MASTER IN BUSINESS ENGINEERING

MAIN SUBJECTS: DATA ANALYTICS • FINANCE • OPERATIONS MANAGEMENT

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

COURSE CONTENT

A business engineer has a thorough knowledge of the discipline of business administration and technology, i.e. technological products and processes. In this respect, a business engineer may act as a mediator between technical and business economic positions to conduct data analysis, modelling and decision-making. He/she is trained to develop and implement business solutions starting from a model to a business process. He/she is trained to develop and implement solutions for business problems. He/she models the real business situation in an (abstract) presentation, takes relevant decisions based on the model and translates these decisions into business processes.

The Master of Science in Business Engineering is a programme in business administration that focuses on (data-driven) management science, business processes and technology.

These three disciplines are educated throughout the two-year master programme in different manners through theoretical lectures, practical case studies and business games as well as guest speakers and company projects. The master's programme teaches these disciplines both in a theoretical and a practice-oriented way.

The specific content of the study that links business analytics and business processes with technology helps to translate processes into business models and organisational structures into information systems. Business transactions within a single company and between companies in a supply chain, that include processes and the logistical flow of products, services and/or information, are studied thoroughly by data analysis techniques, conceptual or mathematical modelling techniques and techniques of decision making. These tools support the efficient organisation of resources in companies towards its common goals and objectives.

COURSE STRUCTURE

The link between management science, business processes and technology returns throughout the master's programme. In this perspective, attention is spent to the management of an organisation, its resources and its business processes by means of courses like Strategic Management, Human Resource Management, Business Process Management, etc. The technology component in the course is further widened by the topics of Technology for the Circular Economy and System Dynamics and the link between these technology courses and business management is further treated in the courses in Financing High Tech Entrepreneurial Companies, Technology Entrepreneurship, Innovation Management and Enterprise Architecture. Different management science principles are discussed and maintained throughout these courses including mathematical modelling, statistics and numerical algorithms to improve an organisation's ability to enact rational and meaningful management decisions.
Students can specialise and choose one of three main subjects:

- Data Analytics
- Finance
- Operations Management

The discipline **Data Analytics** mainly emphasises 'Business Intelligence' and refers to the analysis of business data to uncover hidden patterns, unknown correlations and other useful information that can be used to make better business decisions. McKinsey and Gartner claim that there is an enormous shortage of graduates in this field. Due to the more quantitative schooling of business engineers, emphasis is placed on price-fixing, analytical customer management systems (analytical Customer Relationship Management = aCRM), predictive and prescriptive analytics as well as more recent evolutions in Big Data, social media and web analysis.
The discipline **Finance** analyses the financial decisions of enterprises, as well as of investment managers who decide to invest in shares or derived financial instruments. The quantitative background of business engineers enables them to draw up complex financial models, for example with regard to risk management in enterprises, the planning of financial requirements, optimal investment portfolios, etc.
The discipline of **Operations Management** is an area of management concerned with overseeing, designing, and controlling the process of production and redesigning business operations in the production of goods or services. It involves the responsibility of ensuring that business operations are efficient in terms of resource use, and effective in terms of meeting customer requirements. It is concerned with managing the process that converts inputs (raw materials, labour, and energy) into outputs (goods and/or services). Important business concepts concerning Project Management, Total Quality Management, Production and Supply Chain Management will be highlighted from various angles and perspectives. For more information visit our website: www.projectmanagement.ugent.be.
If you want to combine your master's degree with a teacher's degree, then there is the option of following an 'Educatieve master' instead of the above described master. The 'Educatieve master' however is a Dutch taught programme. More information can be found on www.ugent.be/educatievemaster.

CAREER PERSPECTIVES

With a degree in Business Engineering you can follow different career paths. With their strong foundation in business economics, their broad knowledge of new technologies and their strong focus on quantitative analytics in production, services, logistics, marketing and finance, business engineers understand better than anyone else how to improve the efficiency in the various parts of a company's logistic chain. Their job deals with managing production processes and services, with analytical and quantitative tasks to improve business decisions, as well as with optimising the bottleneck processes in a company to improve its overall efficiency. As a bridge builder between business economists and engineers, they are able to optimise the decision making process at various levels of the company, ranging from operational decisions on the work floor to strategic decisions at the top level of the company. As an economic agent, they are familiar with the company processes in order to perform cost price calculations, but as an engineer they also have a much wider overview on the company's logistic processes and their potential for improvements.
With their essential knowledge of the latest technologies and their strong background in business analytics, business engineers rely on the state-of-the-art ICT concepts to optimise the business processes. This essential skill is embedded in almost every course of Business Engineering curriculum and will be key to today's modern international business strategy. Some examples of jobs in which Business Engineering graduates start: production manager, logistics director, production planning expert, business consultant, business analyst, process engineer, research & development manager and customer relationship manager.

