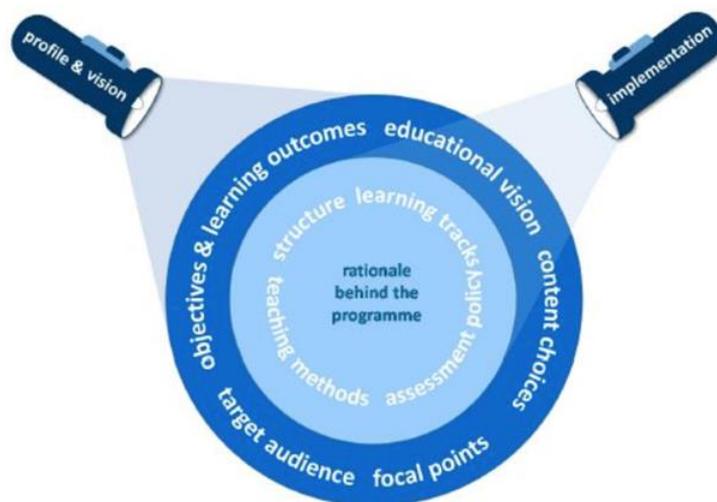# BLUEPRINT

## Bachelor and Master of Business and Information Systems Engineering

### Faculty of Economics and Business

# Blueprint Business and Information Systems Engineering

This blueprint describes the vision and profile (part 1) of the Dutch-language Bachelor handelsingenieur in de beleidsinformatica (180 ECTS) at the Leuven campus, the transfer track within the Bachelor programme toegepaste economische wetenschappen at the Kortrijk campus and the Dutch-language Master handelsingenieur in de beleidsinformatica and the English-language Master of Business and Information Systems Engineering at the Leuven campus (both 120 ECTS). Part 2 focuses on the way in which the programmes realise and shape their vision and goals.

The Business and Information Systems Engineering (BISE) programme seeks to train multidisciplinary, forward-looking managers who can use information and communication technology to organise, optimise and lead businesses in a rapidly globalising world. These managers of the future will be able to rely on a sound quantitative training in business economics, with Business and Information Systems Engineering as a key spearhead, and firmly grounded in the humanities as well as in engineering science.

In addition to this science-based, interdisciplinary training, the Business and Information Systems Engineering programme also aims at research-driven self-development. It provides a challenging academic environment for students and offers them every opportunity for personal growth. We aspire to provide an inspiring and enriching experience that students will look back on positively. Our alumni are the proud ambassadors of our programme. In a well-considered and critical manner, they contribute to today's and tomorrow's society.

## Part 1: Vision and profile

**1A      Programme goals**

a. Programme objective

> The Business and Information Systems Engineering programme offers an advanced quantitative and science-based training in business economics and its various business subfields (accounting and finance, marketing, organisation and human resources, production and logistics). It is analytically underpinned by insights from engineering science (mathematics and statistics, information, energy, problem-solving and design) but also inspired by insights from the humanities (sociology, law, arts, philosophy and religion) as the basis for a unique interdisciplinary approach to business management. A thorough study of business economics is combined with a training in information and communication technology (ICT). The degree programme focuses on the creation, integration, management and use of information in a business context to support business management in a digital world.

b. Programme-specific learning outcomes

The programme-specific learning outcomes of the Bachelor's and Master's programmes are included in the appendix 1a and 1b. The Dutch and English-language equivalent of the Master's programme share the same objectives.

## 1B    Vision on education

The Faculty of Economics and Business (FEB) offers high-quality degrees that are founded in research in the disciplines of economics and business. All the FEB programmes challenge students to envision a clear professional future, to articulate the professional expectations and aspirations they want to commit to, and to make curriculum choices that will help students to achieve these goals.

The following principles are central in the realisation students' future self*:*

- Education that is research-focused and research-based;
- Balanced with development, immersion and employability;
- Considerate of students' self-development;
- Responsive to developments in a rapidly globalising society;
- That operates from a framework that combines teaching with learning;
- Has a future-oriented approach which is supported by digital learning;
- within a strong learning network.

