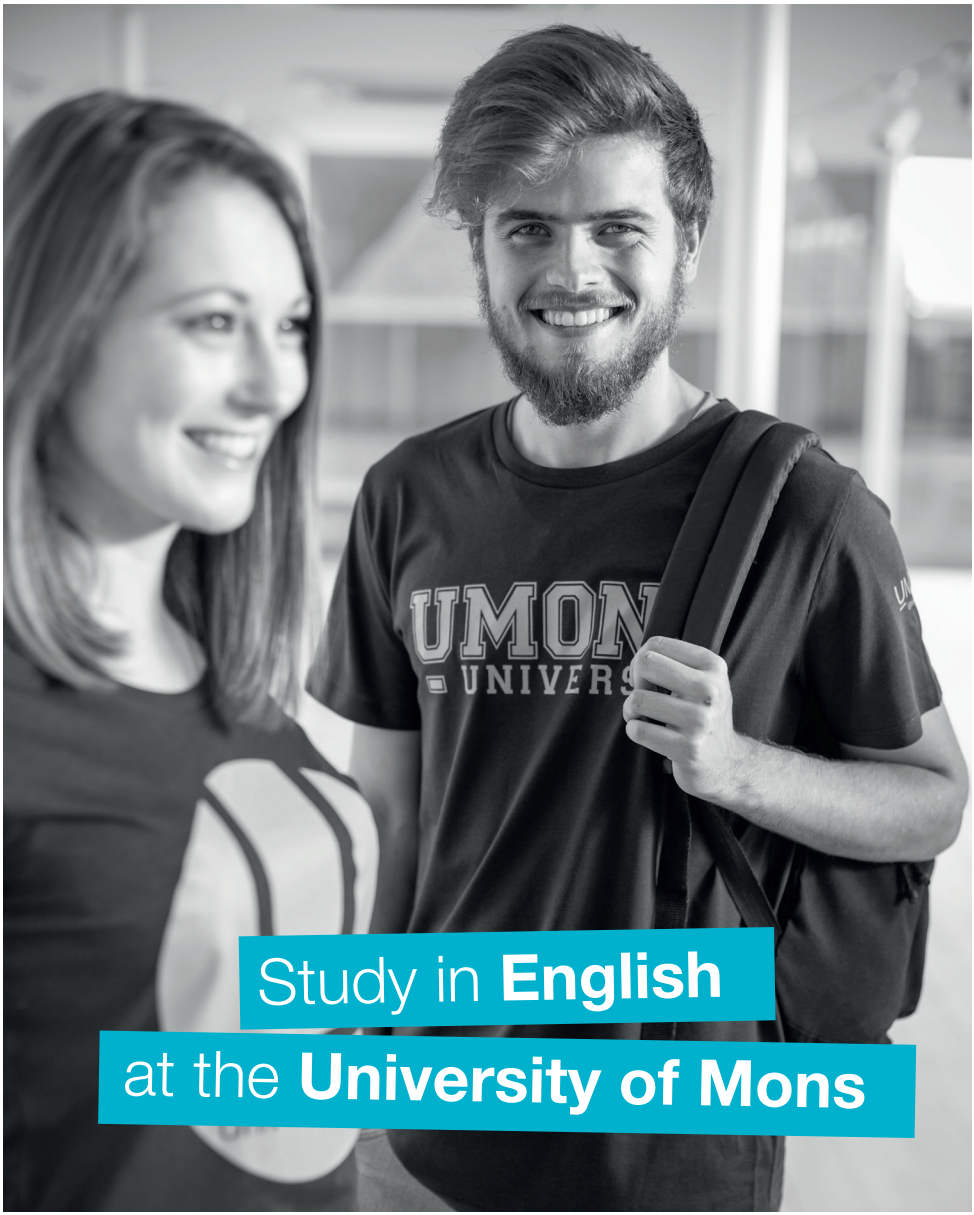
UMONS

University of Mons



Study in English at the University of Mons

Belgium and the city of Mons

Belgium is Europe in a nutshell: multilingual and multicultural. Known all over the world for its gourmet chocolate and its large collection of beers, this small country also excels in science, technology, and cultural activities. Its strategic location at the heart of Europe means that the country has always benefitted from foreign influence, and its 11 million nationals are welcoming, hospitable and cosmopolitan.

Mons is an ancient town with 96,000 inhabitants, and is a major university centre with more than 10,000 students. Named Cultural Capital of Wallonia in 2002, the City of Mons was then elected to be the European Capital of Culture in 2015. Mons is easily accessible from Brussels Airport and Charleroi Airport. The city is ideally located between Brussels and Paris, it is close to the French border, and the French and British capitals can be reached in less than 3 hours.

The University of Mons

The University of Mons (UMONS) has 7 faculties, 3 schools, 10 research institutes, and 3 partner research centres. It operates on two campuses, the main one, first established in 1837, located in Mons, and a second one in Charleroi.

The University has facilities spread throughout the historical heart of the city of Mons, forming an urban campus. With one thousand instructors, researchers, and scientists, for a population of over 9,000 students, UMONS has a staff-to-student ratio that allows students to build great working relationships with instructors during their time here.

Course programme

Most of the courses are taught in French and a stay at UMONS is an excellent opportunity to improve your French language skills. This can obviously be done through your linguistic immersion, as you will do many everyday things in a French-speaking environment, but UMONS also organises language courses throughout the academic year. Students take a placement test to determine their initial levels, so that they can join the appropriate group, allowing them to meet their personal goals. These courses are complimentary for students enrolled on a mobility programme at UMONS. These courses can be included in your academic programme and can count for up to 5 ECTS each semester.

Beside the wide range of courses taught in French, UMONS also organises a good number of **courses in English** in the fields listed here below.

International, just like you

During your studies at UMONS you will live a truly international experience and meet students from more than 70 countries. The University of Mons is involved in numerous international collaborations and has been awarded the ECTS label, guaranteeing the quality of the exchange process and the transferability of the credits gained during the exchange.

Organisation of the academic year

The academic year is divided into three periods :

- the **Fall term** starts mid-September, with examinations in January;
- the **Spring term** starts in February, with examinations in June;
- the **resit examination period** takes place from mid-August to mid-September.

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Study Architecture and Urban Planning in English

The Faculty of Architecture and Urban Planning (FA+U) of the University of Mons is a small-sized faculty with over 600 students. Its education is based on a combination of theoretical courses, ponctuals workshops and studios, the latter being at the heart of the learning process and the application of the theoretical courses. The workshops organised in the Master programme address very distinct themes: heritage, housing, landscape use, and urban planning. All these specialisations are closely linked to particular territories, for example, those which are marked by a rich historical past, or brownfields dealing with the wider issue of the reconversion of territories and cities.

