

MASTER IN CHEMISTRY

MAIN SUBJECTS: (BIO)ORGANIC AND POLYMER CHEMISTRY • ANALYTICAL AND ENVIRONMENTAL CHEMISTRY • MATERIALS AND NANO CHEMISTRY

MINORS: RESEARCH AND DEVELOPMENT • INDUSTRY AND MANAGEMENT

120 ECTS CREDITS – LANGUAGE: ENGLISH – DEGREE: MASTER OF SCIENCE

This course is offered jointly by Ghent University (UGent) and the Vrije Universiteit Brussel (VUB). Their expertise is combined and the students have a more elaborate choice of majors, elective courses, thesis subjects, etc.
An equivalent programme taught in Dutch is available at the VUB.

COURSE CONTENT

We owe a great part of our quality of life to the development of sciences, chemistry in particular. Its influence can be found in numerous different branches, such as medicine, biology, agriculture, etc. The chemical impact is also omnipresent in the industrial world. Almost every branch has to do with chemistry at some level: in the production process, in quality control, in product improvement, waste processing ...

It can be assumed that chemistry will continue to play an essential role in future developments of society. Indeed, innovation and the development of new products and processes with an added value are simply impossible without a fundamental knowledge of sciences, the structure of molecules and insight into molecular processes and reactions.

COURSE STRUCTURE

The two-year master's programme (120 credits) consists of 108 credits related to the main subject (30 credits general courses, 12 credits specialisation courses, 6 credits professional skills, 30 credits master thesis, 30 credits internship) and 12 credits elective courses.

The students can choose from three main subjects:

- (Bio)organic and Polymer Chemistry
- Materials and Nano Chemistry
- Analytical and Environmental Chemistry.

(Bio)Organic and Polymer Chemistry provides training in organic chemistry at large. The program includes compulsory classes on organic and polymer chemistry and on molecular structure analysis and provides students the opportunity to specialize in organic synthesis and analysis, polymer chemistry or bio-related chemistry. Students will carry out research projects and internships with world leading research groups and chemical, biochemical or pharmaceutical companies.

Materials and Nanochemistry provides training in all aspects of materials chemistry, with a focus on properties related to nanoscale dimensions. The program includes compulsory classes on the chemistry, physics and analysis of materials and provides students the opportunity to specialize in catalytic, ceramic or optoelectronic materials. Students can choose a more experimental or a more theoretical approach to materials and nanochemistry, and they will carry out research projects and internships with world leading research groups and companies in materials science.

Analytical and Environmental Chemistry covers a whole range of analytical techniques including advanced chromatography, elemental and isotope analyses, nutrient and organic pollutant analysis. Examples of studies include natural and disturbed processes in water, sediments and atmosphere. A variety of analytical techniques are used, and new sampling and measuring techniques are designed, tested, refined and optimised.

In the second year, a research project (master's dissertation) is scheduled. The topic of the master's dissertation is in accordance with the chosen main topic. The master's dissertation is an original piece of research work. It aims to develop and strengthen the research capacity skills of the students. The student selects a topic and is given guidance by a promotor or supervisor. The master's dissertation consists of a literature review part, practical research and an original analysis of the topic. Students have the possibility to do a part of their master's dissertation abroad.

The internship (academic or industrial) is the final part of the master curriculum and will give the student the opportunity to apply the learned knowledge to an international research or non-academic context. This will allow to develop further practical skills that cannot be taught in the classroom. The student will experience working in an international research environment or in a professional environment of an industrial company or a non-academic research institute.

If you want to combine your master's degree with a teacher's degree, then there is the option of following an 'Educatieve master' instead of the above described master. The 'Educatieve master' however is a Dutch taught programme. More information can be found on www.ugent.be/educatievemaster.