For the programme Business and Information Systems Engineering this translates briefly into:

> To challenge excellent students to become multi-deployable game changers
> and the next generation of *business leaders in a complex digital business world.*

The following spearheads are key in realising this vision:

- Integral and interdisciplinary;
- Advanced business-economics training;
- ICT skills and information management;
- With an analytic foundation in engineering and expanded by knowledge from the humanities;
- Internationally oriented

The Business and Information Systems Engineering programme is fairly unique in the world. In other countries, the combination of management and engineering, with a focus on business-oriented information and communication technology, in a single degree programme is exceptional. Moreover, students obtain their degree within the same timeframe as other Master's students. This makes the programme versatile and fascinating, but also quite demanding and challenging.

KU Leuven's Business and Information Systems Engineering degree is highly valued, both by the general public and by the corporate world. It is a quality label trusted by businesses and offers excellent prospects for a promising business career.

## 1C      Contents

The programme Business and Information Systems Engineering is a integrating programme and is located in the cluster Engineering for business. A profiling of all FEB programmes can be found in appendix 2.

> a)   Programme specific content

<u>Integral and interdisciplinary</u>

First and foremost, graduates from the Business and Information Systems Engineering programme are generalists: during the Bachelor's programme, they have developed a basic understanding of both the humanities and engineering science, and in particular obtained a thorough knowledge of business disciplines. They have been trained to analyse and solve business problems using a quantitative and business economics approach, with a special focus on information processing.

Compared with graduates from other business economics degree programmes, business and information systems engineers stand out by their analytical approach to business practice[1], thanks to the quantitative and scientific components in their training. As a result of their rigorous quantitative training[2], they look at organisations from a systems perspective and can apply information processing techniques to analyse, build and optimise business systems[3]. As they are thoroughly familiar with data science and digital techniques, our graduates can be deployed in technical or production environments as well as in various service settings, but also in expert positions in traditional management areas (banking and finance, marketing, accountancy, logistics, …).

The programme also offers introductory training in basic sciences and **engineering disciplines**[4] (physics, electronics, energy), enabling graduates to economically optimise business systems, taking into account technical and technological limitations and opportunities. In this way, they can play a steering role in the creation of innovation projects[5], and have an economic and/or societal impact.

As their courses also include insights from the humanities[6], graduates of the Business and Information Systems Engineering programme can make the connection between information needs in operational processes and the various management areas (finance, HR, organisation, marketing and sales). This allows them to develop into strategic thinkers, who can detect disruptive factors and developments in the firm's wider (technical, economic, political, demographic, ecological and societal) context and take these into account when taking long-term decisions. Furthermore, they can situate decisions within

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[1] Cf. 'Management of business areas' spearhead in the Faculty's learning outcomes framework
[2] Cf. 'Mathematical and statistical techniques' spearhead in the Faculty's learning outcomes framework
[3] Cf. 'Design of business processes' spearhead in the Faculty's learning outcomes framework
[4] Cf. 'Natural and applied sciences' spearhead in the Faculty's learning outcomes framework
[5] Cf. 'Entrepreneurship and innovation' spearhead in the Faculty's learning outcomes framework
[6] Cf. 'Behaviour and society' spearhead in the Faculty's learning outcomes framework

the company as a whole and within its wider societal, legal and social context, and anticipate their strategic consequences.

This engagement with other disciplines (interdisciplinary training) shapes information engineers' vision of the future. The compulsory part of the curriculum (i.e. the compulsory core and IT component, not including students' own choice of either an in-depth or broadening elective package) is multidisciplinary. The confrontation with other disciplines challenges students to reflect critically and become more creative in solving problems. However, this broad multidisciplinary foundation in no way prevents students from choosing their own priorities, nor from pursuing their own professional aspirations through specialisation.

## Advanced business-economic training

The Business and Information Systems Engineering programme is strongly oriented towards business economics, and hence provides a general background in economics[7], which forms the basis for solid training in all business areas[8], with a particular focus on the impact of information and communication technology (ICT) on the organisation and on its optimal functioning. Thus, students in the Business and Information Systems Engineering programme gain knowledge and skills that will be relevant in a wide range of (international) professional settings, both in the private and in the public sector, and in the management of non-profit organisations.

## ICT skills and information management
The Business and Information Systems Engineering programme combines knowledge of business economics with an insight in information technology [9]. It focuses on the creation, integration, management and use of information in a business context with a view to modern management in a digital world. The emergence of mobile communication tools, the storage and processing of large amounts of data, the internet and the possibilities offered by digital technology have radically altered the business world and the economy. Business and information systems engineers focus on the use of information and communication technology (ICT) by companies and government bodies to optimise their performance or to develop competitive advantages.
Whereas business engineers can choose both a major and a minor (for instance, finance, production and logistics, marketing, entrepreneurship), for students in the Business and Information Systems Engineering programme, information technology is a core subject; in addition, they can specialise either in information systems or in a particular business area.