All courses at FA+U are taught in French. However, some years, workshops abroad in English are organized.
Exchange students may also choose

optional courses in French (including a special French course for beginners) to improve their language skills.

Moreover, since 2017, the Faculty of Architecture and Urban Planning (FA+U) and the Centre for Modern Languages (CLV) of the University of Mons (UMONS) have joined forces and developed collaborative projects in English designed to internationalize teaching and learning. This approach is in line with Sustainable Development Goal 4.7 as adopted by the United Nations in 2015, which promotes inclusive and equitable quality education for everyone. In practical terms, two different projects have been implemented within the architecture studios which give all the undergraduate students the opportunity to benefit from an international experience even if they are staying "at home":

- The first one consists in organizing some studio and jury sessions in English and promoting the use of the language as a tool for international communication, while providing continuous pedagogical support. The main objective is to secure a learning space where mistakes can be made and certain attitudes are unblocked thanks to the parallel language use of both English and French. Students can build on their confidence in their own discipline and in their language acquisition, which will ultimately equip them for their future academic and professional pathways.
- The second project (for third-year students) takes place during the "Creative Week". The Faculty is also the coordinator of an inter-university project: CARE LAB (Creating Adequate Residence for the Elderly - Learning Across Borders). This intensive workshop is the result of discussions on the pressing need to (re) design domestic and residential spaces for the elderly, with the aim of ensuring greater independence and well-being, especially in pandemic times. FA+U students worked together on a project with peers in architecture but also from other disciplinary backgrounds and from different European universities.

Through this virtual exchange, FA+U students are encouraged to think collaboratively on current societal challenges, become globally engaged, confront ideas, co-construct interdisciplinary learning and practice their English language skills in an authentic intercultural and multilingual context.

Admission: the courses are chosen, in agreement with the home institution, by students on international mobility programmes (no degree is awarded by UMONS, but one can be awarded by the home institution if the conditions are fulfilled).

More information about the FA+U:
https://web.umons.ac.be/fau/en/

Faculté Warocqué
Economie & Gestion

ISO9001 CERTIFIED
VINÇOTTE

Study Business and Economics in English

The Warocqué School of Business and Economics is one of the oldest faculties of the University of Mons. It was created in 1899, with the initial objective to train businessmen and women to play a key role in the industrial and economic contexts in Belgium and abroad. The Warocqué School of Business and Economics has met this challenge for over a century. Today, the Faculty curricula meet the expectations of the ever-evolving world of economics and management.

The Warocqué School of Business and Economics delivers outstanding teaching and a great-learning experience for students. The quality of all the processes is certified by the ISO 9001 international standard, and our institution has received several awards from the Regional Government of Wallonia. Excellence is also an important value shared by the lecturers, whose mission is to provide high-quality education and research.

Study with us as an Exchange Student

The Warocqué School of Business and Economics (FWEG) offers a wide range of Bachelor and Master courses in French and English.

Within the framework of a bilateral agreement between your home institution and UMONS, you can opt for a stay of 5 or 10 months (1 or 2 semesters).

Your academic programme can be exclusively made up of courses, or can be complemented by a placement in a Belgian company or by a research internship at the university. Such an arrangement will give you the opportunity to have a great international experience and to get all the necessary skills to meet the challenges of an international career.

As an exchange student you will have the opportunity to create your own academic programme in order to meet your career objectives, in agreement with your home institution. You can also prepare a Master thesis under the expert supervision of one of our professors.

Beyond the classroom, you will also have the opportunity to work closely with the Faculty through sponsored activities, research projects, internship programmes, and through the Junior Enterprise.

NEW 2021-2022 : a full master's programme in English

From September, students will have the opportunity to follow our master's programme entirely in English.

FIRST YEAR OF MASTER (60 ECTS)		
Courses	Semester	ECTS Credits
Mandatory courses (45 ECTS)		
Consumer's Behavior	1	3
Luxury Marketing	1	3
International Marketing Management + Cases	1	6
Corporate Finance	1	3
Financial Statements Analysis and Introduction to International Standards	1	3
International Finance	1	6
Cases in Finance	2	3
Financial Markets and Portfolio Management	2	3
International Standards for Accounting and Reporting	2	3
General Risk Management	2	3
Advanced Econometrics	2	6
Business Ethics	2	3
Elective Module (*Choose a module* - 9 ECTS)		
Module Economics		
International and European Economics	1	3
Introduction to Economic Models – Part 1	2	3
Introduction to Economic Models – Part 2	2	3
Module Risk		
Methods in Risk assessment and Modeling – Part 1	1	3
Financial Risk Management	2	6
Languages (6 ECTS)		
English Course (*choose 3 ECTS*) : Job Hunting or Business Across Cultures	1 or 2	3
Spanish Course (*choose 3 ECTS*): Español de los negocios 1 or Comunicación Comercial 1 (A crash course for beginners is also available)	1	3

SECOND YEAR OF MASTER (60 ECTS)		
Courses	Semester	ECTS Credits
Mandatory courses (48 ECTS)		
Performance Analysis	1	3
Personnel Economics	1	3
Strategic Management	1	6
Seminar in Corporate Finance	1	3
Economic and Business Current Affairs	1	6
Master Thesis	1 & 2	18
Internship	2	9
Elective Module (*Choose a module* - 6 ECTS)		
Module Economics		
Economics of European Integration	1	6
Module Risk		
Seminar in Risk Management	1	3
Methods in Risk Assessment and Modeling – Part 2	1	3
Languages (6 ECTS)		
English Course (*choose 3 ECTS*) : IELTS International Test or Academic Presentations	1 & 2	3
Spanish Course (*choose 3 ECTS*) Español de los negocios 2 or Comunicación comercial 2	1	3

English-taught Courses

Master courses are accessible to graduates AND undergraduates according to the pre-requisites of incoming students.

