ENROLMENT REQUIREMENTS MASTER OF CHEMICAL AND MATERIALS ENGINEERING 2023-2024

In order to be eligible to take a course, you usually have to meet certain enrolment requirements. These requirements can be both pre- and corequisites. The requirement may be blocking or advisory in nature. At the VUB, there are 4 types of enrolment requirements:

1. Binding prerequisite
2. Advisory prerequisite
3. Binding corequisite
4. Advisory corequisite

Below you will find the definition of the different types of enrolment requirements. Check out the specific enrolment requirements for your programme on the next page.

BINDING PREREQUISITE

Due to certain risks and safety issues, you can only enrol in course X if you have passed, been exempted from or deliberated for course Y. It is not possible to register for courses if you do not meet the binding prerequisite.

ADVISORY PREREQUISITE

The curriculum council strongly recommends that you only enrol in course X if you have taken course Y. Although this prerequisite is not binding and it is possible to register for course X without having taken course Y, it is your own responsibility not to follow the programme's advice. This means that you do not have the required competencies.

BINDING COREQUISITE

You can only enrol in course X if you are also simultaneously registered for (or have already passed/been exempted from) course Y. In order to achieve the learning results of course X in a safe/good way, a registration for course Y is necessary. It is not possible to register for courses if you do not meet the binding corequisite.

ADVISORY COREQUISITE

The curriculum council strongly recommends that you only enrol in course X if you are simultaneously registered for (or have already passed/been exempted from) course Y. Although this corequisite is not binding and it is possible to register for course X without simultaneously taking course Y, it is your own responsibility not to follow the programme's advice. This means that you do not have the required competencies.

HAVE A LOOK AT THE ENROLMENT REQUIREMENTS FOR YOUR PROGRAMME

VRIJE UNIVERSITEIT BRUSSEL

Enrolment requirements Master of Chemical and Materials Engineering (120 ECTS-credits) 2023-2024

PROFILE MATERIALS YEAR 1(60 ECTS)							
Course title	**Sem**	**ECTS**	**Binding prerequisite**	**Advisory prerequisite**	**Binding corequisite**	**Advisory corequisite**	**Additional requirements**
Compulsory common courses (41 ECTS)							
Molecular structural characterization and analysis	1	5					
Electrochemistry	1	4					
Parameter estimation and modeling	1	5					
Microstructural design and characterization of inorganic materials	1	6					
Surface treatment: processing and analysis	1	4					
Unit operations	1	7					
Organic chemistry: reactions and mechanisms	2	4					
Polymer materials	2	6					
Common core project (5 ECTS)							
Project: Process technology	2	5					
Project: Multifunctional materials	2	5					
Project: Development cooperation project	1+2	5					
Project: Team leader project	1+2	5					
Compulsory specific courses (14 ECTS)							
Advanced materials	2	4					
Production of metals	2	3					
Ceramics	2	4					
Mechanics of materials	2	3					

PROFILE MATERIALS YEAR 2 (60 ECTS)							
Course title	**Sem**	**ECTS**	**Binding prerequisite**	**Advisory prerequisite**	**Binding corequisite**	**Advisory corequisite**	**Additional requirements**
Compulsory common courses (34 ECTS)							
Environmental technology	1	3					
Biotechnology: from biomolecules to biofabrication	1	3					
Reliability and risk analysis of industrial installations	1	4					
Master thesis	1+2	24					Only for students who are able to graduate
Compulsory specific courses (13 ECTS)							
Sustainability of materials	1	5					
Forming of metals	2	4					
Polymers: rheology and processing	2	4					
Elective specific coures (3 ECTS)							
Experimantal techniques for characterization of construction materials	1	3					
Materials selection	1	3					

