent qualification from a recognized university or accredited academic institution in a discipline related to that of the Master's programme Nanotechnology such as Advanced Technology, Applied Physics, Chemical Engineering or Electrical Engineering.

## ADDITIONAL REQUIREMENTS:

International students: English-language test results. Academic IELTS, overall band score of at least 6.5, or TOEFL, internet based (TOEFL-iBT) of at least 90, or Cambridge CAE-C (CPE). For the minimum CPGA of your country, please visit our Master's website: [utwente.nl/go/master/country-list](http://utwente.nl/go/master/country-list)

## DUTCH UNIVERSITY OF APPLIED SCIENCES:

You may need to complete a pre-Master's programme first with a maximum of 30 credits.

For more specific admission requirements, please visit our website: [utwente.nl/go/nano](http://utwente.nl/go/nano)

## ELIGIBILITY CHECK

Our eligibility check is designed to assist you as a student holding a non-Dutch diploma. It will give you an indication of your eligibility to be admitted to the master's programme Nanotechnology. The check will take about five minutes to complete. Please note that this is not part of the official admission procedure. No rights can be obtained from the outcome of the eligibility check.

Check your eligibility: [utwente.nl/go/nano/eligibility-check](http://utwente.nl/go/nano/eligibility-check)