Courses	Level	Semester	ECTS Credits
Finance and risk management			
Corporate Finance	MA	1	3
Seminar in Corporate Finance	MA	1	3
International Finance	MA	1	6
Regulatory Framework in the financial sector	MA	1	3
Financial Risk Management	MA	1	6
Seminar in Risk Management	MA	1	3
Methods in Risk Assessment and Modeling – Part 1	MA	1	3
Methods in Risk Assessment and Modeling – Part 2	MA	1	3
Public Finance	BA	1	3
Cases in Finance	MA	2	3
Financial Markets and Portfolio Management	MA	2	3
General Risk Management	MA	2	3
Management			
Strategic Management	MA	1	6
Collaborative Innovation and Creativity	MA	1	3
Internet Information Management – Part 1	MA	1	3
Internet Information Management – Part 2 (*Prerequisite : Part 1)*	MA	1	3
Business Ethics	MA	2	3
Marketing			
Consumer's Behavior	MA	1	3
Luxury Marketing	MA	1	3
International Marketing Management + Cases	MA	1	6
Marketing Planning	BA	2	3
Digital Marketing	MA	2	3
Cases in Marketing	MA	2	3
Audit and control			
Financial Statements Analysis and Introduction to InternationalStandards	MA	1	3
Performance Analysis	MA	1	3
Internal Control	MA	1	4
International Standards for Accounting and Reporting	MA	2	3

Economics			
International and European Economics	MA	1	3
Economics of European Integration	MA	1	6
Industrial Economics *(Prerequisite : Econometrics)*	MA	1	3
Personnel Economics	MA	1	3
Economic and Business Current Affairs	MA	1	6
Introduction to Economic Models – Part 1	MA	2	3
Introduction to Economic Models – Part 2	MA	2	3
Environmental Economics	MA	2	3
Advanced Econometrics	MA	2	6
Master Thesis		1 & 2	18
Internship		2	9

More information on:

https://web.umons.ac.be/fweg/en/mobilite-etudiante-international/venir-mobilite-in/cours-donnes-anglais/

English-friendly Courses

Some French-taught courses are supported by reference materials available in English, and students may take the exams for these courses in English

Course Title in French (*Email address of the professor in charge*)	Course Title in English	Reference Material	Level	Semester	ECTS
Economie politique et tutorat 1 & 2 Benoit.mahy@umons.ac.be	*Economics 1 & 2*	Sloman, J., Garratt, D. & Guest, J. (2018), «*Economics*», 10th Ed., Pearson Education	Bachelor	1	6
				2	6
Macroéconomie Guillaume.vermeylen@umons.ac.be **Microéconomie** Loredana.cultrera@umons.ac.be	*Economics*	Mankiw, G. N. (2016), «*Macroeconomics*», 7th Ed., De Boeck Pindyck R., Rubinfeld D., (2018), «*Microeconomics*», Pearson, 9th Ed., 784p	Bachelor	1	6
Management et analyse des organisations Marc.labie@umons.ac.be Cecile.godfroid@umons.ac.be	*Management and Analysis of Organisations*	Robbins, S., Decenzo, D. and Coulter, M., «*Fundamentals of management*», 11th Ed., Pearson	Bachelor	2	6
Econométrie Melanie.volral@umons.ac.be	*Econometrics*	Ramanathan, R. (2008), «*Introductory Econometrics with Applications*», Harcourt College Publishers	Bachelor	1	3
Economie du travail Benoit.mahy@umons.ac.be	*Labour Economics*	Filer, R.K. Hamermesh, D.S. and Rees, A., (1996), «*The Economics of Work and Pay*", 6th Ed., Harper-Collins	Bachelor	2	3
Séminaire d'économie du travail Benoit.mahy@umons.ac.be	*Labour Economics Seminar*	Ehrenbergh, R., & Smith, R. (2018), «*Modern Labor Economics. Theory and Public Policy*», 13th Ed., Routledge	Master	2	2

Work Placement

Your academic programme can be exclusively made up of courses, or can be complemented by a placement in a Belgian company or by a research internship. Such an arrangement will give you the opportunity to have a great international experience and to get all the necessary skills to meet the challenges of an international career.

INTERNSHIP PROFILES (FOR A MINIMUM OF 6 WEEKS)

▶ Full-time internship within a company (38 hours/week)

Usually from September to January or February to June. This internship requires you to produce a written report and represents 10 ECTS. Applicants are responsible for all the formalities with the company, as the University has no formal agreements or partnerships in place with any firms. However, candidates may send their CVs1 to us and we will act as an intermediary. Students may also decide to write a Master's dissertation (20 ECTS). Some previous host companies:
McKinsey Belgium, PWC, Accenture, AB Inbev, Robert Half.

▶ Research internship*

This internship requires student to write a Master's dissertation or attend classes (both are feasible). Candidates may send a CV and a letter of motivation. We strive to answer within two weeks.

We offer four proposals:

- Research internship with the Accounting, Auditing, Risk Management and Entrepreneurship Unit (CARE) – Investigating Corporate Entrepreneurship.
- Research internship with the Finance Unit (stock market, banking sector, fintech, financial regulation…).
- Research internship with the Economics and Business Management Unit – Studying the management of microfinance institutions.
- Research internship with the Labour Economics Unit – Investigating the impacts of human resource practices.

**For more information on other research internship opportunities, visit https://web.umons.ac.be/fweg/en/services-denseignement-et-de-reche*

POLYTECH MONS

Study Engineering in English

Founded in 1837, the Faculty of Engineering is the oldest part of UMONS, and is the oldest engineering faculty in Belgium. It is a member of the T.I.M.E. Network*, which brings together prestigious engineering schools. Every year, the Faculty of Engineering sees about 150 Master students graduate in Architectural Engineering, Chemical Engineering and Material Science, Computer Engineering and Management, Electrical Engineering, Mechanical Engineering, and Geology and Mining Engineering.

* Top Industrial Managers for Europe
www.time-association.org

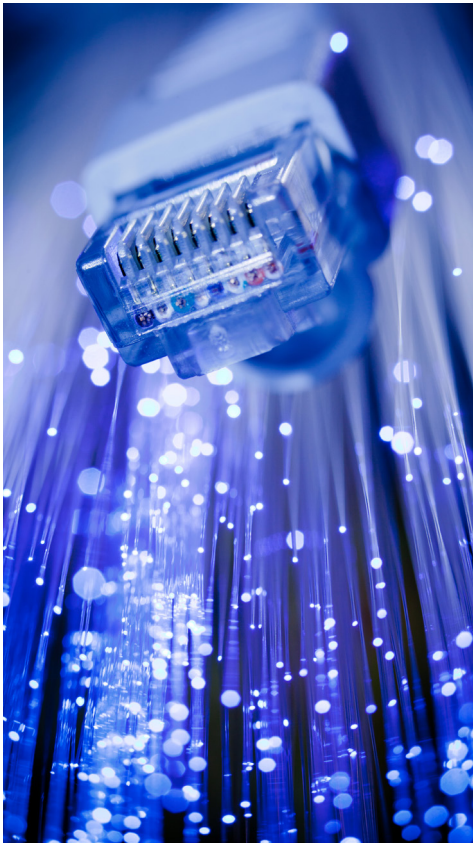
Studying Engineering as an Exchange Student

The Faculty of Engineering offers a wide range of Bachelor and Master courses taught in French and English.

Within the framework of a bilateral agreement between your home institution and UMONS, you can opt for a stay of 5 or 10 months (1 or 2 semesters). Your academic programme can be exclusively made

up of courses and projects, or can be complemented by a Master thesis.