## Academic excellence (Research-based) [10]
The Business and Information Systems Engineering programme is both research-driven and research-oriented. It reflects the state of the art in the field.

In the Bachelor's programme, this implies that students become familiar with relevant, research-based theories and conceptual frameworks, and that they learn to apply these to business problems. In the

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[7] Cf. 'Economic analysis' spearhead in the Faculty's learning outcomes framework
[8] Cf. 'Management of business domains' spearhead in the Faculty's learning outcomes framework
[9] Cf. 'ICT skills and information management' spearhead in the Faculty's learning outcomes framework
[10] Cf. 'Research skills' spearhead in the Faculty's learning outcomes framework.

Master's programme, this critical, science-based attitude is further developed (e.g. via the Master's thesis) to ensure that graduates are able to make research-based choices in a business or policy context. Hence, recent theoretical developments and empirical findings are covered in the various courses.

As a result of this critical, research-based approach to the relevant disciplines, students develop competences such as problem-solving (Bachelor's programme) and an optimizing and integrative approach to business problems (Master's programme).

Internationally oriented[11]
In the business world, managers and experts operate within a rapidly globalising world. The Business and Information Systems Engineering programme aims to prepare its graduates for the international dimension of their future role. This is not only achieved by the focus on international research, but also by including international learning contents.

The programme wants to actively encourage and facilitate international exchanges, which allow students to become aware of the added value and enrichment offered by international and multicultural (educational or professional) environments. Moreover, an international experience is an invaluable incubator for the student's individual self-development. Through a network of high-quality international partners, we aim to offer our students an enriching international learning experience. Conversely, we seek to create an attractive and challenging learning environment for incoming students, for instance by bringing together Belgian and international incoming students and immersing them in our tradition of high-quality instruction. To this end, we want to further develop the English-medium Master's programme (Master of Business and Information Systems Engineering) and to look for interesting partners for double (Master's) degree programmes.

b)  Transversal learning pathways

In addition to the domain-specific curriculum, this programme also includes **transversal learning pathways** (which can be found in all programmes at FEB and have a strong focus on transferable skills that reinforce the domain knowledge). It concerns the learning pathways of 'professional skills and employability', 'international orientation', 'research and information skills', and 'ethics, responsibility and sustainability'.

The Faculty of Economics and Business wants to support its students in developing the competences needed on the labour market by defining a transversal learning pathway of 'professional skills and employability". Based on their own strengths and work points, students develop **professional skills** that enable them to make a meaningful contribution to society. The student will develop a professional attitude, including skills related to problem solving, cooperation, communication, personal development and adaptability as well as leadership skills and academic skills. Furthermore, students are encouraged to actively seek out situations to broaden and deepen their competences in accordance with their disciplinary future selves. The student acknowledges the importance of continuous education and demonstrates a willingness for **lifelong learning**. With these skills and the willingness to engage in

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[11] Cf. 'International orientation' spearhead in the Faculty's learning outcomes framework.

lifelong learning, the student is optimally prepared for the labour market.

The Faculty of Economics and Business aims to equip its students with the skills, knowledge and attitudes required to function in an increasingly diverse and complex labour market that demands intercultural skills and an international outlook from its graduates. The learning pathway of **international orientation** aims to train students in global competences, i.e. the ability to examine local, global and intercultural issues, to understand and appreciate the perspectives and worldviews of others, to interact openly, appropriately and effectively with people from different cultures, and to act for the common good and sustainable development.

The Faculty of Economics and Business Administration strives to familiarize its students with the various phases and methods of scientific research. This goal is achieved in the learning pathway of research and information skills. **Information skills** are defined as all skills related to searching, evaluating, selecting, managing and processing scientifically relevant information (including the correct referencing of sources), with the aid of ICT technologies. By **research skills**, we mean all skills that are important for conducting high-quality and scientifically sound quantitative and/or qualitative research. Students learn to make a reasoned decision on which research method to use to solve a relevant (practical) management or (business) economic problem. They gradually learn - with a sufficient degree of autonomy and in constructive dialogue with their supervisors - to acquire, analyse and interpret data in a correct manner, and thereby remaining a critical attitude towards the research results.

