

2017 - 2018

MASTERS PROGRAMMES
TAUGHT IN ENGLISH





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Belgium

YOUR LIFE IN BRUSSELS, CAPITAL OF EUROPE

Brussels is among the world's most diverse capitals, home to the headquarters of the EU, NATO, and countless international companies and organisations.

While the main working language is French, the incredible number of different nationalities present in the city make it a modern-day tower of Babel.

A very lively city, Brussels boasts many cultural activities: you can enjoy concerts, theatres, cinemas, exhibitions, and shows of all kinds, as well as beautiful museums and monuments, such as the world-famous Grand Place or the many Art Nouveau buildings.

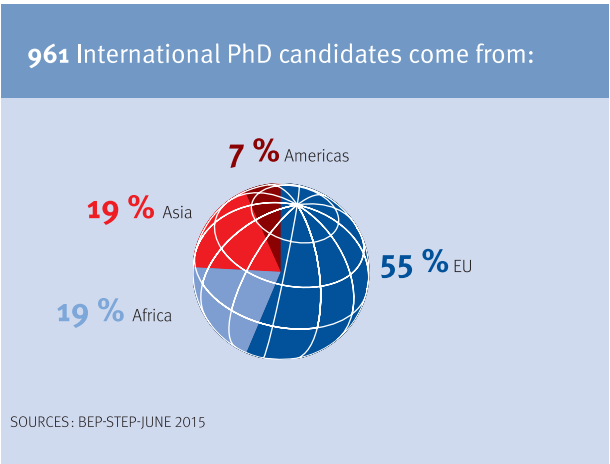
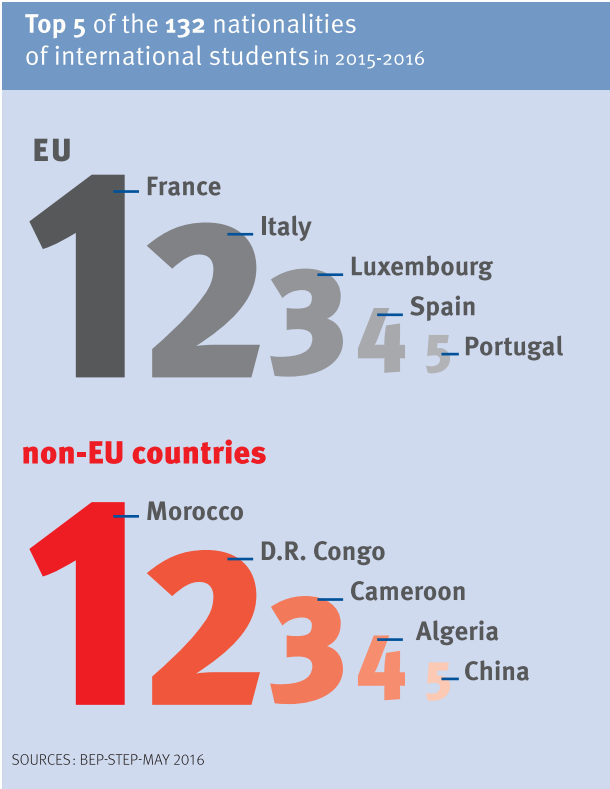
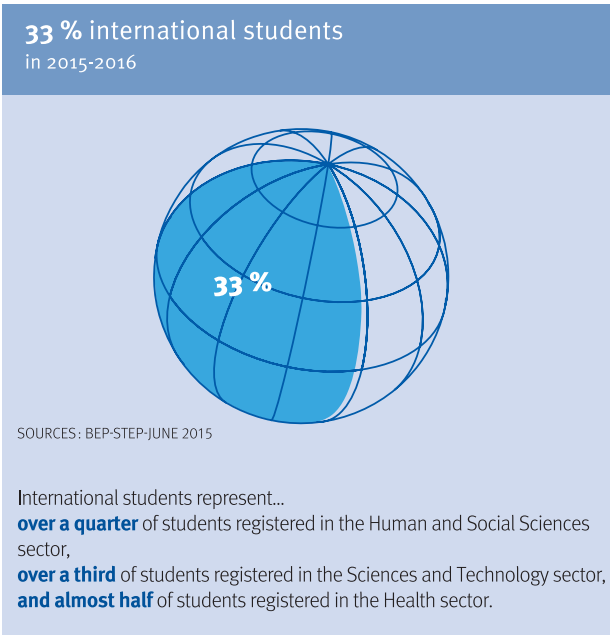
Brussels is also Europe's greenest city, offering many parks and surrounded by forests. Its manageable size and its cultural and economic energy create an outstanding living environment. Many Parisians, charmed by the city (and probably its cuisine!), have made it their home, and with the Thalys train they are only an hour and a half from the French capital. Which brings us to yet another benefit of being in Brussels: it is just a short hop away from Paris, London, Amsterdam...

ULB, A UNIVERSITY IN THE HEART OF EUROPE

Among the Université libre de Bruxelles' main features are its international attractiveness and its openness to the world. With an impressive 33% of international students, ULB is the most 'welcoming' university in Belgium.

Between the university's students and staff, more than 130 nationalities are represented at ULB, making it a place where cultures, philosophies, and religions come together.

With this international dimension and its location in Brussels, home of the EU institutions, the university allows students to attend classes taught by lecturers from other universities within the framework of various international partnerships and agreements.



A MAJOR RESEARCH UNIVERSITY

ULB has received many prizes in recognition of its excellence, including four Nobel science prizes (awarded to Jules Bordet, Albert Claude, Ilya Prigogine, and François Englert in 2013), twenty-four Francqui prizes — Belgium's most prestigious scientific award —, and fourteen European Research Council grants.

ULB is also strongly committed to economic, social and cultural development: the university's research activities are organised as a continuum, from fundamental research to applied research, including research focused on industrial and social needs.

The university takes part in EU cooperation programmes, and is a major player in the regional development of Brussels and Wallonia. ULB is very active in finding business applications for the results of its research, with a special Technology Transfer Office within its research department. It currently manages no less than 86 active patent families, 34 spin-off companies, three business incubators, an investment fund, and an industrial hub dedicated to biotechnologies: Biopark Charleroi Brussels South.

Key factors enabling ULB's excellence in research are the freedom it gives its researchers, and its involvement in international activities. As a university that holds freedom as one of its core values, ULB approaches research from a 'bottom up' perspective, letting its researchers take initiatives instead of telling them what to do or which areas of research should be pursued.

Its position in the heart of Europe gives ULB a strong international component, which influences how it recruits academic staff and researchers as well as its participation in international research networks.

A FREE-THINKING UNIVERSITY

ULB was founded in 1834, just four years after Belgium itself was created. Today, the university's 12 faculties cover all areas and levels of academic studies, from undergraduate to post-doctoral studies, with teaching and research activities tightly interwoven.

Initially based solely in Brussels, ULB has extended its activities to Wallonia and now has a network of research centres, hospitals, and libraries, all with cutting-edge equipment.

The 'L' in ULB's name stands for 'libre'. What does this mean for us? It refers to an attitude of free thinking, as adopted by free individuals, who reject all dogma and totalitarian ideas. It signifies our moral commitment to always keep our freedom of conscience. This means that through their teachings, our University's academic staff will develop your critical thinking skills and train you to engage in free thinking.

Ever since its creation, our University has been cultivating the flame of freedom; it has constantly demonstrated its independence and its commitment to the great struggles for democracy, individual liberties and human rights.

RESEARCH-ORIENTED STUDIES

Our masters are cutting edge programmes, where teaching is organised in close synergy with research; courses are built on a tradition of high-level research and on fields of research in which ULB has specific expertise. Through seminars, personal assignments, and a master's thesis, students get involved in ULB's research activities and implement appropriate research methods, under the supervision of lecturer-researchers.

In addition, most research-oriented master programmes include a mandatory internship in a laboratory or a research centre.

CLASSES IN FRENCH

As a French-speaking university, the Université libre de Bruxelles offers most of its classes in French; however, an increasing number of master programmes are taught partly or entirely in English, or even in other languages. If you come from abroad, studying at ULB will enable you to develop your proficiency in French while enjoying the multi-lingual environment of the capital of Europe.





Studying in Brussels will enable you to make valuable contacts and build a network that will be helpful in your career

STUDYING AT ULB

LIBRARIES

The purpose of ULB's libraries is to acquire, manage, and make available to the university community any documentary resources necessary for teaching or research activities, and to provide users with training on information retrieval. In order to carry out their mission, the libraries have to offer an increasing variety of activities, which are often directly related to the development of information and communication technologies (ITC).

ULB's five libraries offer over 1,200,000 books, nearly 3,000 seats, and hundreds of browsing stations, making them ideal places to study.

CULTURE – SPORTS – LEISURE

Succeeding in one's studies requires a careful balance of work and play. This makes Brussels an idea city for students, given its incredibly diverse opportunities for cultural and sports activities, and ULB campuses are no exception. The University also has its own radio station, **Radio Campus**, broadcasting on 92.1 FM. At **ULB Sports**, students can choose among over 45 different athletic activities.