As an exchange student you have the opportunity to create your own academic programme in order to meet your career objectives. In agreement with your home institution, you can choose any of the courses from the following tables. These courses can be taken in part or in full.



Multimedia and Telecommunications

This two-year Master course has been established to transmit the research expertise developed at UMONS at the Institute for Information technology and Computer science (INFORTECH) and the Institute for New Media Art Technology (NUMEDIART).

INFORTECH focuses on technologies used for sensing, formatting, transmitting, processing and exploiting data, signals and information. Its expertise covers a wide range of technological resources, as well as important research and development capabilities, enabling its participation in both regional and international research projects.

Today, INFORTECH is represented by more than 70 full-time researchers, along with researchers from two accredited research centres co-founded by the University: MULTITEL and CETIC.

Interdisciplinary research and innovation is encouraged, and is structured around several technological areas:

- Electronics and Microelectronics
- Computer Science
- Telecommunications
- Information Processing, Data Analysis and Decision Support
- Signal Processing and Multimedia

This Master programme focuses on Multimedia and Telecommunications and is organised over 2 academic years with 120 ECTS credits. The programme offers various courses and involves completing project work (during the autumn term) and undertaking a Master thesis (during the spring term), all under expert supervision.

All courses are taught in English. Students may also choose optional courses in French (including a special French course for beginners) to improve their language skills while studying in English.

Admission: the courses can be chosen, in agreement with the home institution, by students on international mobility programmes (in this case no degree is awarded by UMONS, but can be awarded by the home institution if the relevant conditions are fulfilled).

MULTITEL is an independent research centre in multimedia and telecommunications. It was founded in 1999 by the Faculty of Engineering. It currently employs about 80 people who work in multidisciplinary teams of engineers, technicians and marketing specialists. Its main goal is to develop and implement innovative projects in collaboration with local and international companies. MULTITEL's scientific fields include voice technologies, data fusion, optical fibere applications, image processing and computer network management. Besides its R&D activities, MULTITEL is active in the sectors of optics, telecommunications and company computer networks.

NUMEDIART is a multidisciplinary research institute whose main goal is to develop new technologies for companies working in the multimedia and digital sectors. This institute brings together researchers, industrialists and artists working on 6 main research themes:

- Multimedia information retrieval
- Performative media
- Monumental projections (3D mapping)
- Motion capture (MOCAP)
- Smart spaces
- Augmented reality

Multimedia and Telecommunications

Courses		ECTS	Semester	Year
Signal Processing	Signal Processing 1	4	1	MA1
	Signal Processing 2	1	1	MA1
Microwave Engineering		4	1	MA1
Digital Electronics		4	1	MA1
Analog Electronics		5	1	MA1
Wireless and Mobile Communication		2	2	MA1
Hardware/Software Platforms		2	2	MA1
Project		10	2	MA1
Human and Social Science Credits		5	1	MA1
Image Analysis and Pattern Recognition		4	1	MA1
Advanced Communication Systems		5	2	MA1
Networks for Multimedia and the Internet of Things		3	1	MA1
Optical Communications		4	2	MA1
Audio Processing		4	2	MA1
International Relations		3	2	MA2
Work Placement - Industrial Traineeship		10	1	MA2
Visual Processing and Smart Spaces		4	1	MA2
Advanced Optical Communications		3	1	MA2
Antennas and Propagation		2	1	MA2
Telecommunications Case Studies		3	1	MA2
Network Security and Management		3	1	MA2
Advanced Electronics	Embedded Systems	4	1	MA2
	Mixed Signal Circuits and Systems for Smart Agent SoC	1	1	MA2
Professional Credits		5	2	MA2
International Credits		5	2	MA2
Master Thesis		20	1&2	MA2

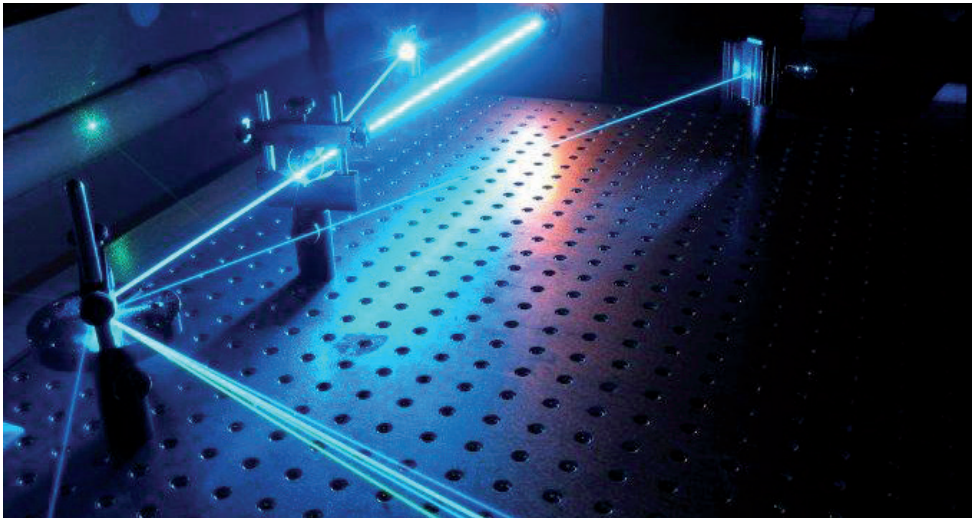
More information on: https://web.umons.ac.be/fpms

Data Science for Dynamics Systems

This two-year Master programme focuses on methods and techniques for measurements, signal processing, system modelling, optimisation and control, as well as robotics, with applications in biomedical engineering and process applications in the bio industry.

The course programme is organised over 2 academic years and is composed of 120 ECTS credits. The keywords of this programme are “signals”, “systems” and “control” as well as “biomedical engineering” and “bioprocess applications”. The programme spans various domains including biomedical signal and image processing, population and biological system modelling, hardware and software instrumentation, advanced control strategies for biomedical and bioprocess applications, and the use of technology in various processes related to human health, the environment, food and renewable energy.

This programme involves completing two projects and undertaking a Master thesis, all under expert supervision. Students can also choose some optional introductory courses, depending on their previous educational background. Alternatively, students can attend language courses, including a special French course for beginners.