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TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

Rechtstreeks:
- Ba toegepaste economische wetenschappen: handelsingenieur
- Ba/Ma toegepaste economische wetenschappen: handelsingenieur in de beleidsinformatica

Via voorbereidingsprogramma A:
(30-60 studiepunten)
- Ba/Ma toegepaste economische wetenschappen/Business Economics
- Ba/Ma toegepaste economische wetenschappen: bedrijfskunde
- Ba/Ma toegepaste economische wetenschappen: economisch beleid
- Ba/Ma economische wetenschappen/Economics
- Ba/Ma handelswetenschappen
- Ba/Ma sociaal-economische wetenschappen
- Ma handelsingenieur

Via voorbereidingsprogramma B:
(41-59 studiepunten)
- Ba/Ma industriële wetenschappen
- Ba/Ma ingenieurswetenschappen (incl. architectuur)
- Ba/Ma bio-ingenieurswetenschappen
- Ba/Ma informatica
- Ba/Ma wiskunde
- Ba/Ma computerwetenschappen

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

PRAKTISCHE INFORMATIE

Studieprogramma:
https://studiegids.ugent.be
> faculteiten > opleidingstypes > ga naar de opleiding van je keuze

Voorbereidende initiatieven
Je kunt je basisvaardigheden wiskunde online bijschaven, een vakantiecursus wiskunde en/of een vakantiecursus boekhouden bijwonen. Alle informatie op https://studiekiezer.ugent.be. Selecteer deze opleiding en je vindt toelichting en praktische details onder de rubriek 'Vlot van start'.

Alternatieve trajecten
De voorbereidingsprogramma's worden in één of twee delen aangeboden (kunnen dus gespreid worden over één of twee jaar). Dat maakt de combinatie met werken of andere studies mogelijk. Je kan terecht bij de trajectbegeleiding voor inhoudelijke of administratieve vragen met betrekking tot de toelating.

Infomomenten
Masterbeurs
www.ugent.be/masterbeurs
Infosessie
29 juni 2019, 10-12 u. en 4 september 2019, 15.30 u.,
Campus Tweekerkenstraat. Vooraf inschrijven is verplicht:
www.ugent.be/eb/nl/toekomstige-student/infomoment.htm

Trajectbegeleiding
Frauke Cuelenaere
Campus Tweekerken, Tweekerkenstraat 2 – 9000 Gent
T 09 264 34 66 – frauke.cuelenaere@ugent.be – www.ugent.be/eb

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

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ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

The course is open to students with a least a bachelor degree.
The Business Engineering programme consists of five learning trajectories. These trajectories should be present in the candidates' educational background in order to be eligible for the master programme: economics and business economics trajectory (microeconomics, macroeconomics, accounting, marketing, etc), quantitative trajectory (mathematics), methodological trajectory (statistics, econometrics, operations research, etc), technical and technological trajectory (electrical and electronics engineering, materials science, mechanical and civil engineering, etc), trajectory operations and information management (production technology, business information systems, etc).
Admission can only be granted after an individual application procedure. The Study Programme Committee will make the final decision whether to accept the application or not. It can be decided that students need to follow a preparatory course or an individual master programme.

LANGUAGE

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

PRACTICAL INFORMATION

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

Application deadline for international degree students
- for students who need a visa: 1st of March
- for students who do not need a visa: 1st of June

www.ugent.be/deadline

Enrolling institution
Ghent University

Tuition fee
More information: www.ugent.be/tuitionfee

International Office
Laura Haek
Campus Tweekerken, Tweekerkenstraat 2 – 9000 Gent
T 09 264 33 05 – degree.eb@ugent.be – www.ugent.be/eb/en

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