In all programmes of the Faculty of Economics and Business, attention is given to "Ethics, responsibility and sustainability" as it offers a critical perspective to explore and deepen (business) economic themes with respect to the environment, people and society. Every programme contains courses related to ethics and philosophy (of life) and/or contains courses that link elements of ethics, responsibility and sustainability to business domain(s). In doing so, the faculty strives for students to develop into engaged and responsible citizens who recognise the complexity of the economic, social, political and environmental contexts in which they will work as entrepreneurs, managers, consultants, researchers, policy-makers or decision-makers.

## 1D    Incoming student profile

The Business and Information Systems Engineering programme seeks to attract intelligent and inquisitive students with an interest in (international) business (marketing, finance, HR, organisation, strategy) in a digital world and in improving the operation and management of businesses and organisations by an innovative combination of business economics, science and information technology.

They should have strong academic skills (reading comprehension and argumentative skills) as well as mathematical and scientific skills (analytical reasoning and interpretation). Given the strongly quantitative orientation of many courses, prospective bachelor students should have completed  prior education that included a minimum of 6 hours of mathematics a week. They are not required to have prior knowledge of economics, business, IT or programming.

**1E      Graduate profile and career prospects**

Graduates from the Business and Information Systems Engineering programme are innovative thinkers who can transform conventional business rules, processes and strategies, and as such have a far-reaching impact on the company or the business sector (= *game changers*). They have a broad view on business operations and on the interaction and close connection between the various business areas (e.g. strategy, accounting, finance, marketing, logistics, operations) in which decisions are taken.

Our graduates are managers with an 'innovative engineering' mindset. They are familiar with engineering and other disciplines (mathematics, sciences, technology, ICT), which enables them to support the management of organisations and to fully exploit available opportunities. They are able to align ICT strategy with business strategy, to develop a business architecture in terms of business processes, information and technical ICT infrastructure, and have a keen insight into innovation and competitiveness in a digital world. Drawing on their interdisciplinary knowledge, our graduates can analyse a company's IT needs, decide on the requirements of new systems, and can model, analyse and optimise information, processes and decisions.

Thanks to their knowledge of and insight into all management areas, our graduates can progress to any general management position. They understand and can collaborate with both ICT staff and management, and can act as a bridge-builder between both. They develop creative and efficient ICT solutions, which take into account economic, organisational and human aspects, and analyse and design solutions for wider information problems with particular attention for professional ethics.

The Business and Information Systems Engineering degree opens many doors. In our modern society, no organisation can function without information and information systems engineers. Graduates from the Business and Information Systems Engineering programme know how a company works, and what challenges and opportunities it faces. They design creative and efficient (ICT) solutions that take into account the economic, organisational and human aspects as well as the organisation's strategic objectives.

The scheme below – and particularly the orange rectangle – shows a number of typical examples of positions that excellently fits the profile of graduates with a Business and Information Systems Engineering degree. Typically, they start their career in business and/or IT consulting, and then progress to higher management positions in a wide range of domains.
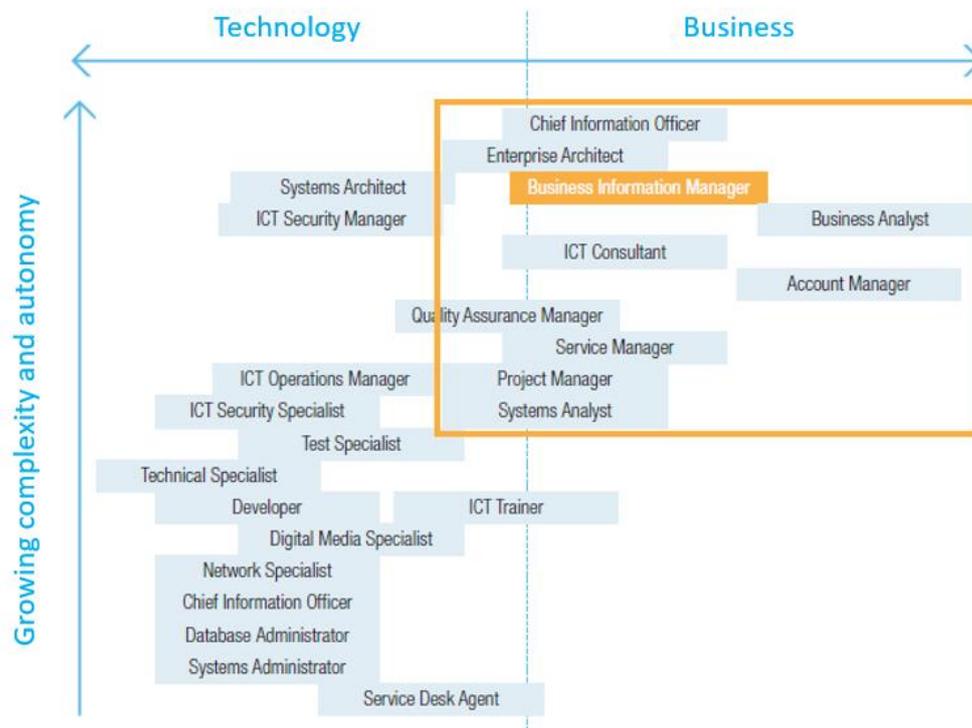
Thanks to the broad array of skills covered in the programme, our graduates are highly sought after in the job market, both by start-ups and multinationals, locally and abroad, and therefore have an excellent chance of immediately finding employment. Within six months of graduating, most of the graduates have (at the minimum) signed their first employment contract or have set up their own business[12].