Signals, Systems and Bioengineering

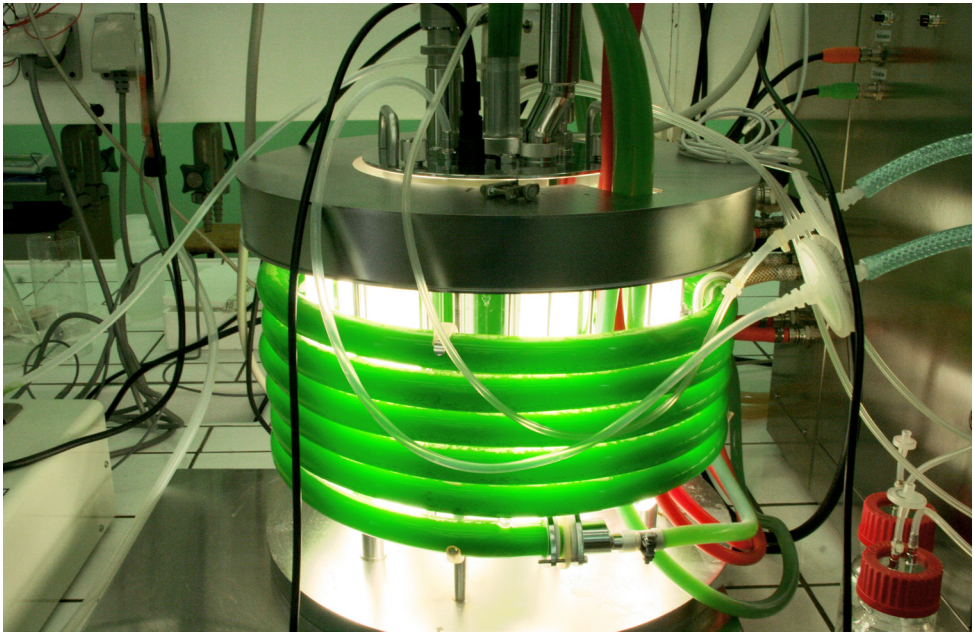
Courses		ECTS	Semester	Year
Signal processing	Signal Processing 1	4	1	MA1
	Signal Processing 2	1	1	MA1
Microwave Engineering		4	1	MA1
Digital Electronics		4	1	MA1
Analog Electronics		5	1	MA1
Hardware/Software Platforms		2	2	MA1
Power Electronics	Power Electronics 1	2	1	MA1
	Power Electronics 2	2	1	MA1
Project		10	2	MA1
Human and Social Science Credits		5	1	MA1
Image Analysis and Pattern Recognition		4	1	MA1
Advanced Control		4	2	MA1
Medical Image Processing		3	2	MA1
Instrumentation and communication	Industrial Instrumentation	2	2	MA1
	Interconnection of Sensor Devices	4	2	MA1
	Biomedical Sensors	1	2	MA1
International Relations		3	2	MA2
Work Placement - Industrial Traineeship		10	1	MA2
Biomedical Signal Processing		3	1	MA2
Optimal Control and Estimation		4	1	MA2
Biological System Modelling and Software Sensor Design		5	1	MA2
Robotics and Biomedical Applications		5	1	MA2
Discrete Event Systems		3	1	MA2
Professional Credits		5	2	MA2
International Credits		5	2	MA2
Master Thesis		20	2	MA2

More information on: https://web.umons.ac.be/fpms

The Master programme in "Signals, Systems and Bioengineering" was designed to incorporate the research expertise developed at UMONS in the BIOSYS Research Centre.

Admission: the courses can be chosen, in agreement with the home institution, by students on international mobility programmes (in this case no degree is awarded by UMONS, but one can be awarded by the home institution if the relevant conditions are fulfilled)

BIOSYS is an R&D Excellence group active in the scientific and engineering aspects of life sciences, including biosignal and image processing, bio-chemical system analysis and bioprocess modelling, optimisation and control, ecology and environment, as well as bio-mechanics and bio-optics. Several laboratories (active in chemical and biochemical engineering, mechanical engineering, signal processing, control, computer science, mathematics and telecommunications) participate in this research group.



Electric Energy

This Master programme focuses on three core subject: the study and modelling of electrical machines, power electronics and drives, and modern electrical power systems (including renewable energies and smart grids).

This programme was designed drawing upon research expertise developed at UMONS through the ORES "Smart Grids – Smart Metering" project, started in 2011, and in relation to the concerns of the Research Institute for Energy.

The "Smart Grids – Smart Metering" project funded by ORES (the company in charge of the electricity and natural gas distribution grids in Wallonia, Belgium) is to prepare the technological revolution represented by smart grids for the electricity sector. It aims to develop knowledge in this field as well as in the field of smart meters. It focuses on:

- studying the impact of decentralised electricity production on distribution grids
- managing electricity demand and its relevance to production
- solving computer security problems regarding the transfer of data on power distribution networks
- examining the impact of developing the use of electric vehicles on these networks

All these topics are being addressed by a team of about 10 PhD researchers.

The Research Institute for Energy organises research activities in the field of energy at UMONS. This institute brings together 85 researchers and teachers working on themes which are covered by the Joint Programmes carried out by the European Energy Research Alliance, for example, smart cities, energy storage, smart grids, wind power and photovoltaic technologies, to name but a few.

The course programme is organised over 2 academic years and is composed of 120 ECTS credits. The programme offers various courses and involves completing a first-year industrial Master project, during which the student has to tackle a real-world technical challenge, and undertaking a Master thesis, all under expert supervision. All courses are taught in English. Students can also select optional courses (in French), depending on their educational background. A special French course for beginners is offered as well.

Electric Energy

Courses		ECTS	Semester	Year
Signal processing	Signal Processing 1	4	1	MA1
	Signal Processing 2	1	1	MA1
Microwave Engineering		4	1	MA1
Digital Electronics		4	1	MA1
Analog Electronics		5	1	MA1
Hardware/Software Platforms		2	2	MA1
Power Electronics	Power Electronics 1	2	1	MA1
	Power Electronics 2	2	1	MA1
Project		10	2	MA1
Human and Social Science Credits		5	1	MA1
Energetics of Modern Power Systems		4	1	MA1
Advanced Control		4	2	MA1
Electric Vehicle Drives		5	2	MA1
Steady-State and Transient Operation of Synchronous Machines		5	2	MA1
International Relations		3	2	MA2
Work Placement - Industrial Traineeship		10	1	MA2
Power Systems Dynamics and Stability		3	1	MA2
Computer-Aided Design of Energy Systems		4	1	MA2
Electrical Networks and Protection		4	1	MA2
High Voltage Engineering		2	1	MA2
Special Machines and Actuators		3	1	MA2
Smart Grids		4	1	MA2
Professional Credits		5	2	MA2
International Credits		5	2	MA2
Master Thesis		20	2	MA2