CAREER PERSPECTIVES

It is a fact that chemistry is involved in several industrial branches, important for the economy and employment, such as chemical industry, pharmaceutical industry, agriculture ... Thanks to the broadness of the scientific programme, master graduates in chemistry are fit to apply for jobs in different sectors of industry and their possibilities on the job market are very diverse. Masters in chemistry can for instance be involved in scientific research, product development, quality control ... or they can take on managerial functions, and this in companies as well as in government institutions. Besides that, they are also well prepared for a career in the public sector (including education). The most important assets of university graduated chemists are that they are research minded, have good problem solving capacities and that they are polyvalent.

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TOELATINGSVOORWAARDEN TOT AFSTUDEERRICHTING ANALYTICAL AND ENVIRONMENTAL CHEMISTRY VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Rechtstreeks:

- Ba chemie

Via voorbereidingsprogramma:

- Ba biochemie en biotechnologie
- Ba geologie
- Ba archeologie
- Ba bio-industriële wetenschappen
- Ba bio-ingenieurswetenschappen
- Ba biomedische wetenschappen
- Ba conservatie en restauratie
- Ba farmaceutische wetenschappen
- Ba industriële wetenschappen: chemie
- Ba ingenieurswetenschappen: afstudeerrichting chemische technologie en materiaalkunde

Via schakelprogramma (61 sp):

- professionele Ba chemie

TAAL

Je voldoet aan de taalvoorwaarden op basis van je Vlaams diploma.

TOELATINGSVOORWAARDEN TOT AFSTUDEERRICHTING (BIO)ORGANIC AND POLYMER CHEMISTRY VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Rechtstreeks:

- Ba chemie

Via voorbereidingsprogramma:

- Ba biochemie en biotechnologie
- Ba bio-ingenieurswetenschappen, afstudeerrichting chemie en voedingstechnologie
- Ba biomedische wetenschappen
- Ba farmaceutische wetenschappen
- Ba industriële wetenschappen: chemie
- Ba ingenieurswetenschappen: afstudeerrichting chemische technologie en materiaalkunde

Via schakelprogramma (61 sp):

- professionele Ba chemie

TAAL

Je voldoet aan de taalvoorwaarden op basis van je Vlaams diploma.

TOELATINGSVOORWAARDEN TOT AFSTUDEERRICHTING MATERIALS AND NANO CHEMISTRY VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Rechtstreeks:

- Ba chemie

Via voorbereidingsprogramma:

- Ba fysica
- Ba fysica en sterrenkunde
- Ba bio-ingenieurswetenschappen, afstudeerrichting chemie en voedingstechnologie
- Ba industriële wetenschappen: chemie
- Ba ingenieurswetenschappen, afstudeerrichting chemische technologie en materiaalkunde
- Ba ingenieurswetenschappen: toegepaste natuurkunde

Via schakelprogramma (61 sp):

- professionele Ba chemie

TAAL

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PRAKTISCHE INFORMATIE

Studieprogramma:

<https://studiegids.ugent.be>

> faculteiten > opleidingstypes > ga naar de opleiding van je keuze

Infomomenten

Masterbeurs

www.ugent.be/masterbeurs

Trajectbegeleiding

Beata De Vliegheer

T 09 264 50 53 – beata.devliegheer@ugent.be

Meer info

Afdeling Studieadvies – Campus Ufo, Ufo,
Sint-Pietersnieuwstraat 33, 9000 Gent, T 09 331 00 31
studieadvies@ugent.be – www.ugent.be/studieadvies

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2020–21

WE04

ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

The course is open to students with at least a bachelor's degree in the field of chemistry with minimum 180 credits.

LANGUAGE

More information regarding the required knowledge of English:
www.ugent.be/specificlanguage

PRACTICAL INFORMATION

Study programme:

www.ugent.be/coursecatalogue
> by Faculty > Programme types > select your programme

Application deadline for international degree students

- for students who need a visa: 1st of March
 - for students who do not need a visa: 1st of June
- www.ugent.be/deadline

Enrolling institution

Ghent University

Tuition fee

More information is to be found on:
www.ugent.be/tuitionfee

Last update: May 2020.

Contact

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