# Part 2: Realisation of vision and goals

## 2A    Programme structure

The Business and Information Systems Engineering Bachelor's programme comprises - as shown in the programme guide[13]- a compulsory core, an IT component and a set of electives that allow students to embark on a specialism, develop economic language skills and/or extend their knowledge to other domains.

The compulsory core of the Bachelor's programme focuses on providing students with a solid training in business economics, basic training in all business domains, in-depth training in quantitative techniques, basic training in science and technology, allowing them to acquire an integral view of an organisation in relation to people and society at large. In the Bachelor's programme, the information systems component focuses on basic knowledge of IT, such as programming, databases, networks and

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architecture, data analytics, requirements analysis and management of business processes. Students choose a 3 or 9 ECTS project course. This course enables students to apply their knowledge and skills to a practical problem in collaboration with an industry partner in order for the student to learn how to collaborate in a team towards solving a tangible business-IT case study. In addition, students can either acquire more in-depth knowledge of information systems engineering or broader knowledge of a specific management domain through the major they choose in the third stage of the programme. Additionally, students who choose the 3 ECTS project course, have to take an elective course (6 ECTS).

The Business and Information Systems Engineering Master's programme consists of 120 ECTS spread over two stages. Both the Dutch and the English programme include a compulsory core, an IT component, a Master's thesis, a major focusing on either depth or breadth and electives.

The complete list of minors available for every programme version can be found in the programme guide[14]. Students can complete their programme with a wide range of electives: they can choose courses from the various minors, language courses, university-wide courses, and courses from the Master of Teaching in Economics. In addition, students can also opt to obtain credits for an internship, project or summer school as part of their curriculum.

The Master's programme offers a more advanced understanding of quantitative methods, as well as a complementary training in science and technology. In addition, students either opt to deepen their understanding of information systems engineering or to expand their knowledge in a particular business area. The deepening option can also be chosen in preparation for a PhD. By combining the introductory specialisation in the Bachelor's programme with the courses taken in the Master's programme students can build a unique profile, tailored to their own interests and talents as well as to labour market needs.

## 2B    Didactic course formats and assessment methods

### 2B.1 Didactic course formats and learning activities

A wide range of course formats and learning activities are used in the programme, such as face-to-face and online lectures, presentations, case studies, business games, group work, exercises via online adaptive learning paths, projects, seminars, lab sessions and practicals. Course formats and learning activities are aligned with the profile of the programme and its learning objectives, student characteristics and the learning process intended by the lecturer. The goal-oriented, coherent combination of different course formats offers students the possibility to develop an appropriate learning behaviour to acquire the learning results. The blend of contact moments and distance learning (supported by innovative educational technology) makes it necessary to be present on campus in order to participate in the learning activities and to acquire all learning objectives of the courses and the programme.