More information on: https://web.umons.ac.be/fpms

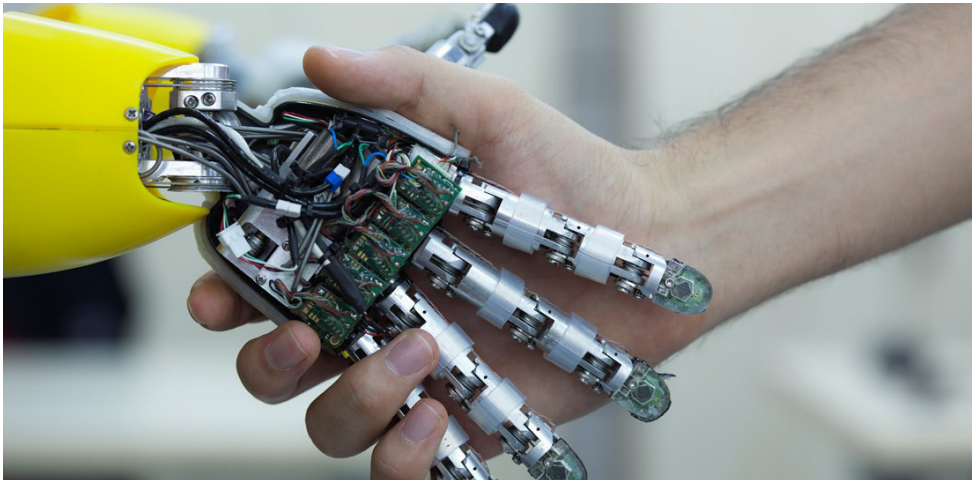
Mechatronics

The Master in Mechanical Engineering comprises a common core of 75 credits, 15 credits of elective courses, and a specialised focus of 30 credits to be chosen from “Design and Production”, “Energy and Power Systems” and “Mechatronics”. The common core programme provides a background in solid and fluid mechanics, machinery, heat transfer, and design/production, as well as in some cross-disciplinary topics, such as control and electronics.

During the second semester of the first year, students can have their full curriculum in English if they choose to focus on Mechatronics.

According to the NF E 01-010 French standard, mechatronics consists of an “approach aimed at the synergistic integration of mechanics, electronics, control theory, and computer science within product design and manufacturing, in order to improve and/or optimise its functionality”. Robots, drones, driver/pilot assistance systems in the automotive or aeronautics industry, self-balancing personal transporters, or computer-aided manufacturing systems are all examples of mechatronic applications.

The programme is constructed from the usual structure of a mechatronic system: in order to improve the performance of a given mechanical system, it is fitted with sensors and actuators. The signals from the sensors are acquired by a processing unit which, in turn, commands the actua-

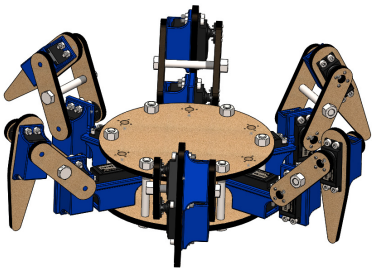


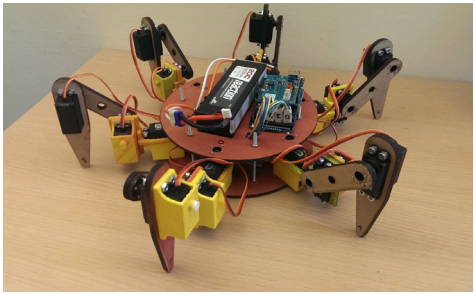
tors so as to obtain the desired behaviour of the mechanical system. The programming of the processing unit generally requires some modelling of the system and the application of control theory. Moreover, the programme includes a machine design project, whose outcome is the computer-aided design (CAD) of a moderately complex machine, and a digital control project, consisting of programming the control of an actual mechanical system, such as a robot leg, a unicycle robot, a retrofitted plotter, etc.

Mechatronics courses available in English	ECTS	Semester
Machine Design Project	10	2
Fluid Power Actuators: Principles and Command	3	2
Advanced Control and Estimation	5	2
Modelling and Simulation of Active Mechanical Systems	4	2
Microprocessor-based Systems and Digital Control	5	2
Industrial Automation Systems	3	2

Admission: the courses can be chosen in agreement with the home institution, by students on international mobility programmes (in this case no degree is awarded by UMONS, but one can be awarded by the home institution if the relevant conditions are fulfilled)

To get the most out of this experience, students should master machine design (machine components), be familiar with at least one CAD system (SolidWorks, NX, Catia, ProEngineer, etc.), and know the basics of control theory, signal processing and programming.





More information on: https://web.umons.ac.be/fpms

Study Psychology in English

The drastic and rapid changes in society reinforce the need to train specialists who can contribute to human development and well-being. The Faculty of Psychology and Education (FPSE) of the University of Mons participates in the training of these specialists by offering studies in three disciplines: Psychology, Education and Speech Therapy.

Through the programmes offered, teachers are keen to share their knowledge and practical experience with the students, stimulate their intellectual curiosity, help them to develop their analytical and thinking skills, improve their communication skills, and sharpen their critical thinking.

Research in psychology seeks to understand and explain people's thoughts, emotions, and behaviours.

The Master programme in Psychology is taught mostly in French, but students may take up to 30 research-focused credits in English.

Psychology courses available in English	ECTS	Semester
Scientific Communication	5	1
Research Methodology	5	1
Methods and Techniques for Research in Psychology	5	1
Psychology Research Placement	15	1 or 2

Exchange students may also choose optional courses in French (including a special French course for beginners) to improve their language skills while studying in English.

Admission: the courses can be chosen, in agreement with the home institution, by students on international mobility programmes (in this case no degree is awarded by UMONS, but one can be awarded by the home institution if the relevant conditions are fulfilled).

More information on: https://web.umons.ac.be/fpse

Study Science in English

The Faculty of Science of the University of Mons was created in 1965 and is composed of five Departments: Biology, Chemistry, Computer Science, Mathematics, and Physics.

What could be more enthralling than pursuing studies that help us understand the universe and prepare for the future? Studying at the Faculty of Science means questioning the laws of nature.

Students learn about our closest and remotest environments, and strive to understand their mechanisms in order to manage them more efficiently. This can help prepare a better future for all of us.

Each day, scientists invent a little piece of our future. By getting involved in science, students become actors in their own future!

The majority of courses at the Faculty of Science are taught in French, but the five Departments (Biology, Chemistry, Computer Science, Mathematics, and Physics) all offer students a selection of courses in English.

Admission (for all Departments of the Faculty of Science)

The courses can be chosen, in agreement with the home institution, by students on international mobility programmes (in this case no degree is awarded by UMONS, but one can be awarded by the home institution if the relevant conditions are fulfilled).

Courses that are given annually can only be chosen for a full-year mobility and other courses can only be chosen if the mobility happens in the corresponding semester.

Biology

The Biology Department organises a series of courses in English on modern methods useful to the study of living organisms. The courses are organized during the second semester of the academic year (February to May).