ULB Culture offers an impressive range of outings and activities, such as music, dancing, painting, theatre... In addition, the University has a number of **museums** available to students, some of which are also open to the public. Finally, student clubs offer cultural activities (lectures, field trips, etc.) and student folklore events (often highly enjoyable, never mandatory).



Enrolment

Any holder of a bachelor's degree (or equivalent) can apply to enrol in a master programme at ULB. For questions about your application, the application schedule, and the University's decision, please see: www.ulb.be/inscriptions

For information... INFOR-ETUDES

In addition to the international students' portal (www.ulb.be/international/students/en/), the INFOR-études department can provide information on study programmes and admission criteria. It will help you compare programmes and answer your questions on professional prospects for each branch.

STUDY COSTS

TUITION FEES (2017, subject to change)

- › **Regular fees:** €835;
- › **Learning material:** (course notes, textbooks, handouts...) : from €250 to €500, depending on the type of studies.
- › **Transportation costs:** see www.b-rail.be and www.stib.be for information on SNCB and STIB passes.
- › **Accommodation:** rooms in Brussels can be rented for around €400, excluding utilities.
- › **Food:** ULB cafeterias give a discount to holders of a student card. The lunch menu costs less than €6. There are also many snack-bars and restaurants located all around the campuses.
- › **Health:** the ULB medical centre has general medicine and specialist consultations, fully covered by your health insurance.
- › **Miscellaneous:** mobile phone, personal computer and equipment, clothing, leisure...

STUDENT MOBILITY

For many years, ULB has had a strong tradition of welcoming students from around the world. With one third of students coming from abroad and just as much variety within its teaching staff, ULB promotes cultural exchange.

Students looking to open up to the world and enjoy a diversity of experiences will be happy to learn that they can study in a foreign country for one term, an entire year, or the duration of an internship, thanks to the Erasmus+ programme and other partnership agreements with non-EU universities.

Several faculties also give their students opportunities to venture outside ULB for an internship, classes, or work in a laboratory in another Belgian university.

In addition, ULB has signed over 250 agreements with university both inside and outside the EU, and developed 120 international research projects (including the Marie Curie network) that promote researcher mobility and exchanges.

Learn more:

Exchange programme unit:

<http://www.ulb.ac.be/enseignements/cpe/index2.html>

ACCOMMODATION

In order to create the best environment for its students, ULB offers a wide choice of student accommodation in its own halls of residence and in private halls of residence, either on- or off-campus. Prices vary depending on amenities and comfort.

You can choose from many kinds of accommodation: student rooms (known locally as 'kots') in ULB halls of residence or private halls of residence; apartments (furnished or unfurnished); studios; shared apartments or houses; intergenerational housing; and so on.

The ULB Accommodation Office is the central repository for accommodation offers, and it provides information on the terms and practices of renting. The Accommodation Office has a database available to help you find accommodation.

A TYPICAL ACADEMIC YEAR

The academic calendar is defined by law for the entire French Community of Belgium. It is divided into 3 terms:

- the 1st term starts on September 14,
- the 2nd term on February 1,
- and the 3rd term on July 1.

At the conclusion of each term, a period of evaluation tests students on the courses they have followed during that term, possibly also covering previous material.



GREEN CAMPUSES

One of the reasons why ULB campuses are so appealing is their remarkable location in the heart of the Belgian capital. The Solbosch and La Plaine campuses, in Ixelles, are near the city centre and easily accessible by public transport; they are also next to the Bois de la Cambre park, giving the university both an urban and a natural appeal.

The Faculty of Medicine's campus is located in Anderlecht, on the outskirts of Brussels, in a pleasant environment that can be reached by metro ('Erasme' station).

When students need to relax after a day of classes, Brussels also has lots to offer: swimming pools, gyms, cinemas, theatres, night clubs, bars... in case the many cultural and athletic activities on campus leave you wanting more!



THE ACADEMIC PROGRAMME ORGANISED AT ULB MASTERS FULLY TAUGHT IN ENGLISH DURING THE ACADEMIC YEAR 2017-2018

Master 60 Credits: one-year master programmes

- Master in **Biomedicine** (60 Credits), Faculty of Medicine 12
- Master in **Political Science: General** (60 credits), Faculty of Philosophy and Social Sciences 13

Master 120 credits: two-year master programmes

- Master of science in **Architecture and Engineering**, Brussels School of Engineering 14
- Master of science in **Chemical and Materials Engineering**, Brussels School of Engineering 15
- Master of science in **Civil Engineering**, Brussels School of Engineering 16
- Master in **Computer Science**, Faculty of Sciences 17
- Master of science in **Computer Science and Engineering**, Brussels School of Engineering 18
- Master in **Cybersecurity**, Faculty of Sciences 19
- Master in **Economics: General**, Solvay Brussels School of Economics and Management 20
- Master in **Economics, Econometrics**, Solvay Brussels School of Economics and Management 21
- Master of science in **Electrical Engineering**, Brussels School of Engineering 22
- Master of science in **Electromechanical Engineering**, Brussels School of Engineering 23
- Master in **Geography: Urban Studies**, Faculty of Sciences 24
- Master in **Geography: Euromaster 4 CITIES**, Faculty of Sciences 24
- Master in **Management Science**, Solvay Brussels School of Economics and Management 25
- Master of science in **Physical Engineering**, Brussels School of Engineering 26

Specialized Master

- Specialized Master Degree in **Microfinance**, Solvay Brussels School of Economics and Management... 27
- Specialized Master Degree in **Nuclear Engineering**, Brussels School of Engineering 28
- Specialized Master Degree in **Public Health Methodology**, School of Public Health 29

Erasmus Mundus Master programmes

- **Big Data Management and Analytics (BDMA)**, Brussels School of Engineering 30
- **Tropical Biodiversity and Ecosystems (Tropimundo)**, Faculty of Sciences 31

Field of study:

Economics

- Master in **Economics: General**, Solvay Brussels School of Economics and Management 20
- Master in **Economics, Econometrics**, Solvay Brussels School of Economics and Management 21
- Master in **Management Science**, Solvay Brussels School of Economics and Management 25
- Specialized Master Degree in **Microfinance**, Solvay Brussels School of Economics and Management... 27

Engineering

- Master of science in **Architecture and Engineering**, Brussels School of Engineering 14
- Master of science in **Chemical and Materials Engineering**, Brussels School of Engineering 15
- Master of science in **Civil Engineering**, Brussels School of Engineering 16
- Master of science in **Computer Science and Engineering**, Brussels School of Engineering 18
- Master of science in **Electrical Engineering**, Brussels School of Engineering 22
- Master of science in **Electromechanical Engineering**, Brussels School of Engineering 23
- Master of science in **Physical Engineering**, Brussels School of Engineering 26
- Specialized Master Degree in **Nuclear Engineering**, Brussels School of Engineering 28
- Erasmus Mundus **Big Data Management and Analytics (BDMA)**, Brussels School of Engineering 30

Medicine

- Master in **Biomedicine** (60 Credits), Faculty of Medicine 12
- Specialized Master Degree in **Public Health Methodology**, School of Public Health 29

Political science

- Master in **Political Science: General** (60 credits), Faculty of Philosophy and Social Sciences 13

Sciences

- Master in **Computer science**, Faculty of Sciences 17
- Master in **Cybersecurity**, Faculty of Sciences 19
- Erasmus Mundus **Tropical Biodiversity and Ecosystems (Tropimundo)**, Faculty of Sciences 31

Interdisciplinary

- Master in **Geography: Urban Studies**, Faculty of Sciences 24
- Master in **Geography: Euromaster 4 CITIES**, Faculty of Sciences 24



FACULTY OF MEDICINE

MASTER IN BIOMEDICINE

One-year Master Programme

PROGRAMME OBJECTIVES

Personalized medicine aims to transform healthcare by tailoring therapies to the individual characteristics and needs of each patient. This requires an efficient translation of fundamental research findings into standard care.

The short master in translational medicine is a one-year (60 credits), full English programme designed to train students in medical sciences or associated areas on how to apply relevant findings derived from fundamental research to newly patient-oriented diagnostic approaches and therapies.

This programme offers substantial training in pre-clinical and clinical aspects of personalized medicine, as well as fundamental knowledge and interdisciplinary skills necessary to interact with experts and colleagues from a wide range of disciplines who will shape the future of medicine.

PROGRAMME STRUCTURE AND CONTENT

During the first semester, students will foster their knowledge of the molecular aspects of pharmacology, clinical biology and pathology, genetics and oncology, developmental genetics, bioinformatics and neurosciences.

During the second semester they will prepare their Master thesis and attend:

- A unique interdisciplinary and interfaculty programme in translational medicine covering preclinical, clinical, regulatory, patenting, business, management and patient-focused topics.
- A module on pre-clinical and clinical research providing insights into state-of-the-art in vitro and in vivo research tools and methods to perform translational research and into the choice of adequate research models and proper experimental design. The module will also cover current and innovative technologies for drug discovery, in vitro and in vivo pre-clinical safety assessment of newly discovered drugs, and their validation through clinical trials. Intellectual property, clinical study design, quality control, as well as legal and ethical requirements in clinical investigation will also be discussed.
- A module on translational research in selected disease areas that will illustrate the bed-to-bench and back again (3B) principle of translational medicine through the approach of case-studies in relevant diseases.

