

# Master of Chemistry

2024-2025

Think - Create - Solve  
Study **Chemistry**  
in Antwerp





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## Chemistry and Antwerp: a strong bond!



### In brief

The Master of Chemistry focuses on **research and development**.

The proximity of the large chemical industry and the Port of Antwerp creates perfect circumstances to offer an internationally oriented Master's programme. Professors and guest speakers from industry share **knowledge and experience** drawing from their own daily practice in **business and research**. This will give you direct insight into **how chemistry is interwoven with different economic sectors** in our society and what your role can be.

In addition, you will have the opportunity to do an internship to strengthen the connection between your academic education and your **future professional life**.

## In detail

Through the wide range of elective courses you can focus your programme on one of the **subdisciplines of chemistry**. Your Master's thesis enhances your analytical and processing skills through exposure to high-level research environments.

### Highlights of this Master's programme:

- Compose your programme based on your **interests**
- Courses take place in **small groups**
- Taught by **specialists** from industry
- Combination of excellent education and high-level research.



## Programme structure

### Learning outcomes

- 1** The Master in Chemistry is able to **independently situate and evaluate a scientific problem** and to formulate a question. They have has the knowledge and skills to answer these questions within the context of the current level of scientific knowledge.
- 2** Their scientific knowledge allows the Master in Chemistry to **draft a problem-solving strategy of theoretical calculations and/or experiments**. They have has the skills to execute this systematically.
- 3** Within the discipline as well as within an interdisciplinary context, the Master in Chemistry can **lead or perform experiments** in order to obtain data and process these into new insights.



- 4 The Master in Chemistry can synthesise a complex, possibly incomplete series of (multidisciplinary) data in order to **come to a well-considered evaluation of a chemical problem**.
- 5 The Master in Chemistry is aware of the line between objectivity and subjectivity, of the possibilities and the limitations set by technology and knowledge. They **act as a thinking and reflecting scientist** in all their activities.
- 6 The Master in Chemistry has a sense of professional responsibility as a scientist and will try **to contribute to the development of general knowledge** by using their capacity for originality and creativity.
- 7 The Master in Chemistry is able to independently perform scientific research at the level of junior researcher and so develop and **sharpen their research skills**. Alternatively, the Master in Chemistry can independently use their scientific knowledge at the level of a junior professional and autonomously acquire additional insights and skills that are relevant to the situation.
- 8 The Master in Chemistry has a thorough **knowledge** of and insight in the **behaviour and characteristics of chemical compounds and materials** and in the way in which they can be analysed and synthesised.

- 9 The Master in Chemistry has a **sense of social responsibility**: they can relate chemistry to the social, ethical and technological aspects of society and they can estimate the consequences of their own and other's chemical actions.
- 10 The Master in Chemistry can **summarise, communicate and interpret in English their findings on chemical questions** on different levels: to peers, to a large audience and to policy makers.
- 11 Based on their knowledge and insight in the different chemical sub-disciplines the Master in Chemistry can autonomously **specialise in research or start a career in the chemical industry, with the government or in (higher) education**.
- 12 The Master in Chemistry has the attitude to **keep following the scientific evolution in chemistry** (or in their own sub-discipline) in order to maintain their professional level and direct their own lifelong learning curve.
- 13 The Master in Chemistry has **international and intercultural skills** in order to function in an international context.





## Curriculum

### Year 1

<b>Compulsory courses</b>	<b>ECTS credits 18</b>
Chemical Reaction Engineering	3
Chemometrics, Lab Accreditation and Quality Management	3
Dynamic Processes at Surfaces	3
Heterogenous Catalysis	3
Homogenous Catalysis	3
Safety and Transportation	3

### **Profiling space** **ECTS credits 6**

During year 1 of the Master's programme, the student needs to complete one profiling space (either the cluster Industry or the cluster Applied Chemistry) for a total of 6 credits

#### **A. Cluster Industry**

Automation	3
Chemical Process Engineering 1	3
IP, HRM and Communication	3
Environmental and Social Legislation	3

#### **B. Cluster Applied Chemistry**

Biotechnology	3
Chemistry of Food Stuffs	3
Medicinal Chemistry	3
Metallurgy and Recycling of Metals	3

### **Elective courses** **ECTS credits 6**

To be chosen from a list of 13 electives  
(Please consult the course catalogue on [www.uantwerpen.be/master-chemistry](http://www.uantwerpen.be/master-chemistry))

### **Internship** **ECTS credits 30**

#### **Option 1: Industrial Internship - Elective courses**

The student combines the industrial internship (15 ECTS credits) of elective courses to be chosen from a list of 9 electives (Please consult the course catalogue on [www.uantwerpen.be/master-chemistry](http://www.uantwerpen.be/master-chemistry))

## Option 2: International Research Internship

### Year 2

#### Compulsory courses ECTS credits 6

Applied Polymer Chemistry	3
Physical Organic Chemistry	3

Profiling space ECTS credits 6

During year 2 of the Master's programme, the student needs to complete one profiling space (either the cluster Industry or the cluster Applied Chemistry) for a total of 6 ECTS credits

#### **A. Cluster Industry**

Automation	3
Chemical Process Engineering 1	3
IP, HRM and Communication	3
Environmental and Social Legislation	3