The full programme takes 3 months to complete. Students who take the 7 courses will be credited 30 ECTS. Students may also select some of the courses and complement their stay with an internship in one of our research labs. They may also choose to prepare their Master thesis at UMONS for 30 ECTS.

Biology courses available in English	Semester
Biological Micro and Macrophotography: Image Processing and Analysis	2
Electron Microscopy	2
Environmental Microbiology	2
Immunohistochemistry and Morphometry	2
Proteomics	2
Ribosomal RNA Biogenesis	2
Sequencing and Molecular Phylogeny	2
Master Thesis in Biology	Annual

The courses are taught by a team of experts in the field and include a significant hands-on practical element.

Non-French speaking international students may also take the course of "French as a Foreign Language" in the first and second semester of the Master programme, for 5-6 ECTS per semester.

More information on: https://web.umons.ac.be/fs/en/

Chemistry

The Chemistry Department offers a series of courses in English at Bachelor and Master levels. Students are also encouraged to prepare and write their Master thesis in English.

Non-French speaking international students may also take the course of "French as a Foreign Language" in the first and second semester of the Master programme, for 5-6 ECTS per semester.

Chemistry courses available in English	ECTS	Semester	Year
English for Chemistry	3	1	BA2
English for Scientific Communication	3	Annual	BA3
Electron Spectroscopy for the Characterisation of Nanomaterials	2	1	MA1
Research Internship	8	2	MA1
Calculation Methods Applied to Chemistry	3	1	MA2
Corrosion and Surface Treatments	4	2	MA2
Quantum Chemistry for Materials Science	3	2	MA2
Reactive Extrusion Processing of Polymer Materials	3	2	MA2
Semiconductors	5	2	MA2
Master Thesis	28	Annual	MA2

More information on: https://web.umons.ac.be/fs/en/

Computer Science

The Computer Science Department offers a series of courses in English at Bachelor and Master levels. Students are also encouraged to prepare and write their Master thesis in English.

Computer Science courses available in English	ECTS	Semester	Year
English for Science	3	Annual	BA2
Signal Processing	5	1	BA3/MA1/MA2
English for Scientific Communication	3	Annual	BA3/MA1/MA2
High Performance Computing	2	1	MA1
Project	12	Annual	MA1
Advanced machine learning and deep learning	5	1	MA1/MA2
Cloud computing	2	1	MA1/MA2
Computer Vision and Machine Intelligence	4	1	MA1/MA2
Multimedia information retrieval	3	1	MA1/MA2
Networks for multimedia and the Internet of things	3	1	MA1/MA2
Network security and management	3	1	MA1/MA2
Visual processing and smart spaces	4	1	MA1/MA2
Advanced operating systems	4	2	MA1/MA2
Advanced topics in Artificial Intelligence	3	2	MA1/MA2
Knowledge representation and reasoning	6	2	MA1/MA2
Machine Learning II	6	2	MA1/MA2
Medical image processing	3	2	MA1/MA2
Selected topics in Artificial Intelligence	4	2	MA1/MA2
Software Evolution	6	2	MA1/MA2
Web technologies	3	2	MA1/MA2
Audio-Processing	4	2	MA2
Scientific Research Trip	15	Annual	MA2
Master Thesis	25	Annual	MA2

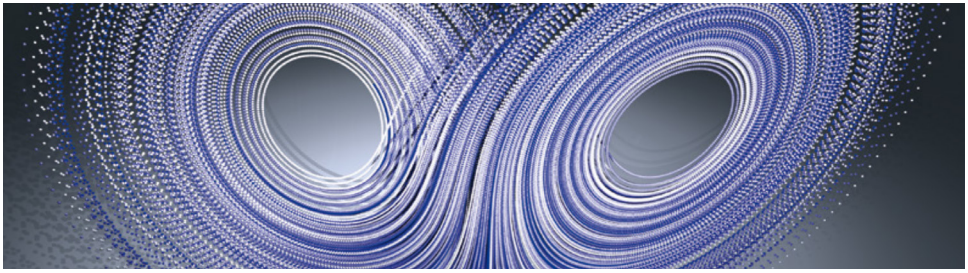
Non-French speaking international students may also take the course of “French as a Foreign Language” in the first and second semester of the Master programme, for 5-6 ECTS per semester.

Mathematics

The Mathematics Department offers a series of courses in English at Bachelor and Master levels. Students are also encouraged to prepare and write their Master thesis in English.

Non-French speaking international students may also take the course of "French as a Foreign Language" in the first and second semester of the Master programme, for 6 ECTS per semester.

Mathematics courses available in English	ECTS	Semester	Year
English for Science	3	Annual	BA2
English for Scientific Communication	3	Annual	BA3
Formal Methods fo System Design	12	Annual	MA1
Integrated Project	18	Annual	MA1
Project in Mathematical Analysis	12	Annual	MA1
Seminar in Stochastic processes	9	2	MA1
Research Methodology	3	1	MA2
Seminars in: (choose one or more) - Numerical Analysis - Model Theory and Applications (6 ECTS) - Local fields - Model Theory and Applications - Effective Mathematics	12	Annual	MA2
Master Thesis in Mathematics	30	Annual	MA2

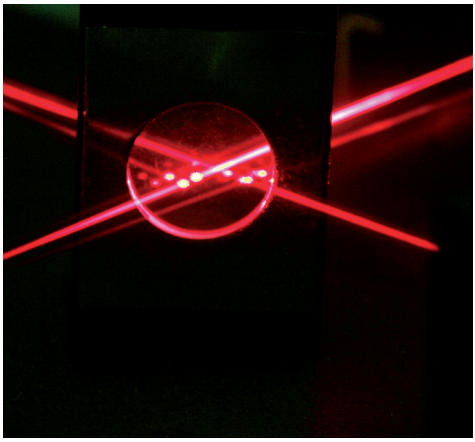


More information on: https://web.umons.ac.be/fs/en/

Physics

The Physics Department offers a series of courses in English at Bachelor and Master levels. Students are also encouraged to prepare and write their Master thesis in English.

Non-French speaking international students may also take the course of "French as a Foreign Language" in the first and second semester of the Master programme, for 5 ECTS per semester.



Physics courses and research projects available in English	ECTS	Semester	Year
English for Science	3	Annual	BA2
Personal project	6	2	BA3
English for Scientific Communication	2	Annual	BA3
Project in Physics	15	2	MA1
Particle Radiation Detection and Measurement	5	2	MA1
Quantum Field Theory 2	6	2	MA1
Semiconductors	5	2	MA1
Advanced Ceramics	5	1	MA2
Quantum Field Theory 3	6	1	MA2
Advanced topics in Gravitation	4	2	MA2
Recent Trends in Material Science	5	2	MA2
Master Thesis in Physics	30	Annual	MA2

More information on: https://web.umons.ac.be/fs/en/

Study Biomedecine in English

The Faculty of Medicine and Pharmacy of the University of Mons welcomed its first students in October 1973. There are already numerous doctors, chemists and biomedical scientists that can testify to the rigorous humanistic education given at the “Plaine de Nimy” campus.