CAREER OPPORTUNITIES

Students who graduate in Biomedical sciences - translational medicine will be able to pursue careers in health institutions and companies e.g: biotech and pharmaceutical companies, contract research organizations, governmental and non-governmental organizations (e.g. regulatory agencies), patient associations.

Important: to access a PhD programme, the one-year Master must be accompanied/completed by a two-year (120 credits) Master in a relevant discipline.

NB 45 credits from the one-year Master programme can be validated in the two-year Master programme in Biomedical sciences.

PROGRAMME LOCATION

Campus Erasme.

The Master thesis will be done in the research laboratories of the faculty of Medicine or of hospitals associated with ULB and in biotech and pharmaceutical companies.

BENEFITS OF THE ULB PROGRAMME

The MA in Biomedical sciences (60 credits) is inspired by new initiatives aiming to develop translational research programmes to foster the transfer of scientific preclinical knowledge into clinical practice to make personalized medicine become a reality.

Taught exclusively in English, the MA 60 will enable non-French speaking students to extend their basic training and to prepare a doctorate in one of the Faculty's laboratories and/or an internship in one of our hospital services.

More information

www.ULB.BE/programme/MA-BIME

www.ulb.be/facs/medecine/

Tel: +32 2 555 30 86



FACULTY OF PHILOSOPHY AND SOCIAL SCIENCES

MASTER IN POLITICAL SCIENCE

CAREER OPPORTUNITIES

Students gaining a one-year (60 credits) Master degree in political science may, thanks to this continuing education programme, orient or re-orient their professional careers towards a whole range of jobs in different sectors: Belgian and European public administration, international careers, teaching and research, jobs in the field of politics and sociology, careers in public relations and journalism, consultancy, forecasting in the private sector (geopolitics, geostrategy,...), for example in the banking and insurance sectors.

- Work at all levels in politics and social affairs (political parties, trade unions, employer organisations, pressure groups) and political offices.
- Civil service occupations at local, regional, national and European level, international careers (diplomatic service, international institutions such as the UN, OECD or the Council of Europe)
- Supervisor in the non-profit sector (a registered charity, NGO, humanitarian organisation, in a local community/ administration)

Analyst in the private sector (e.g. the banking sector)

Public relations and journalism (printed press, broadcasting): spokesperson, journalist, PR officer

BENEFITS OF THE ULB PROGRAMME

The specific feature of the one-year Master programme (60 credits) is its focus on continuing education and career re-orientation.

More information

www.ULB.be/programme/MA-POLI

www.philoscsoc.ulb.be

Tel: + 32 2 650 30 77

marie-therese.teixeira@ulb.ac.be

PROGRAMME OBJECTIVES

The one-year Master programme (60 credits) in political science aims to provide a continuing education, of use for students wishing to enhance their university background or re-orient their professional career. With this in mind, two programmes are offered, a daytime course in English and an evening/weekend course in French.

PROGRAMME STRUCTURE

Teaching focuses on two areas: political science and international relations. The first looks at issues of power and political action at national, subnational, European and international levels, while the second looks more at foreign policy, security and conflict resolution issues.

BRUSSELS SCHOOL OF ENGINEERING

MASTER OF SCIENCE IN ARCHITECTURE AND ENGINEERING

PROGRAMME OBJECTIVES

The Master of Science in Architectural Engineering involves a study programme in which architecture and construction engineering are closely intertwined. The learning objectives combine the mastering of construction engineering and the skills to design buildings, i.e. to create meaningful places that favour the well-being of their future users. Students acquire the advanced scientific knowledge and attitudes specific to construction and architecture sciences and to research. Students learn to design and detail complex sustainable buildings, with special focus on their functions, load bearing structure, their equipment and the technologies they require.

PROGRAMME STRUCTURE

The multidisciplinary approach of this programme covers architecture, architectural engineering and construction engineering. The architecture design studio (28 ECTS, 23% of the programme) focuses on urban and sustainable architecture and on a design-oriented approach combining architecture and architectural engineering. Architectural engineering and construction account for 52 ECTS (43% of the programme), including sustainable construction, management of projects related to civil engineering, structural engineering, material engineering, geotechnical engineering and numerical modelling in civil engineering. An internship of 10 ECTS can be carried out at the start of Master 2 and the programme ends with a Master thesis of 24 ECTS that can be related to a design project in architectural engineering.

BENEFITS OF THE ULB PROGRAMME

The Master of Science in Architecture and Engineering at ULB attributes a central role to the construction process and highlights the role of the project supervisor, capable of running a complex building project. The teaching programme specifically focuses on the skills required to design, coordinate and carry out large-scale projects in a multi-disciplinary environment.

CAREER OPPORTUNITIES

The Master degree allows direct access to a broad range of professions in architecture and construction engineering, among which:

- » Architectural engineer
- » Architect
- » Consultant engineer
- » Research engineer
- » Engineer in a consultancy or architecture firm.

The Master of Science in Architectural and Engineering also prepares for a research career in architectural engineering or architecture.

Architectural engineers also have access to specific job opportunities, distinct from those open to architects and civil engineers. Large construction projects require, from the start of the design phase to the completion of the construction project, a project leader who can integrate and coordinate the aesthetic, programmatic, structural and technical aspects of the project. The evolution of the building industry and the equipment used in contemporary architecture projects render this synthesis ever more complex and require an integrated approach.

More information

www.ULB.be/programme/en/MA-IRAR

www.polytechniquebruxelles.be

Tel.: + 32 2 650 40 93



This Master (Master of Science in Architecture and Engineering) is taught completely in English at BRUFACE (Brussels Faculty of Engineering) in collaboration with VUB - www.bruface.eu

MASTER OF SCIENCE IN CHEMICAL AND MATERIALS ENGINEERING

PROGRAMME OBJECTIVES

The ULB curriculum in chemical and materials engineering offers a high-level and multidisciplinary training. The courses are designed to ensure that students become proficient in the fields of fluid mechanics, transport phenomena, molecular engineering and in the synthesis and characterization of material and chemical compounds. Students will acquire competences essential to develop innovative technologies in a wide range of industrial sectors.

The skills of a civil engineer in chemistry and materials science are of primary importance to meet the challenges of today and tomorrow's world : new materials, sustainable development, renewable energy, health...

PROGRAMME STRUCTURE

The programme focuses on:

- » Synthesis and characterization of chemical and material compounds
- » Study of the structure-properties relationship of molecules and materials
- » Instrumentation, modeling and (bio)process design
- » Fluid dynamics, transport phenomena and industrial processes
- » Recycling, environment and pollution control
- » Introduction to the safety of industrial installations and biotechnologies

The Master programme (120 ECTS - 2 years) is characterized by a broad common core (56 ECTS spread over the two years) covering different fields of chemical and materials engineering, including the fundamental properties of materials and environmental technologies.

Two options are available (30 ECTS spread over the two years):

- » **Process Technology:** to gain expertise in process control, from the development and use of modeling tools to process implementation.
- » **Materials Science:** advanced teaching on a wide range of topics from design and synthesis of products and materials to their elaboration and the study of their properties.

Students complete their programme with an *internship* and/or with optional learning units accounting for at least 10 ECTS. If they wish, they can also follow an *Entrepreneurship* module.

Finally, a master's thesis (24 ECTS) needs to be prepared in one of the laboratories. This can be done in collaboration with an industry, a research centre or a cooperation unit.

BENEFITS OF THE ULB PROGRAMME

The ULB, located in the heart of Europe, offers an **international environment**: the **master taught in English** attracts students from all over the world and provides the keys for professional mobility.

Multi-skill training preparing students to work either in a research environment or in industry: during the project, master's thesis or internship, students are exposed to state-of-the-art research and are integrated into laboratories and industrial projects.

A **first professional experience**: the long-term internship is a real opportunity to put training into practice and to start a professional network.

CAREER OPPORTUNITIES

Chemical and materials engineers work not only in the chemical and pharmaceutical sectors, food industries and in materials production (advanced materials, polymers, nanomaterials, paints, cosmetics, metal alloys...), but also in engineering and consultancy firms, research centres, public services, NGOs ...

They also find positions in multidisciplinary teams in numerous sectors: aeronautics, electronics, biotechnologies, environmental technologies, construction technologies, etc. Professions: Production engineers, Research engineers, Experts in many fields.

More information

www.ULB.be/programme/en/MA-IRMA

www.polytechniquebruxelles.be

Tel.: + 32 2 650 20 48



This Master (Master of Science in Chemical and Materials Engineering) is taught completely in English at BRUFACE (Brussels Faculty of Engineering) in collaboration with VUB

www.bruface.eu

BRUSSELS SCHOOL OF ENGINEERING

MASTER OF SCIENCE IN CIVIL ENGINEERING

PROGRAMME OBJECTIVES

The ULB civil engineering programme trains graduates for a broad range of jobs in the construction sector, qualifying them for positions in technical consultancies and supervisory centres (construction design), general companies (site management), administration, etc.

