Everyday products like processed foods, medicines and electronics are the result of outstanding fundamental molecular design and ingenious process engineering techniques. Chemical Engineering is the key discipline in the development of chemical products and processes to fulfil society's current and future needs, and covers a wide range of subjects from the molecular level to large-scale chemical manufacturing processes.

Programme
The Master of Science programme in Chemical Engineering at Delft University of Technology (TU Delft) provides students with the knowledge, insights and skills they need to become independent and responsible researchers and engineers in the field. The programme operates hand in hand with the university's Chemical Engineering research groups and for decades has been educating students who upon graduation are in high demand by the chemical industry and academia. Chemical Engineering at Delft aims for the highest quality standards in teaching and research and has a rich heritage spanning 125 years. The programme places a strong emphasis on innovative thinking and stresses multidisciplinary problem-solving using a systematic approach, incorporating considerations of sustainability, economics and social welfare into the analytical process.

Personalisation
The programme offers many personalisation opportunities. For example, in the first year students can compose their own program of advanced chemical engineering courses and chemical engineering elective courses, within which the faculty makes recommendations under 4 different 'Science & Engineering' orientations. These recommendations are intended to help students align their programme with their personal chemical engineering interests, however students are free to select their own elective combinations. The Science & Engineering orientations are:
· Circularity: Circular processes require the design of new reactions and catalysts to solve problems such resource scarcity and waste production.
· Energy: Efficient conversion of energy requires fundamental developments in materials science to achieve more efficient solar cells and energy storage technologies.
· Health: Bioengineering technologies can contribute to improving health; including processed foods, biocompatible materials, antibiotics or nanomedicines.

· Nuclear: Nuclear technologies can both play a key role in reducing carbon dioxide emissions and in the development of medically relevant radionuclides, spectroscopy and therapy.

The second year consists of the master thesis project and a ‘Professional & Societal’ orientation, allowing students to incorporate a selection of the following into their programme:

· Research and Development: which includes an industrial internship and additional electives;

· Science and Technology: a second, external research project and additional electives or extension of the master thesis project;

· Management of Technology: a course looking at technology as a corporate resource;

· Education: a course for chemistry education at secondary level;

· Study abroad: one semester at one of our partner universities.

For more information see the Chemical Engineering masters website: tudelft.nl/msc/chem

Experiences

“The programme is designed to ensure that students gain all the necessary skills through working on multi-cultural group projects in a team environment as well as conducting independent research work.” Abinaya Arunachalam (second year student)

"During my thesis work, I discovered how urgent it is to find new energy storage solutions and the many challenges to the extensive use of renewable energies that exist within this field.” Nadia Boulif (Winner of Unilever Research Prize 2020, currently a PhD student in Eindhoven)

"I chose this programme because it is one of the best Chemical Engineering programmes in the world. I aspire to work for an engineering firm like Worley, Fluor or Bilfinger Tebodin, being involved in projects for various chemical companies. My principal interests in those projects would be sustainability, safety and process control, fortunately all aspects that are touched upon in the process design courses.” Guido Hartog (second year student)

Career prospects

The great majority of our graduates are employed shortly after or even before receiving their diploma. Working environments where the majority of our graduates operate are industries in The Netherlands and elsewhere. Just to name few of the most popular employers of our graduates: Shell, AkzoNobel, DSM, Exxon Chemical, Heineken, ING, BASF, Philips, Procter & Gamble, ASML and Unilever and the list goes on… Others have joined consultancy firms, work in the public sector, are active in non-profit organisations, join academia and become professors or have started their own businesses. The possibilities are endless.

Student profile

Graduates with a BSc in Chemical Engineering from the Technical Universities of Groningen, Twente or Eindhoven, or Molecular Science and Technology (MST, technology or materials track) from Delft /Leiden are eligible for direct admission (MST-materials track with homologation courses). Graduates with a Dutch BSc in MST(chemistry track), Chemistry, Life Science and Technology, Applied Earth Sciences, Applied Physics, Mechanical Engineering and Aerospace Engineering may be admitted through a bridging programme. For graduates from a Dutch University of Applied Sciences (HBO) to be considered for admission to the Bridging Programme, they must hold (or expect soon to obtain) the Bachelor’s degree Chemical Engineering (Chemische Technologie) or equivalent in addition to having a GPA of at least 75% and have spent no more than four years for the Bachelor.

Admission to the bridging programmes are subject to consideration that go beyond simply a GPA. Information regarding admission can be obtained by sending an email to the programme coordinator of the Master’s Programme (Jolanda Quak, coordinator-ce@tudelft.nl).

Career perspective

90% find a job within 6 months

8/10 as rated by Alumni

6th in Europe

QS World University Ranking for Chemical Engineering

13th Worldwide 2019

30-50% international students