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[14] See programme guide 'master handelsingenieur in de beleidsinformatica', Leuven Campus: http://bit.ly/2ta5NdP
  See programme guide Master of Business and Information Systems Engineering, Leuven Campus: http://bit.ly/2t9vprr

Due to the organisation of the learning outcomes and contents, starting with basic knowledge in the first bachelor year and working towards complex analytical and methodological skills and critical thinking in the master, the structure of course formats and learning activities also progresses from a focus on acquisition and application, with the support of study supervisors and/or didactic team, to a focus on more independent research, cooperation and production. This scaffolding, starting with much guidance and structure, towards more self-direction within the learning activities, stimulates students to be increasingly responsible actors in their own learning process.

## 2B.2 Assessment methods

Teachers use a (combination of) evaluation forms that help achieve the intended learning outcomes in the best possible way (formative evaluation) or that help assess them (summative evaluation). In doing so, they pay attention to the transparency, validity and reliability of the evaluation.

**Formative evaluation** generates feedback for both student and teacher about where the student stands regarding the learning objectives. This allows students to adjust their learning activities and behaviour, and the instructor can also adjust his/her didactic approach where necessary. This continually optimises the learning process. Formative assessment is dealt with in this programme in the form of mock exams; sample exam questions with solution key, integrated into lessons through quiz in PollEv, show of hands, teaching conversation; online practice system with feedback; peer evaluation etc.

**Summative evaluation** assesses whether the learning objectives have been achieved by the student. Summative evaluation is dealt with in this programme in the form of (a combination of) oral / written exams with open questions or/and multiple choice questions, (group) assignments, (group) presentations, etc.

**Transparency** about the assessment is obtained by adequately informing the students about the (parts of the) evaluation through the ECTS, Toledo and by explanations of the teacher.

To ensure the **validity** of assessment, FEB encourages the use of test matrices, making the alignment between the evaluation and the learning outcomes explicit. Considering the diversity of learning outcomes, both in content domains and in knowledge, skills and attitudes, a suitable diversity of evaluation forms is aimed for.

Evaluation **reliability** is guaranteed by careful assessment of the evaluations, provided with appropriate support tools such as correction keys, rubrics and evaluation forms.

## 2B.3 Quality assurance at programme level

The POC, chaired by the programme director, and consisting of lecturers, teaching assistants, student representatives, staff members and study career counsellors, monitors the programme's educational quality. The POC does this by implementing a systematic policy within the programme by means of this blueprint and the programme plan, and in line with faculty and university policy. To monitor quality, the POC uses various surveys and instruments. Additionally, student representatives are present at each POC, giving voice to the concerns of students in the various topics. Based on the input of its members and systematic reflection, the POC makes adjustments where necessary to the curriculum, courses and their didactic formats as well as the evaluation, or the synchronisation between various elements. When necessary, the POC scales up themes to the faculty level for further follow-up or support.

The Faculty of Economics and Business uses a version of the university-wide quality assurance system COBRA for internal quality assurance, and also participates in the external quality review EQUIS.

The faculty also focuses on quality by developing a supportive offer for lecturers and didactic teams, such as organising onboarding trajectories for new lecturers, lunch seminars on education, educational seminars for starting teaching assistants, and by supporting lecturers in obtaining their basic teaching qualification.

**2C Guidance**

In addition to the course-related support provided by **teachers and assistants** during the learning activities, the university's student services also have an extensive support offer in place.

**Student counsellors** offer support in the transition from secondary education to our university programmes. In addition, they provide subject support as well as learning process guidance to students from the first stage of their education, both in groups and individually.

**Student counsellors** offer support in the transition from secondary education to our university programmes. Furthermore, they provide course-specific support as well as guidance for students' learning process during the first phase of the programme, both in groups and individually.

**Study career counsellors** help students reflect on who they are, where they are and where they want to go. They support students in outlining their optimal study career. They also help students to consider various possibilities in case of doubts about their study choice and/or at pivotal moments in their study career.

Students can also call on the **university-wide services of KU Leuven Stuvo**.

The faculty considers teaching and learning to be a partnership between lecturers and students. Therefore, a large part of the (final) responsibility for a study career is placed on the student himself, and students are also called to account for this by the student services. The student himself determines to what extent he makes use of the guidance services offered. The faculty, for its part, will inform students of its efforts in this respect and strongly recommends the initiatives taken.

*Appendix 1a: Learning outcomes of the Bachelor's programme handelsingenieur in de beleidsinformatica*

**Economic analysis**

Graduates know and understand the leading concepts in economics, and are able to use them to analyse and solve typical problems from an economic conceptual framework.