Students acquire knowledge of the properties of materials, understanding of structural mechanisms (geotechnics, structure stability) and also develop general construction skills (project management, architectural integration, environmental aspects).

The teaching methods encourage project teamwork and enable participants to develop the essential skills for pursuing a rewarding career. Students thus acquire skills that are both geared towards specific applications and versatile.

PROGRAMME STRUCTURE

The programme aims at developing general skills for civil engineering applications, including design and structural mechanics, mastering of geomaterials, project management skills and integrated water resources management.

To reach these objectives, the Master programme focuses on design methodology. The programme builds on the scientific knowledge and competencies acquired during the Bachelor.

During the programme, emphasis is put on simulation tools for structures and materials, which allow the modelling of physical reality by state of the art models treated mathematically or computationally.

Geotechnical and environmental aspects also require specific approaches for the natural materials (soils, rocks) that have to be dealt with in any construction project.

The lectures, seminars and lab sessions are complemented by projects and a Master thesis. Three options (three modules) are available in MA2: structures, construction and geomaterials, water resources.

BENEFITS OF THE ULB PROGRAMME

The programme is taught by both full-time university lecturers and other lecturers working mainly in public sector departments and national or international companies. Alongside this integrated approach, the Master programme also has an international dimension as it offers students the opportunity to do an Erasmus exchange or to do their first year at VUB.

- » Organisation of internships
- » Teaching in English in partnership with VUB.

CAREER OPPORTUNITIES

Civil engineering accounts for an important part of industrial activity in Europe. The nature of this field implies a broad diversity of activities: public services, building developments and industrial constructions. Thanks to their curriculum, civil engineers who have studied at ULB can work in a variety of fields: construction management, engineering design offices, etc ...

The comprehensive education of our civil engineers enables them to integrate other fields in which their expertise is valued: aerospace industry, consultancy, IT industry, ...

More information

www.ULB.be/programme/en/MA-IRCN

www.polytechniquebruxelles.be

Tel.: + 32 2 650 40 93



This Master (Master of Science in Civil Engineering) is taught completely in English at BRUFACE (Brussels Faculty of Engineering) in collaboration with VUB
www.bruface.eu

MASTER IN COMPUTER SCIENCE

PROGRAMME OBJECTIVES

The Master programme aims to train students to either start a PhD programme in Computer science or, where the majority of students are concerned, to be a highly competent and skilled computer scientist in the IT industry. We want to educate the next generation of IT executives and managers who are aware of their role in society, are autonomous and are able to efficiently acquire new knowledge throughout their career.

PROGRAMME STRUCTURE

The Master programme is organized around three main axes: computer science topics, an introduction to research through the writing of a master thesis and courses to prepare the student to enter the job market and industry.

The Master programme is designed for students who have general competences in computer science such as the ones acquired during the Bachelor in Computer Science at ULB; i.e. students who:

- » are able to gather information and acquire new knowledge autonomously, with scientific rigour and who are able to adopt a critical attitude during this process;
- » master the main mathematical and formal tools needed in Computer Science;
- » can read technical literature in English and to engage in a technical conversation in English as most of the courses in our Master are taught in that language (with a few exceptions for optional courses);
- » master the main concepts and competences related to programming, programming languages, algorithms, software engineering, operating systems and fundamental theoretical results in computer science;
- » are able to design alone, or within a group, a computer application of representative complexity, using tools from software engineering efficiently.

Students who have not acquired the appropriate background during their Bachelor may in some circumstances have the opportunity to compensate for their weaknesses through an adapted programme of studies.

BENEFITS OF THE ULB PROGRAMME

The Master programme involves advanced classes benefiting from the input of internationally recognised research projects carried out by researchers at either ULB or VUB (Vrije Universiteit Brussel).

In the second year of the Master, the students can opt for an internship in a company or in a research centre. The internship is worth 15 credits and lasts 3 months full time

The Master programme is taught in English and therefore attracts international students.

CAREER OPPORTUNITIES

Our former students are active in a large variety of sectors ranging from banks, insurance companies, software industry, consultancy, hospitals, schools, universities, to national and international administrations... etc. They work as project leaders, IT specialists, network architects, security experts, teachers, lecturers and researchers. Some have their own business, and other are top managers in administrations.

- » Project leader
- » IT specialist and consultant
- » IT administrator
- » Security specialist
- » Teachers and lecturers
- » Researchers

More information

www.ULB.be/programme/en/MA-INFO

www.ULB.be/facs/sciences/

Tel: +32 2 650 56 14

In partnership with the VUB and the Université de Nantes

BRUSSELS SCHOOL OF ENGINEERING

MASTER OF SCIENCE IN COMPUTER SCIENCE AND ENGINEERING

PROGRAMME OBJECTIVES

The Master of Science in Computer Science and Engineering provides top quality scientific training in information technology. It trains engineers to design, implement, correct and maintain complex computer-based systems through a thorough understanding of the underlying algorithms, software and hardware aspects. The skills developed cover both the essential concepts of modern information technology and the technical characteristics associated with civil engineering training. The project-directed training helps students to develop practical skills in this field.

PROGRAMME STRUCTURE

The 120 ECTS programme covers a wide range of computer science topics including:

- » "*Computational Intelligence*", which permits the development of adaptive mechanisms capable of intelligent behavior in complex and dynamic environments.
- » "*Software and critical system design*" which covers the fundamental concepts of computer science and its practical applications, especially in the development of software applications.
- » "*Web and Information Systems*", which covers the management of digital information, both in structured form as in traditional databases and in semi-structured form on the web. It also covers business intelligence and the development of web applications.
- » "*3D Graphics and Image Processing*", which addresses the technologies related to the acquisition, processing and synthesis of multimedia data.
- » "*Optimization and Algorithms*", which covers the design of advanced algorithms and operations research, with a focus on optimization methods, network applications and computational geometry.
- » "*Computer Engineering*", which concerns the integrated development of hardware and software.
- » "Entrepreneurship and Management", which concerns computer-science specific issues such as the governance of IT firms and also broader topics such as leadership, finance and entrepreneurship.

BENEFITS OF THE ULB PROGRAMME

This Master combines the multi-faceted skill set of civil engineers with expertise in computer and information technology. Thanks to their multi-faceted civil engineering background, graduates of this programme constitute privileged participants in multi-disciplinary projects. They have a good understanding of the technological issues and industrial constraints of the field in which the computer-based solutions are to be implemented, and can therefore ensure optimal solutions.

CAREER OPPORTUNITIES

Our students find jobs in:

- » sectors where the main activity involves of the transmission of information (i.e., telecommunications and computer networks);
- » sectors where the main activity involves the processing of information (banks, insurance, general administration);
- » the manufacturing industry, where there is an ever-growing demand for automation and computer support, not only at management level (e.g., Business Intelligence) but also on the level of production processes (with a strong trend towards integration of the two);
- » sectors that develop new activities with the aid of computer technology (multimedia, bio-informatics, ...);
- » research centres.

More information

www.ULB.be/programme/en/MA-IRIF

www.polytechniquebruxelles.be

Tel.: + 32 2 650 40 93

MASTER IN CYBERSECURITY

PROGRAMME OBJECTIVES

The Master in Cybersecurity programme trains students for a career in information security, management of security and security engineering in the IT industry.

We aim to educate ethical men and women who are fully autonomous, self-learning, dedicated to their role in society, self-evolving throughout their careers and who have a high level of expertise in IT security.

The Master programme is offered by four academic partners (Université libre de Bruxelles, Université catholique de Louvain, Université de Namur and the Royal Military Academy) and two higher education institutions (Haute École Bruxelles-Brabant and Haute Ecole Libre de Bruxelles) that together award a single diploma. All lectures are taught in a rich, multi-disciplinary and multi-cultural environment.

PROGRAMME STRUCTURE

The programme is organized around five specific and complementary key disciplines: (1) cryptography, (2) systems and Networks, (3) legal, ethical and human issues, (3) security management and (5) secure software engineering.

The first year of the programme is devoted to a common set of courses. Seminars and optional courses are also offered in order to have an up-to-date and lively programme. 10 credits can be earned from electives followed at participating academic institutions.

In the second year, half the credits are earned from courses related to one of the two available focuses: “system design and analysis”, i.e. the design and thorough analysis of secure systems, and a more applied focus called “corporate strategies”. Both focuses are built around students’ personal involvement and self-learning through several projects. In addition, a significant number of competences are acquired during the mandatory long-term internship in industry (typically 10 weeks).

Students participate in projects and challenges that complement the expertise and practical know-how required by the IT industry. They apply concepts presented during lectures and learn new material by solving challenges.

At the end of the cursus, students prepare a Master thesis under the supervision of a lecturer doing research in the field.

CAREER OPPORTUNITIES

Our students are active in a wide variety of domains, ranging from telecommunications, software industry, public administrations, armed forces, law enforcement, banks etc. and national or international institutions.