Elective coures (10 ECTS)							
Option 1: Internship							
Internship	1+2	10					
Option 2: Elective courses							
Fuel cells and batteries	1	4					
Internship 40 days	1	6					
Manufacturing technology I	1	3					
Experimental techniques for characterization of contruction materials	1	3					
Molecular nanosystems: from principles to applications	2	3					
Micro- and nanobiotechnology	2	3					
Sustainable chemical processes	2	4					
Enviromental engineering: current methods and practices	2	3					
Recycling of inorganic materials	2	5					
Manufacturing technology II	2	3					
Engineering aspects of circular economy	2	5					
Hetrogeneous catalysis	2	4					
Nanochemistry and -technology	2	4					
Advanced thermal analysis	2	3					
Biocompatible and nanostructured materials	2	5					
Option 3: Entrepreneurship							
Business management and entrepreneurship	1	3					
Entrepreneurship	1	3					
Business aspects of technology: factory of the future	1	3					
Logistics and quality engineering	2	5					
Innovation strategy	2	5					
Management and sustainable development: constraints and opportunities	2	5					
Seminar of emerging technologies	2	5					
Entrepreneurial ecosystems	2	5					
IP management and technology transfer	2	5					
English for professional purposes	1+2	5					
Technological business development project - EUTOPIA learning unit	1+2	3					
Technological business development project - EUTOPIA learning unit	1+2	6					

PROFILE PROCESS TECHNOLOGY YEAR 1(60 ECTS)							
Course title	**Sem**	**ECTS**	**Binding prerequisite**	**Advisory prerequisite**	**Binding corequisite**	**Advisory corequisite**	**Additional requirements**
Compulsory common courses (41 ECTS)							
Molecular structural characterization and analysis	1	5					
Electrochemistry	1	4					
Parameter estimation and modeling	1	5					
Microstructural design and characterization of inorganic materials	1	6					
Surface treatment: processing and analysis	1	4					
Unit operations	1	7					
Organic chemistry: reactions and mechanisms	2	4					
Polymer materials	2	6					
Common core project (5 ECTS)							
Project: Process technology	2	5					
Project: Multifunctional materials	2	5					
Project: Development cooperation project	1+2	5					
Project: Team leader project	1+2	5					
Compulsory specific courses (14 ECTS)							
Heterogeneous catalysis	2	4					
Sustainable chemical processes	2	4					
Modeling and design of multiphase systems and reactors	2	6					

PROFILE PROCESS TECHNOLOGY 2 (60 ECTS)							
Course title	**Sem**	**ECTS**	**Binding prerequisite**	**Advisory prerequisite**	**Binding corequisite**	**Advisory corequisite**	**Additional requirements**
Compulsory common courses (34 ECTS)							
Environmental technology	1	3					
Biotechnology: from biomolecules to biofabrication	1	3					
Reliability and risk analysis of industrial installations	1	4					
Master thesis	1+2	24					Only for students who are able to graduate
Compulsory specific courses (13 ECTS)							
Simulation and design tools	1	4					
(Bio)Chemical process design and control	2	4					
Design of chemical plants	2	5					
Elective specific coures (3 ECTS)							
Micro- and nanobiotchnology	2	3					
Molecular nanosystems: from principles to applications	2	3					

Elective coures (10 ECTS)							
Option 1: Internship							
Internship	1+2	10					
Option 2: Elective courses							
Internship 40 days	1	6					
Manufacturing technology I	1	3					
Experimental techniques for characterization of contruction materials	1	3					
Materials selection	1	3					
Fuel cells and batteries	1	4					
Recycling of inorganic materials	2	5					
Enviromental engineering: current methods and practices	2	3					
Ceramics	2	4					
Manufacturing technology II	2	3					
Engineering aspects of circular economy	2	5					
Nanochemistry and -technology	2	4					
Biocompatible and nanostructured materials	2	5					
Advanced thermal analysis	2	3					
Option 3: Entrepreneurship							
Business management and entrepreneurship	1	3					
Entrepreneurship	1	3					
Business aspects of technology: factory of the future	1	3					
Logistics and quality engineering	2	5					
Innovation strategy	2	5					
Management and sustainable development: constraints and opportunities	2	5					
Seminar of emerging technologies	2	5					
Entrepreneurial ecosystems	2	5					
IP management and technology transfer	2	5					
English for professional purposes	1+2	5					
Technological business development project - EUTOPIA learning unit	1+2	3					
Technological business development project - EUTOPIA learning unit	1+2	6					