The Faculty’s teacher-researchers, whether mathematicians, physicists, chemists, biochemists, biologists, pharmacists or physicians, also bolster to our training offer, further ensuring that high quality education is delivered to all.

Optimal supervision, a good balance between the number of students and the teaching spaces, and accessibility to the research services integrated into the Faculty infrastructure all contribute to this fact.

The Faculty offers a two-year Master course in Biomedicine Specialist Focus on Neuroscience. Its programme provides a unique interdisciplinary and integrated training approach that covers all major topics of brain research, from normal brain functions to brain disorders. As an exchange student, you have the opportunity to create your own programme in order to meet your career objectives, in agreement with your home institution.

Biomedicine - Neuroscience

At the interface between psychology, engineering and biomedical sciences, this programme provides both theoretical and practical research training.
This specialisation covers the field of Neuroscience from brain cells to cognition, using knowledge from different neuroscience disciplines, such as molecular biology and behavioural testing, to study the brain and know how it functions.
The programme will help you to understand the mechanisms that are the reason for certain psychological processes and psychiatric and neurological disorders and will provide you with the skills needed to conduct fundamental and pre-clinical research into these disorders and mechanisms.

Courses	ECTS	Semester	Year
Biomedical Neuroscience (24 ECTS)			
Brain Plasticity	4	1	MA1
Integrative Biomedicine	6	1	MA1
Neuropharmacology	4	1	MA1/MA2
Research Techniques in Neuroscience	6	1	MA1/MA2
Neurotoxicology and Safety Pharmacology	4	1	MA2
Human Neuroscience (13 ECTS)			
Tools to analyse brain function	3	2	MA1/MA2
Neuroscience in Society	6	1	MA2
Psychophysiological bases of diseases: a cognitive approach	4	1	MA2
Computational Neuroscience (15 ECTS)			
Introduction to coding	2	1	MA1/MA2
Experimental behavioral neuroscience: group coworking	6	1,2	MA1
Introduction to computational neuroscience	3	1	MA2
Basic understanding of IA and Bci	4	1	MA2
Practical Work (60 ECTS)			
Experimental work in neuroscience laboratory	10	1,2	MA1
Scientific redaction and communication	10	2	MA1
Master Thesis	19	1,2	MA2
External Training	21	2	MA2
Transversal Competencies (7 ECTS)			
Interdisciplinary Programme in Healthcare Innovation	5	2	MA1
GMP/GLP	2	1	MA2

More information on:
https://web.umons.ac.be/fmp/en/training-offer/biomedicine-neuroscience/

Writing a PhD Thesis in English at UMONS

The University of Mons offers PhD education supervised by experts, which can be done in English (the main language for international research) in most of the fields covered by its faculties:

- → PhD in Architecture and Urban Planning
- → PhD in Arts and Art Sciences
- → PhD in Biomedical and Pharmaceutical Sciences (choice of specialisation)
- → PhD in Economics and Management
- → PhD in Engineering Sciences and Technology
- → PhD in Interpreting
- → PhD in Medical Sciences
- → PhD in Philosophy
- → PhD in Psychology and Education
- → PhD in Science (specialisation in Biology, Chemistry, Computer Science, Mathematics, or Physics)
- → PhD in Political and Social Sciences
- → PhD in Language, Litterature and Translation Studies

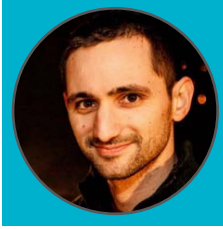
There are also many opportunities to write a Master thesis with supervision in English.

More information on: https://web.umons.ac.be/research

Testimonials

"I considered a PhD as a way to delve deeper into issues that had emerged during my studies and my clinical practice as a speech therapist. Being able to continue this in-depth study systematically through research seemed to be the appropriate route."

Doctor, Faculty of Psychology and Education, Head of the paramedical department and referent psychologists, Grand Hôpital de Charleroi



"The small size of our university means that the academic staff and I knew each other well. This environment is quite reassuring and is conducive to carrying out a thesis under good supervision."

Julien Leblud - Doctor at the Faculty of Science, researcher in the field of mobility and road safety

Linguistic and cultural recipes for a successful stay at the University of Mons

APERITIF

TandeMons

In collaboration with the International Relations Office and the students, a reception committee for international mobility students has been set up. Tandems, composed of a UMONS student and an international student, promote the better integration of the incoming student and allow the UMONS student to discover another culture or cultures.

STARTER

French as a Foreign Language for international students

Throughout the academic year, French as a foreign language (FLE) courses are organised in the evening for international students and researchers (56 hours / 5 ECTS per term).

Students are divided into groups, based on their language level on arrival (A1, A2 or B1).

Evening courses are preceded by optional preparatory courses (intensive sessions). These are face-to-face courses and cover not just language but also cultural activities, which encourage the integration of the student or researcher in the local and national socio-cultural environment.

SORBET

Remediation: English and Dutch

Interfaculty remediation courses in English and Dutch (evening courses) are offered to newcomers who have an insufficient language level, which could put them in difficulty in their normal programme.

MAIN COURSE

Credited language initiatives

Courses and seminars in English, Dutch and Spanish are integrated into the Bachelor's and Master's programmes.

Our language courses consist of face-to-face classes, exercises, conversation seminars, laboratory sessions, distance learning courses and other educational activities (flipped classroom, off-site activities, etc.).

Placement reports, Master's dissertations and scientific posters, written and presented in English, are validated with credits and assessed based on linguistic quality.

DESSERT

Certification of Language Skills

The following international tests are organised at UMONS:

- **TEFAQ** (Test d'évaluation du français adapté au Québec) and TEF Canada
- **TOEIC** (Test of English for International Communication)
- **TOEFL** (Test of English as a Foreign Language)
- **IELTS** (International English Language Test System)
- **CNaVT** (Certificaat Nederlands als Vreemde taal)

More information on: https://web.umons.ac.be/en/international/tandemons/

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Information

→ Feel free to contact the International Relations Office for any information about our programmes in French or English.

UMONS International Relations Office

Place du Parc, 22 - 7000 Mons, Belgium
Phone +32 65 37 32 36
relint@umons.ac.be

→ To apply for a University Certificate or Master programme, please contact the Registration Office.

UMONS Registration Office

Place du Parc, 22 - 7000 Mons, Belgium
service.inscriptions@umons.ac.be

View this brochure online on: http://bit.ly/UMONS-Study-in-English

UMONS Université de Mons

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