The main positions for cybersecurity experts are typically:

- » Chief Security Officer (CSO)
- » Law enforcement officer
- » Computer emergency response team member
- » Security architect
- » Network architect
- » Security analyst, consultant and auditor
- » Forensics expert
- » Researcher.

Plus d'information

www.ULB.be/programme/en/MA-SECU

<http://masterincybersecurity.eu>

ma-secu@ulb.ac.be



SOLVAY BRUSSELS SCHOOL OF ECONOMICS AND MANAGEMENT

MASTER IN ECONOMICS, GENERAL

Two-year Master Programme

PROGRAMME OBJECTIVES

The Master in Economics trains students to become applied economists, policymakers, consultants and business professionals in sectors and jobs requiring technical and analytical skills. It provides them with up-to-date quantitative and conceptual tools for economic, statistical and financial analysis, and prepares them for policy and business practice. The two focuses have a strong European flavour which manifests itself in specialised courses (such as European competition policy) or in the careful consideration, in other courses, of the specifics of the European dimension.

The Master in Economics is available in two variants:

- The Master in Business Economics (100% English) develops students' grasp of business, economics and policy issues, and highlights their interactions (e.g. finance and financial regulation, strategy and competition policy, regulation and lobbying etc.).
- The Master in "Economic Analysis and European Policy" (90% English, 10% French) covers the full range of economic issues (employment, competition, growth, development, redistribution etc.) and policy-making challenges, from the sector- or industry-level to the national economy and the world.

CAREER OPPORTUNITIES

Our graduates typically find work as applied economists, policymakers, consultants and business professionals in sectors and jobs requiring advanced knowledge of how the economy works and strong technical and analytical skills, including:

- Executive, analyst or project manager in national and international public or private organizations, including NGOs
- Strategy or economic consultant
- Auditor and management control
- Business analyst and IT consultant
- Regulator or analyst in policy think tanks
- Executive in the financial, industrial and services sectors.

BENEFITS OF THE ULB PROGRAMME

- A location in the **heart of Europe**, as **part of a complete research university**, *Université libre de Bruxelles*.
- An **international faculty** with high-level researchers and accomplished practitioners who work together to ensure that the training provided is both **relevant** for business and policy practice and corresponds to **the state of art**.

- A **tradition of rigorous and demanding curricula** based on solid multidisciplinary and analytical training, and the promotion of critical thinking and problem solving skills.
- A **diversity of teaching methods** that are constantly revised to ensure teaching effectiveness.
- A **diverse and international student body** (up to 80% international students in some master programmes).
- A **complete programme offering** covering educational needs in economics and business from bachelor to in-company training.
- **Accreditation** from EQUIS and AMBA. AACSB accreditation is underway.

CAREER SERVICES

- Credited Internships (full-time, for minimum 3 months - maximum 6 months)
- Career Services
- From graduation onwards, students benefit from a strong and active alumni network with about 21,500 members in 65 countries.

STUDY-ABROAD PROGRAMMES

The Masters in Economics offers several opportunities to study abroad:

- An international exchange programme, with more than 110 partner universities in 40 countries
- A double degree programme with LUISS Guido Carli University in Rome (Economic Analysis & European Policy)
- A master with the QTEM network (Business Economics)

More information

www.ULB.be/programme/MA-ECON
www.solvay.edu/bachelors-masters
masters.solvay@ulb.ac.be



SOLVAY BRUSSELS SCHOOL OF ECONOMICS AND MANAGEMENT

MASTER IN ECONOMICS, ECONOMETRICS

Two-year Master Programme

PROGRAMME OBJECTIVES

The Research Master in Economics or in Economics and Statistics provides students with the theoretical and statistical tools to pursue advanced analysis and research in economics.

The programme is available in two variants:

- >> A Master in Research in Economics provides general training in all areas of economics
- >> A Master in Research in Economics and Statistics offers students the possibility to specialize at the boundary between economics and statistics.

PROGRAMME STRUCTURE

Both variants of the Master involve both compulsory core courses and optional courses, and require the writing of a master thesis.

The programme in Research in Economics offers two specialization tracks:

- >> Advanced Methods
- >> Topics in Economics

The programme in Research in Economics and Statistics offers two specialization tracks:

- >> Economics
- >> Statistics

BENEFITS OF THE ULB PROGRAMME

- A location in the **heart of Europe**, as **part of a complete research university**, *Université libre de Bruxelles*.
- An **international faculty**, with high-level researchers and accomplished practitioners who work together to ensure that the training provided is both **relevant** for business and policy practice and corresponds to the **state of art**.
- A **tradition of rigorous and demanding curricula** based on solid multidisciplinary and analytical training, and the promotion of critical thinking and problem solving skills.
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- A **complete programme offering** covering educational needs in economics and business from bachelor to in-company training.
- **Accreditation** from EQUIS and AMBA. The AACSB accreditation is underway.

CAREER SERVICES

- Credited Internships (full-time, for minimum 3 months - maximum 6 months)
- Career Services
- From graduation onwards, students benefit from a strong and active alumni network with about 21,500 members in 65 countries.

More information

www.ULB.be/programme/en/MA-ECOE

www.solvay.edu/bachelors-masters

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BRUSSELS SCHOOL OF ENGINEERING

MASTER OF SCIENCE IN ELECTRICAL ENGINEERING

PROGRAMME OBJECTIVES

Electrical engineers trained at ULB are well placed to respond to market needs of technical consultants, companies, administration departments and research centres. They are capable of analysing and setting up complex industrial processes, i.e. measuring physical quantities for electricity and transporting it remotely, drawing up control algorithms, assessing system failure risks and detecting them when they occur, creating human-machine interfaces and measuring the impact of devices they create on other electrical systems and the environment. Their training enables them to help meet the challenge of supplying constant high-quality electrical energy and of finding the most rational way to use it. Electricity is also an information vector (for data, voice communication and image transfer) in industrial processes and in our daily lives and this information needs to be produced, processed and transported. Electrical engineers possess a solid grounding in areas related to their field, such as electrotechnics, automatic control, instrumentation, signal processing, microelectronics, telecommunications, real time information technology and mathematics.

PROGRAMME STRUCTURE

The Master focuses on 4 domains:

- » Electronics and microelectronics
- » Telecommunication
- » Multimedia
- » Automatic control

BENEFITS OF THE ULB PROGRAMME

The aim of the ULB electrical engineering programme is to maintain as broad a curriculum as possible over four years and then offer options enabling students to increase their knowledge of a more specific area... A 12-week internship can be done at the beginning of the second year of the master. The programme also has an international dimension thanks to the possibility of Erasmus exchanges and good contact with the VUB.

CAREER OPPORTUNITIES

This master programme provides general knowledge in the domain of electronics, telecommunications, industrial control and measurement. Students who have completed the Master of Science in Electrical Engineering are digital experts and will be able to apply for jobs and a broad range of companies and domains.

Examples of such industries include: telecommunications, avionics, user electronics, (smart) cars, chemicals or pharmaceuticals and industrial processes, business IT, robotics, space industry, research in IT technologies, etc. In Europe alone, more than 500 companies are working in at least one of the domains of knowledge of our engineers.

Finally, a recent survey showed that 90% of graduates were hired immediately or within 3 months of graduation.

More information

www.ULB.be/programme/en/MA-IREL

www.polytechniquebruxelles.be

Tel.: + 32 2 650 40 93

In partnership with VUB



This Master (Master of Science in Electrical Engineering) is taught completely in English at BRUFACE (Brussels Faculty of Engineering) in collaboration with VUB
www.bruface.eu



BRUSSELS SCHOOL OF ENGINEERING

MASTER OF SCIENCE IN ELECTROMECHANICAL ENGINEERING

PROGRAMME OBJECTIVES

Aeronautics, automation, mechanical engineering and design, vibrations, robotics, electrical motors, renewable energy, transportation, piston engines, CAD, management, logistics, quality, etc. The majority of companies, whatever their sector, have a growing demand for engineers skilled in electrical, mechanical or electromechanical engineering, and this is why our programme covers so many different domains. Students who opt for the electromechanical engineering specialisation in the third block of their Bachelor programme can continue with a Master in electromechanical engineering, specializing in either management and technology or in electro-mechanics. Both programmes are taught in English; they are co-organised with the Solvay Brussels School of Economics and Management (SBS-EM) and the VUB respectively. The electromechanics specialization is part of the ULB-VUB BRUFACE initiative.

PROGRAMME STRUCTURE

The management and technology Master comprises the following modules: Basics of economics and management, Technology I and II, Processes engineering and operations management, Operations management and logistics, and Management.

The BRUFACE Master comprises the following four options:

- » **Mechatronics-Construction** : the programme aims at delivering Electromechanical Engineers (MSc) who can design, optimize, produce, maintain and apply complex mechanical systems for industry and society.
- » **Aeronautics** : engineers must be familiar with the versatile aspects of state-of-the-art technology in aeronautics and spin-off possibilities in other industries. The goal is to give students insight in all aspects of the construction, exploitation and maintenance of aircraft and spacecraft.
- » **Vehicle Technology and Transport** : engineers must be able to design, control and maintain transportation systems (for humans and goods), with special attention for innovative sustainable vehicle technologies.
- » **Energy** : engineers take part in the design and production activities of current and more advanced systems for the production and exploitation energy.