#### **B. Cluster Applied Chemistry**

Biotechnology	3
Chemistry of Food Stuffs	3
Medicinal Chemistry	3
Metallurgy and Recycling of Metals	3

#### Elective courses ECTS credits 6

To be chosen from a list of 13 electives  
(Please consult the course catalogue on  
[www.uantwerpen.be/master-chemistry](http://www.uantwerpen.be/master-chemistry))

#### Master's thesis ECTS credits 30

Master's thesis incl. internship in a research group

## Job opportunities

The Master of Chemistry at the University of Antwerp provides you with interesting job opportunities to suit your expectations. Belgium is an important worldwide hub of chemical industry. More specifically, Antwerp hosts the second largest (petro-)chemical cluster in the world, next only to Houston (USA). Both large multinationals as well as small and medium-sized enterprises hire many chemists. These companies need thousands of new recruits to keep their businesses running. A Master of Chemistry is a much sought-after asset and most graduates quickly find an interesting job in this sector.

Besides working in chemical industry, you have many other options. The university may be the ideal location to start your career with a PhD in one of our research groups. In addition, governmental bodies are always looking for well-educated chemists to maintain food or water control processes and to set out guidelines for environmental protection or air quality monitoring.



## Why choose UAntwerp

Our university is located in the **city of Antwerp**, in the heart of Belgium and Europe. The port of Antwerp is one of the biggest in the world. Antwerp is not just an ancient medieval and baroque city, full of history. It is also a bustling metropolis with a vibrant social scene, impressive architecture and cultural contrasts. Over 170 nationalities live here, more than in New York! This cosmopolitan vibe is also reflected at the University of Antwerp.

**First-rate research and education** make the University of Antwerp a wonderful place to study and to work. We foster the nexus between research and education. Internationalisation is key to our mission. It is no coincidence that the University of Antwerp is a partner in a highly promising European University Network, the Young Universities for the Future of Europe [www.YUFE.eu](http://www.YUFE.eu).

As home away from home to over **20,000 students**, the University of Antwerp prides itself on operating on a human scale. Our faculty and staff will welcome you into top-notch infrastructure on one of our four campuses. While you're here you are also invited to enjoy our vibrant cultural programme, sports facilities and many student services.

The University of Antwerp scores extremely well in Young University Rankings



## Admission criteria

Students with degrees from outside the Flemish community: All Bachelor's degrees in the field of Science and Applied Sciences that have a strong focus on chemistry will be considered by the Board of Admission.

Students with diplomas of the **Flemish community**:

— Holders of the diploma Bachelor of Chemistry get **direct admission**.

— Holders of an academic Bachelor's or Master's degree in Exact or Applied Sciences can get admission **after permission**.

Since the programme is taught in **English**, candidates with a prior degree issued outside Belgium, the Netherlands or Luxembourg are required to demonstrate their proficiency in English. They can do so in two ways:

— Either by submitting a **language certificate** showing their TOEFL, IELTS or ITACE results (the level required can be checked on [www.uantwerpen.be/master-chemistry](http://www.uantwerpen.be/master-chemistry))

— Or by **submitting proof** they have studied at least one academic year (or 60 ECTS credits) in an English-language Bachelor's or Master's programme.

Please note that the Board of Admission may still ask for additional proof of proficiency in English.

## Application procedure

Candidates with a **Bachelor's** or **Master's degree** in Chemistry from a higher education institution in Belgium, the Netherlands or Luxembourg can enrol directly. Candidates who do not fulfil this condition or who need a visa must submit an online application through the online application tool **MobilityOnline**. Applications for the academic year 2024–2025 can be started in Mobility Online from 9 November 2023 onwards.

### Application deadlines

To submit an application through Mobility Online

For non-EEA \* nationals and for students who need a visa: **before 1 March 2024**

For EEA nationals: **before 1 June 2024**

### Enrolment deadline

4 October 2024

Enrolments start on 1 July 2024.

The academic year 2024–2025 starts on Monday 23 September 2024.

\* **EEA** = European Economic Area

**Member states:**

Austria, Belgium, Bulgaria, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hungary, Iceland, Ireland, Italy, Latvia, Liechtenstein, Lithuania, Luxemburg, Malta, the Netherlands, Norway, Poland, Portugal, Romania, Slovenia, Slovakia, Spain and Sweden

## ECTS credits

The University of Antwerp applies the '**European Credit Transfer and Accumulation System**' (ECTS) in all its degree programmes.

A full-time one-year study programme amounts to **60 ECTS credits** (30 ECTS credits per semester), which implies a student workload of about 1500 to 1800 hours. One ECTS credit stands for 25 to 30 hours of work including contact hours, preparatory work, study and assessment.



## Quick facts

### Level

Master

### Language

English

### Credits

120 ECTS credits

### Number of years

2

### Tuition fee per year \*

EUR 1092.10 for EEA nationals

EUR 5800 for non-EEA nationals

### Campus

Campus Drie Eiken and  
Campus Groenenborger

### Faculty

Science

### More information

[www.uantwerpen.be/  
master-chemistry](http://www.uantwerpen.be/master-chemistry)



\* subject to yearly revision

## Contact

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