**Management of business domains**

Graduates know the core concepts in the different business management areas and can identify and illustrate the purpose of the various business areas.

Graduates use their knowledge of the business domains to analyse business problems, and they can propose, compare and evaluate different solutions in a structured and simple business context.

**Design of business processes**

Graduates can develop primary (production and operational), governance (management) and supporting processes, and steer these processes so as to ensure a company's optimal functioning.

Graduates are able to model, analyse and optimise business processes through their thorough insight into business process management and process mining.

**ICT skills and information management**

Graduates know and understand the techniques and strategies used by organisations to manage and analyse information with a view to business management and their use in a decision-making context.

Graduates can model the requirements for a business application that supports business management (including the necessary information).

**Mathematical and statistical techniques**

Graduates are able to employ advanced quantitative models to analyse and solve management problems in a specified context.

**Research skills**

Graduates can, with assistance, complete the different stages of research to analyse a concrete problem, formulate and evaluate solutions, and communicate about this.

**Natural and applied sciences**

Graduates can employ the basic concepts in environmental and applied sciences to analyse technological processes.

**Behavior and society**

Graduates can describe and interpret the behaviour of economic actors and can assess their consequences for an organisation and society at large.

**Law**

Graduates have insight into the legal context in which organisations operate.

**Languages**

Graduates can clearly communicate in the language of the programme as well as in two foreign languages.

**Professional skills and employability**

Graduates develop professional skills that prepare them for the transition to the labour market (leadership skills, team work, communication skills, etc.).

**Ethics, responsibility and sustainability**

Graduates recognise and can critically reflect on the social, ethical and environmental aspects of business management.

**International orientation**

Graduates recognise the international and intercultural dimensions of business management and policymaking, and can analyse (business-)economic issues as part of an international framework.

**Entrepreneurship and innovation**

Graduates boast the necessary knowledge, skills and attitudes to translate innovative ideas into actions that have a real impact on businesses or a socio-economic context.

*Appendix 1b: Learning outcomes of the Master's programme handelsingenieur in de beleidsinformatica/ Business and Information Systems Engineering*

**Economic analysis**

Graduates know and understand the theories and models used in economics and are able to use them to analyse and model real economic processes and interactions.

**Management of business domains**

Graduates use their knowledge of the business management areas to analyse business problems, and they can propose, compare and evaluate different solutions in a real business context.

Graduates can integrate the different business domains, understand their mutual relations at a company level while taking the broader business context, environmental factors and relevant public players into consideration.

**Design of business processes**

Graduates can design, optimise and manage the business processes in a modern company.

Graduates demonstrate an advanced specialisation in at least one business area (for instance accountancy, financial management, marketing management, strategic management, personnel management, production and logistics management, and IT management).

Graduates can implement the modelled business processes in an information system architecture.

**ICT skills and information management**

Graduates can perform a business analysis whilst considering the business processes, business information and business rules, and propose a change process to support business management based on the bottlenecks.

Graduates develop specific professional skills that allow them to integrate, visualise and analyse corporate data with a view to data-driven and big data business management.

**Mathematical and statistical techniques**

Graduates can apply state-of-the-art mathematical and statistical methods in a real economic and business context, while simultaneously paying critical attention to the method constraints and assumptions.

**Research skills**

Graduates can independently devise, plan and execute a company or society-oriented research project, and communicate about this in speech and in writing.

**Natural and applied sciences**

Graduates can assess contemporary social challenges from an environmental science and technological perspective, and can propose corresponding sustainable solutions.

**Behavior and society**

Graduates can describe and interpret the behaviour of economic actors and can assess their consequences for an organisation and society at large.

**Law**

Graduates have insight into the legal context in which organisations operate.

**Languages**

Graduates can clearly communicate in the language of the programme and in the scientific working language of the business relevant disciplines.

**Professional skills and employability**

Graduates develop professional skills to prepare them for the transition to the labour market (Leadership skills, team work, communication skills, etc.).

**Ethics, responsibility and sustainability**

Graduates recognise and can critically reflect on the social, ethical and sustainability aspects of business management.

**International orientation**

Graduates recognise the international and intercultural dimensions of business management and policymaking, and can analyse (business) economic issues as part of an international framework.

**Entrepreneurship and innovation**

Graduates boast the necessary knowledge, skills and attitudes to translate innovative ideas into actions that have a real impact on businesses or in a socio-economic context.