BENEFITS OF THE ULB PROGRAMME

The projects, end-of-course dissertations, work placements, international exchanges

Looking at the electromechanical engineering specialisation, the block 3 of BA project only accounts for 2 ECTS, thereby hardly encroaching on the wide-ranging base curriculum. This is a CAD project, with either an electrical or mechanical dimension. Block 1 of MA also contains an individual project worth 5 ECTS (with the exception of teamwork-based deve

CAREER OPPORTUNITIES

The advantages of this programme result from the compromise between, on the one hand, important base skills preparing engineers for work in design and management and, on the other hand, a specialisation in a particular discipline. Electromechanical engineers will also find wide-ranging career opportunities in engineering companies, industry, public authorities, research and higher education, and in the services sector.

Though there are a large number of openings in companies in the area of process automation, computerised management, electricity, electronics, etc., the majority of companies in other sectors (chemicals, petrochemicals, metallurgy, etc.) also have a growing need for skilled and versatile electromechanical engineers.

More information

www.ULB.be/programme/en/MA-IREM

www.polytechniquebruxelles.be

Tel.: + 32 2 650 40 93



This Master (Master of Science in Electromechanical Engineering) is taught completely in English at BRUFACE (Brussels Faculty of Engineering) in collaboration with VUB
www.bruface.eu



FACULTY OF SCIENCES

MASTER IN GEOGRAPHY

OPTION URBAN STUDIES

OPTION URBAN STUDIES – EUROMASTER 4 CITIES

PROGRAMME OBJECTIVES

The two urban studies programmes bridge disciplinary limitations to provide students with an array of means and methods for analysing and understanding the specific character of cities. Students are trained to participate in the resolving of urban problems and the development of new strategies to describe and address the ongoing process of globalisation and its localised impacts.

The two urban studies programmes offer a unique training covering theories and models of socio-spatial configurations, spatial analysis techniques (field surveys, semi-structured interviews, statistical methods, i.a.), gathering and representation of spatial information. Theories, models and techniques are discussed and implemented with respect to territorial issues on various levels: neighbourhood, city, region, continent, world-system.

PROGRAMME STRUCTURE

The Master in Geography (option urban studies) is a programme jointly organised by the Université libre de Bruxelles and the Vrije Universiteit Brussel, that offers a strong interdisciplinary perspective on urban studies.

The common core contains a course on Brussels, a course on the European dimension of cities and urbanisation, and a number of theoretical courses introducing students to the field of urban studies. By using Brussels as a unique case study in the programme and by organising various site visits in and around Brussels and excursions to other European cities, we benefit from our location in the centre of Europe. The common core also contains two modules introducing students to various urban methods and research approaches.

Students are expected to choose two elective modules. The elective modules have a disciplinary and/or thematic orientation, enabling students to specialise within subdomains of urban studies, while at the same time acquiring interdisciplinary training at the level of the overall programme.

Alongside the elective modules, the programme also offers a wide range of individual elective courses. Students can also choose to replace one elective module with an internship, allowing students to gain experience in a working environment that is relevant to urban studies, such as an NGO, local government administration, consultancy firm, European network or institution.

The two-year Euromaster 4CITIES involves a semester in four different European capital cities: Brussels, Vienna, Copenhagen and Madrid. 4CITIES is a collaboration between six universities in four countries, with the Vrije Universiteit Brussel in Brussels serving as coordinating institution.

Theory and practice are seen as mirrors, each critically reflecting the other. The city is perceived as an evolving narrative, more dialogic than linear, and students learn to see “The City”, to listen to it, to participate in it, and to understand it, while experimenting with their role in shaping it. The 4CITIES programme is a challenging one, but, for those who embrace its approach, it can be immensely rewarding, inspiring, and transformative.

BENEFITS OF THE ULB PROGRAMME

The two urban studies programmes take advantage of ULB’s location in Brussels and get students to reflect on current issues facing the city, particularly with respect to the development of strategic urban sites. With site visits and fieldwork in and around Brussels and excursions to other European cities, students benefit from our location in the centre of Europe.

The partnership with our sister university VUB enables us to offer students a flexible, modular and interdisciplinary programme, where they can focus on their own interests within the domain of urban studies, and follow a common core of mandatory courses that ensures they develop the necessary urban skills and competences.

Lectures and seminars also take advantage of staff members’ long experience in contractual research for external (public or private) institutions.

CAREER OPPORTUNITIES

The range of career paths followed by alumni is now very broad: planning agencies, public administrations, associations and NGOs, research and teaching on issues of urbanity and urbanism, advice on urban policy, urban project management, urban planning and design, real estate...

More information

Specific conditions apply. Please see the web site for further information on how and when to apply.

Option Urban Studies:

<http://urbanstudies.brussels> - info@masterurbanstudies.eu

Option Urban studies – Euromaster 4 CITIES:

<http://www.4cities.eu> - info@4cities.eu

Benjamin WAYENS

bwayens@ulb.ac.be

In partnership with the VUB



SOLVAY BRUSSELS SCHOOL OF ECONOMICS AND MANAGEMENT

MASTER IN MANAGEMENT SCIENCE

PROGRAMME OBJECTIVES

The Master in Management Science is a demanding programme that aims to train students in all core disciplines and areas relevant for business management. Its key distinguishing features are the size of its common core (advanced compulsory courses) which provide students with a solid base of knowledge and skills, its strong emphasis on analytical skills, and its multi-disciplinary character (law, economics, management, communication and languages) which provides students with a breadth of tools and approaches to evolve in an increasingly complex and dynamic world. A large choice of options allows students to pursue their intellectual interest in all disciplines of management or apply their skills in a supervised consulting project with partner companies.

CAREER OPPORTUNITIES

The comprehensive and multivalent nature of our programme gives our graduates access to a large range of careers, from consulting and audit to executive positions, including:

- Executive in any type of organisation (public, private or NGO) and sector
- Management, strategy and IT consultant
- Auditor or management controller
- Entrepreneur
- Brand Manager

Examples of alumni include

- Bernard de Launoit, Executive President, *Chapelle Musicale Reine Elisabeth*
- Olivier Legrain, Chief Executive Officer, IBA (Biotechnology)
- Natalia Vazilenko, EMEA Channel Partnership, Google
- Daniel Weekers, Chief Executive Officer, Be TV
- Olivier Willocx, Chief Executive Officer, *Chambre de Commerce et Union des Entreprises de Bruxelles* (BECI)

BENEFITS OF THE ULB PROGRAMME

- A location in the **heart of Europe**, within the framework of a **complete research university**, the *Université libre de Bruxelles*.
- An **international faculty** comprising high-level researchers and accomplished practitioners who work together to ensure that the training provided is both **relevant** for business and policy practice and **state of the art**.

- A **tradition of rigorous and demanding curricula** based on solid multidisciplinary and analytical training, and the promotion of critical thinking and problem solving skills.
- A **diversity of teaching methods** that are constantly revised to ensure teaching effectiveness.
- A **diverse and international student body** (up to 80% in some master programmes).
- A **complete programme offering** covering education needs in economics and business from bachelor to in-company training.
- **Accreditation** from EQUIS and AMBA. AACSB accreditation is underway.

CAREER SERVICES

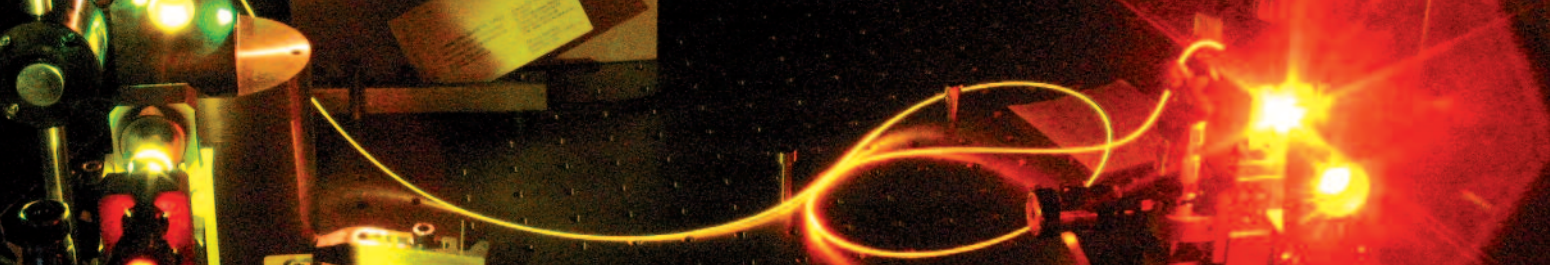
- Credited Internships (full-time, for minimum 3 months - maximum 6 months)
- Career Services
- From graduation onwards, students benefit from a strong and active alumni network with about 21,500 members in 65 countries.

STUDY-ABROAD PROGRAMMES

- An international exchange programme, with more than 110 partner universities in 40 countries
- A master with the QTEM network

More information

www.ULB.be/programme/en/MA-GEST
www.solvay.edu/bachelors-masters
masters.solvay@ulb.ac.be



BRUSSELS SCHOOL OF ENGINEERING

MASTER OF SCIENCE IN PHYSICAL ENGINEERING

Two-year Master Programme

PROGRAMME OBJECTIVES

The Physical Engineering programme focuses on providing a thorough understanding of the physical phenomena on which the latest technologies are based in order to fully understand and improve them, and above all to innovate. Students need a strong grounding in microscopic physics, which involves studying quantum physics and its applications in atomic, molecular, nuclear and solid state physics. Other major fields of physics such as optics and acoustics are also covered, as are advanced mathematics and information technology since they are required for an understanding of modern physics. The curriculum has a broad approach so that successful graduates can seek employment in a number of different fields.

PROGRAMME STRUCTURE

The Physical Engineering curriculum is ideally started as from the third year of the bachelor degree, with an optional module in physics. The latter consists in courses in mathematics, numerical analysis and quantum physics complementary to the ones taught in the first two years, together with introductory courses to solid-state, semiconductor and optics physics. The Physics-Engineering master is however accessible to engineering bachelors with other orientations, provided these few prerequisites are met by the student. The Master curriculum itself consists in a first mandatory year, with modules in applied mathematics, microscopic physics, physical and nuclear engineering, as well as a technical project taking place outside the University, possibly as an internship or in development aid. The second year consists in a master thesis, a true introduction to scientific or technical research conducted inside the École polytechnique or outside (industry, research centre, other faculty or university...). The courses are organised around two main focuses: quantum engineering and photonics, and nuclear energy, science and technology, with a wide choice of optional courses. A 3-month internship can also be done, possibly connected to the thesis, as well as a team-leader project.

BENEFITS OF THE ULB PROGRAMME

The programme is unique in French-speaking Belgium due to its wide scope, involving a generalist polytechnical education and a thorough knowledge of physics. It thus prepares students to work in both industry and research. The nuclear engineering curriculum is specific to ULB and highly regarded in Belgium and abroad. The second year of the master programme can also be done at the French National Institute for Nuclear Science and Technology.

CAREER OPPORTUNITIES

Job opportunities directly targeted by the programme are high-end industrial research, applied and fundamental scientific research (academic institutions and research centres in Belgium and abroad) nuclear industry and associated companies, nuclear control and medical radiation physics, medical engineering and technology, optical telecommunications and photonics. In practice, job opportunities for Physical Engineers are extremely diverse and include all industrial sectors where physics and applied mathematics are present: such as telecommunications environmental technologies, microelectronics data processing, as well as economic sectors where modeling capabilities are particularly appreciated, especially the banking, finance and insurance sectors.

More information

www.ULB.be/programme/en/MA-IRPH

www.polytechniquebruxelles.be

Tel.: + 32 2 650 20 60

Partnerships

Institut National des Sciences et Techniques Nucléaires

Institut Supérieur Industriel de Bruxelles

Université des Sciences et Techniques de Lille



SOLVAY BRUSSELS SCHOOL OF ECONOMICS AND MANAGEMENT

SPECIALIZED MASTER DEGREE IN MICROFINANCE

PROGRAMME OBJECTIVES

The European Microfinance Programme (EMP) was launched in 2005 in response to a growing demand for training in development activities, particularly in microfinance. Currently, the EMP is jointly organised by **three European universities** (Université libre de Bruxelles, Université de Mons and Université de Paris-Dauphine) and **five non-governmental organizations** (ADA, BRS, CERISE, PlaNet Finance and SOS Faim).

The purpose of the programme is to train microfinance professionals from both the North and the South and contribute to the strengthening of microfinance institutions worldwide in accordance with the highest international standards.

The EMP offers a multidisciplinary approach on development issues in the microfinance sector. The programme combines solid theoretical foundations, practical knowledge, and an internship in the field.

The EMP is a particularly international Master. It gathers students from 20 to 30 different countries. Around 50% of them come from Southern countries. The programme provides students with a broad overview of the field of microfinance followed by a compulsory internship in a microfinance institution in a developing country. EMP graduates are well-trained multi-disciplinary professionals, ready to innovatively address the challenges that the sector is facing today.

CAREER OPPORTUNITIES

Career prospects for graduates from the European Microfinance Programme:

- NGOs working in Microfinance
- International Aid Organisations
- MFI Rating Agencies
- Investment Funds
- Research

PROGRAMME STRUCTURE

The European Microfinance Programme is designed in one unit (60 ECTS) and is spread over 3 periods:

- 1st period (September-January): Introductory studies
- 2nd period (February-April): Specialization
- 3rd period (May-August): Internship and Master thesis

BENEFITS OF THE ULB PROGRAMME

The microfinance sector is developing at a rapid pace creating a growing demand for experienced professionals within microfinance and credit institutions, banks and development investment funds in Europe and abroad.

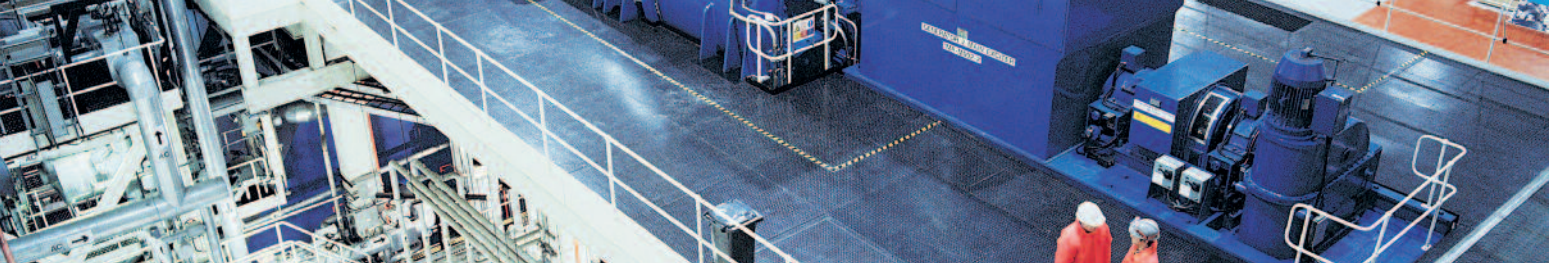
The European Microfinance Programme is the first microfinance education programme with a European scope and perspective. It offers the combined expertise of academics and experts working in the field. Professors from three European universities in Belgium (Université Libre de Bruxelles; Université de Mons) and France (Université Paris Dauphine) provide a solid theoretical foundation. Practitioners from the five non-governmental partner organizations ADA, BRS, CERISE, PlaNet Finance and SOS Faim give insights into the latest techniques used by international microfinance institutions.

More information

www.europeanmicrofinanceprogram.org

emp@ulb.ac.be

Tel: +32 2 650 41 62



BRUSSELS SCHOOL OF ENGINEERING

SPECIALIZED MASTER DEGREE IN NUCLEAR ENGINEERING

PROGRAMME OBJECTIVES

This specialized master programme provides access to the Belgian Nuclear Higher Education Network (BNEN). BNEN is organised by a consortium of six Belgian universities and the Belgian Nuclear Research Centre, SCK•CEN.

The primary objective of the BNEN programme is to train young engineers in nuclear engineering and its applications and to develop and maintain high-level nuclear competences in Belgium and abroad. BNEN catalyses networking between academia, research centres, industry and other nuclear stakeholders.

PROGRAMME STRUCTURE

The condensed BNEN program contains 60 credits in one year, including a master thesis. All teaching activities take place at SCK•CEN. Courses are organised in English and in modules; teaching in blocks of one to three weeks per module permits optimal time management for students and lecturers, facilitates registration for individual modules and ensures easy access for international students.

Students are offered the opportunity to earn credits for part of their basic nuclear education at different places in Europe. Practical laboratory sessions and advanced subjects taught in modules are also offered in order to enrich the programme.

BENEFITS OF THE ULB PROGRAMME

BNEN combines the knowledge and experience in nuclear education of six major Belgian universities with that of the Belgian nuclear research centre. It offers a unique and broad specialized master programme in nuclear engineering, in close interaction with nuclear research and industry. The teaching activities at SCK•CEN give students access to high-level, experimental facilities for lab sessions, under the supervision of the skilled scientists at the research centre.

CAREER OPPORTUNITIES

The BNEN programme enables students to acquire the necessary scientific and technical background and skills to develop a career in the field of nuclear applications, mainly for electricity production. Research in the nuclear sector is an alternative opportunity for BNEN graduates.

More information

<http://bnen.sckcen.be>

Tel.: + 32 2 650 20 60



SCHOOL OF PUBLIC HEALTH

SPECIALIZED MASTER DEGREE IN PUBLIC HEALTH METHODOLOGY

CAREER OPPORTUNITIES

Graduates enter careers in global health and national health policy and planning, academic research, advisory roles in governments and international agencies.