***Appendix 2: Spearheads of the Faculty-wide framework of Intended Learning Outcomes***

The Faculty of Economics and Business offers different programmes at four campuses (Leuven, Brussels, Antwerp and Kortrijk). To illustrate the differences and similarities between these programmes, a Faculty-wide framework of Intended Learning Outcomes (ILOs) has been developed. The ILO framework identifies fifteen spearheads that are to a greater or lesser extent present in each programme. The visualisation below shows for each programme how much emphasis is put on each of the key features. As such, it demonstrates where the programmes differ from one another, but also shows the characteristics that are shared by all programmes (with regard to the professional and personal development of students).

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FACULTY OF ECONOMICS AND BUSINESS

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| | CLUSTER 1: BUSINESS ECONOMICS | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | SPECIALISING PROGRAMMES | | | | INTEGRATIVE PROGRAMMES | | BROADENING PROGRAMMES | |
| | Business Administration | Business Economics | Information Management | Accounting and Auditing | Environment, Health and Safety Management | Economics, Law and Business Studies | Management | International Business Economics and Management |
| | Ba + Ma | Ba + Ma | Ma | Ma | Ba + Ma | Ma | Ma | Ma |
| ECONOMIC ANALYSIS | ▓ | ▓ | | ▓ | ▓ | ▓ | ▓ | ▓ |
| DEVELOPMENT OF ECONOMIC POLICY | | | | | ▓ | ▓ | | |
| MANAGEMENT OF BUSINESS DOMAINS | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ |
| DESIGN OF BUSINESS PROCESSES | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | |
| ICT-SKILLS AND INFORMATION MANAGEMENT | ▓ | ▓ | ▓ | ▓ | | | | |
| MATHEMATICAL AND STATISTICAL TECHNIQUES | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ |
| RESEARCH SKILLS | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ |
| NATURAL AND APPLIED SCIENCES | | | | | ▓ | | | |
| BEHAVIOR AND SOCIETY | ▓ | ▓ | | | | | ▓ | ▓ |
| LAW | ▓ | ▓ | | ▓ | ▓ | ▓ | | |
| LANGUAGES | ▓ | ▓ | | | | | | |
| PROFESSIONAL SKILLS AND EMPLOYABILITY | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ |
| ETHICS, RESPONSABILITY AND SUSTAINABILITY | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ |
| INTERNATIONAL ORIENTATION | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ |
| ENTREPRENEURSHIP AND INNOVATION | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ | ▓ |

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EFMD EQUIS ACCREDITED

| | CLUSTER 2: ECONOMICS | | | | | CLUSTER 3: ENGINEERING FOR BUSINESS | | |
|---|---|---|---|---|---|---|---|---|
| | SPECIALISING PROGRAMMES | | INTEGRATIVE PROGRAMMES | BROADENING PROGRAMMES | | SPECIALISING PROGRAMMES | INTEGRATIVE PROGRAMMES | |
| | Economics | MASE | Teaching | Economic Policy | | Business Engineering | Business and Information Systems Engineering | Actuarial and Financial Engineering |
| | Ba + Ma | Adv. Ma | Ma | Ma | | Ba + Ma | Ba + Ma | Ma |
| ECONOMIC ANALYSIS | | | | | | | | |
| DEVELOPMENT OF ECONOMIC POLICY | | | | | | | | |
| MANAGEMENT OF BUSINESS DOMAINS | | | | | | | | |
| DESIGN OF BUSINESS PROCESSES | | | | | | | | |
| ICT-SKILLS AND INFORMATION MANAGEMENT | | | | | | | | |
| MATHEMATICAL AND STATISTICAL TECHNIQUES | | | | | | | | |
| RESEARCH SKILLS | | | | | | | | |
| NATURAL AND APPLIED SCIENCES | | | | | | | | |
| BEHAVIOR AND SOCIETY | | | | | | | | |
| LAW | | | | | | | | |
| LANGUAGES | | | | | | | | |
| PROFESSIONAL SKILLS AND EMPLOYABILITY | | | | | | | | |
| ETHICS, RESPONSABILITY AND SUSTAINABILITY | | | | | | | | |
| INTERNATIONAL ORIENTATION | | | | | | | | |
| ENTREPRENEURSHIP AND INNOVATION | | | | | | | | |