Thanks to the variety of teaching methods and the commitment of academic staff and students, this specialized Master enables health professionals to specialize in the fight against disease and for better health (epidemiology and biostatistics), organization and policy, systems and health services management (health economics, management, health planning and operational research) as well as the development of social approaches to health and transversal skills such as research methodology, scientific writing and capitalization of public health actions.

PROGRAMME OBJECTIVES

The main objective is to provide a large degree of autonomy in the use of public health methods. This programme is intended for researchers, public health professionals and health managers who work at different levels of the health system. It aims to provide them with the specific skills necessary for health system management and the development of analytical and specialized approaches to strengthen their action strategies.

These skills will facilitate the achievement of an overall objective which is to : "ensure methodological approaches and public health decision-makings, consistent with the needs of people, communities and individuals." This Specialized Master thus highlights the methodologies for analysing and investigating major health issues in developing countries, within a global health approach. It also aims to give students a sufficient basis for a systemic understanding of health issues, and of the contextual and environmental factors that determine the responses to them.

PROGRAMME STRUCTURE

This 60 credit (ECTS) programme, which covers different methodological aspects, is composed of a compulsory part (50 ECTS) and an optional part (30 ECTS are proposed and the student must choose at least 10 -with a maximum of 25). The compulsory part of the programme accounts for 50 ECTS:

- Biostatistics (10 ECTS) and Epidemiology (5 ECTS)
- Qualitative methods and contextual factors in public health (5 ECTS)
- Health economics and quality management (5 ECTS)
- Planning and health system research and management (5 ECTS)

- Operational research and lectures (5 ECTS)
- Master Thesis (15 ECTS)

Optional teaching units on:

- Health surveys research (5 ECTS)
- Advanced methods in biostatistics and epidemiology (5 ECTS)
- The WHO strategy for incorporation of traditional medicine in healthcare (5 ECTS)
- Special research questions on public health (5 ECTS)
- Special research questions on emergency situations (5 ECTS)
- Interdisciplinary seminars on translational medicine (5 ECTS)

BENEFITS OF THE ULB PROGRAMME

The programme aims to develop knowledge and skills (competence based development) and also to help students to turn learning into action. At the end of this programme, students will have acquired a large degree of autonomy in the use of Public Health methods and the transposal of this knowledge into professional life.

Thanks to a small class size, we are able to offer close supervision. Students can be in continuous interaction with both academic and administrative staff. Students who come from different contexts may face very different challenges. Individual and close supervision can therefore facilitate dynamic learning. General support is available: in the event of computer problems for example, remedial sessions with student assistants can be arranged. Lecturers are asked to organize regular self-assessment sessions so that students can verify their knowledge and identify any gaps in knowledge, and then rectify the situation before the formal evaluations. Finally, thanks to the collaborative spirit established, the barriers experienced by some students could be lifted by those more comfortable in the subject concerned.

More information

This inter-university programme is organized by : Université libre de Bruxelles (Coordinator), Université catholique de Louvain, Université de Mons.

www.ulb.ac.be/facs/esp/moremc.html

Cathy Ververis - Tel. : **+32 2 555 40 13**



BRUSSELS SCHOOL OF ENGINEERING

ERASMUS MUNDUS JOINT MASTER PROGRAMME IN BIG DATA MANAGEMENT AND ANALYTICS (BDMA)

Erasmus Mundus

PROGRAMME OBJECTIVES

Today, public and private organisations in all sectors face an avalanche of digital data on a daily basis. Data is only of great value once it has been refined and analysed, in order to address well-formulated questions concerning problems of interest. The Erasmus Mundus Joint Master Programme in Big Data Management and Analytics (BDMA) is a unique programme that fully covers all the data management and analytics aspects of Big Data (BD), built on Business Intelligence (BI) foundations, and complemented with horizontal skills. It has been jointly designed and adheres to international studies, being structured in such a way that it covers all the skills that BI and BD specialists require.

CAREER OPPORTUNITIES

BDMA is the follow-up to the IT4BI Erasmus Mundus Joint Master Programme, which successfully trained 5 generations of students. To better align with the new needs of research, education, and industry with respect to Big Data, the consortium has developed a holistic curriculum that blends Business Intelligence with Big Data concepts. Bearing in mind the needs of both industry and Europe, we identified six profiles that we aim to target in our programme, namely, Chief Information Officer, Enterprise Architect, Systems Architect, System Analyst, ICT Consultant, and Database Administrator.

PROGRAMME STRUCTURE

The curriculum is jointly delivered by Université libre de Bruxelles (ULB) in Belgium, Universitat Politècnica de Catalunya (UPC) in Spain, Technische Universität Berlin (TUB) in Germany, Technische Universiteit Eindhoven (TU/e) in the Netherlands and Université François Rabelais Tours (UFRT) in France.

The tuition language is English. The programme targets students with a Bachelor of Science (or a level equivalent to 180 ECTS) with a major in Computer Science with English proficiency corresponding to level B2 of the Common European Framework of Reference for Languages.

More information

<http://cs.ulb.ac.be/emundus/>

bdma_admissions@cs.ulb.ac.be

This e-mail address is being protected from spambots.
You need JavaScript enabled to view it.

<http://bdma.univ-tours.fr/bdma/>

BENEFITS OF THE ULB PROGRAMME

Scholars from academic partners around the world and partners from leading industries in BI, private R&D companies, service companies, public research institutes and public authorities contribute to the programme by training students, providing computers, software, course material, job placements or internship perspectives, as well as financial support. The BDMA consortium prepares graduates not only to respond to today's professional challenges through strong connections with industry needs, but also to continue their studies with a PhD, through strong connections with researchers and innovators.



FACULTY OF SCIENCES

ERASMUS MUNDUS MASTER PROGRAMME IN TROPICAL BIODIVERSITY AND ECOSYSTEMS – TROPIMUNDO

PROGRAMME OBJECTIVES

TROPIMUNDO is an EC-funded and excellence-labelled Erasmus Mundus Masters Programme in Tropical Biodiversity and Ecosystems. Students have the opportunity to focus on botany, zoology and integrative ecosystem approaches in institutions with long-standing worldwide expertise in tropical rainforests and woodlands, and in tropical coastal ecosystems, and to spend an entire semester in the tropics. Specialisation is possible in a large variety of topics such as the study of diversity, dynamics and evolution of tropical and subtropical ecosystems, and the conservation and restoration ecology of natural habitats and their biodiversity.

PROGRAMME STRUCTURE

TROPIMUNDO is a 2-year Master Programme (120 ECTS) offering unique worldwide mobility opportunities. Students spend their first semester at the European institution of their choice, where they follow basic and specialised introductory courses. During the second semester, in situ experience is acquired and specialised field courses are followed in a university in a non-EU country in one or two tropical sites. The third semester involves in-depth specialisation in a European university, different from that of the first semester. In the fourth semester, students return to the university where they commenced the TROPIMUNDO programme for their thesis research.

BENEFITS OF THE ULB PROGRAMME

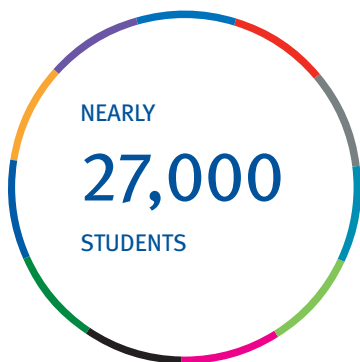
- Study, research and field courses in Amazonian, African, Asian and/or Australian wet tropics with focus on tropical rainforests and woodlands, mangrove forests, seagrass beds and coral reefs.
- Interdisciplinary, in-depth scientific training improving the ability to observe actual ecosystems, make diagnoses, formulate work hypotheses and devise possible practical solutions. Field training in a third-country institution bringing value for both further research and for productivity in management positions requiring effective understanding of ecosystems.
- Socio-cultural world experience, involving intensive contact with different cultures and languages.

CAREER OPPORTUNITIES

- Conservation, management and promotion of ecosystems and biological diversity resources.
- Public-sector jobs in environmental protection and sustainable development; quality control; biosecurity; forensics; continuing education; science dissemination; development cooperation.
- Industrial sector and consulting; pharmaceutical industry, biotechnologies, food industry, environmental technologies.
- Teaching at intermediate and advanced level in non-university institutions; teaching and research in universities and non-university higher education institutions.

More information

<http://www.ulb.ac.be/programme/MA-BIOR/index.html>
www.tropimundo.eu



ULB

UNIVERSITÉ LIBRE DE BRUXELLES

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- › HIGH TEACHING STANDARDS
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With its **12** faculties, ULB covers all areas of study while maintaining a close relationship between teaching and research. It offers nearly **40 bachelor programmes (BA)**, **150 master programmes (MA)**, and **20 PhD programmes** involving nearly **1,900** PhD candidates.

The University provides its students with a strong academic background, cultivates critical thinking skills, and stimulates interest in research, while also reaching out to new student profiles.

InfOR-études

Information, guidance
Contacts with secondary and higher education institutions
T 02 650 36 36 - **M** infor-etudes@ulb.ac.be

www.ULB.be

