MASTER OF SCIENCE IN BUSINESS ENGINEERING (DATA ANALYTICS)

120 ECTS CREDITS - LANGUAGE: ENGLISH

WHAT

The Master of Science in Business Engineering is a multidisciplinary programme with a focus on (data-driven) management science, business processes and technology. These three disciplines are offered throughout the two-year Master's curriculum in the form of theoretical lectures, practical case studies and business games, and by means of guest speakers and company projects. The Master's programme conveys these disciplines both in a theoretical and a practice-oriented way
While the Bachelor of Science in Business Engineering mainly focuses on providing a (quantitative) foundation, the Master's programme studies different aspects of the subdisciplines mentioned above in a more applied manner. 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. By means of data analysis techniques, conceptual or mathematical modelling techniques and decision-making techniques, we study the business operations within a single company and between companies in a supply chain thoroughly. Such business operations include the processes and the logistical flow of products, services and/or information. These techniques support the efficient organisation of resources in companies for them to work towards their common goals and objectives.
By way of specialisation, students choose one of three main subjects: Data Analytics, Finance, or Operations Management.
The **Data Analytics** main subject focuses on data analysis in relation to the improvement of business decisions. Business processes have to a great extent been digitised in recent years. . As a result, all functional business domains now generate huge amounts of data ("big data"): production, logistics, marketing & sales, finance, etc. These data sources contain a wealth of information, from which students are trained to extract relevant insights and propose data-driven actions . This requires a thorough understanding of the business problem, proper computer skills and knowledge of specific programming languages, as well as a good grasp of of statistical and machine-learning algorithms.

STRUCTURE

The link between management science, business processes and technology is a recurring feature throughout the Master's curriculum. In this respect, the focus is on the management of an organisation, its resources and its business processes in the form of of course units like Strategic Management, Human Resource Management, Business Process Management, etc.
Our programme's technology component is widened by course units such as Technology for the Circular Economy and System Dynamics. The interrelation between these technology course units and business management is treated in course units such as Financing High Tech Entrepreneurial Companies, Technology Entrepreneurship, Innovation Management, and Enterprise Architecture.
Different principles from management science are discussed and maintained throughout these course units, including mathematical modelling, simulation, statistics and numerical algorithms to improve an organisation's ability to pursue rational and meaningful management decisions.
In addition to the (domain) Master's programme described above, you can also choose a Master's Programme in Teaching (in Dutch: Educatieve Master). Find out more at www.ugent.be/educatievemaster.
*It is possible to participate in **a double degree programme** with the Université de Liège or the University of Porto or the University of Tartu (Estonia). In a double degree programme students receive a degree of both the home and the host university.*

LABOUR MARKET

A Business Engineering diploma leads to various 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 how to improve the efficiency of the various links in a company's logistic chain better than anyone else .
Our graduates end up in jobs where they will deal with managing production processes and services, with analytical and quantitative tasks to improve a company's overall efficiency. As bridge builders between business economists and engineers, they are able to optimise the decision-making process at the various levels of a company, ranging from

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operational decisions on the work floor to strategic decisions at board level . Aseconomic agents, they are familiar with the company processes in order to perform cost price calculations, but as engineers they also have a much wider view of the company's logistic processes and its potential for improvement. With their essential knowledge of the latest technologies and their strong background in business analytics, business engineers rely on state-of-the-art ICT concepts to optimise business processes. This essential skill is embedded in almost every course unit in the Business Engineering curriculum and will be key in today's modern international business strategy.
Graduates use data-driven insights to support strategic decision-making. Many pursue careers as data analysts, data scientists, or business intelligence consultants, translating complex datasets into actionable business strategies. Some work as machine learning engineers, risk analysts, or fraud detection specialists, applying advanced analytics to solve business challenges.

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TOELATINGSVOORWAARDEN VOOR HOUDERS VAN EEN VLAAMS DIPLOMA

1 **Rechtstreeks:**
- Bachelor handelsingenieur
- Bachelor handelsingenieur in de beleidsinformatica
- Bachelor in de toegepaste economische wetenschappen: handelsingenieur
- Bachelor in de toegepaste economische wetenschappen: handelsingenieur in de beleidsinformatica
- Master handelsingenieur
- Master handelsingenieur in de beleidsinformatica
- Master in de toegepaste economische wetenschappen: handelsingenieur in de beleidsinformatica
- Master of Business and Information Systems Engineering
- Master of Business Engineering: Business and Technology

2 **Na het met succes voltooien van een voorbereidingsprogramma:**

MIN 29 SP - MAX 61 SP

a Engelstalig programma
- Bachelor in de economische wetenschappen
- Bachelor in de handelswetenschappen
- Bachelor in de sociaal-economische wetenschappen
- Bachelor in de toegepaste economische wetenschappen
- Bachelor in de toegepaste economische wetenschappen: bedrijfskunde
- Bachelor in de toegepaste economische wetenschappen: economisch beleid
- Bachelor of Business Administration
- Master in de economische wetenschappen
- Master in de handelswetenschappen
- Master in de sociaal-economische wetenschappen
- Master in de toegepaste economische wetenschappen
- Master in de toegepaste economische wetenschappen: bedrijfskunde
- Master in de toegepaste economische wetenschappen: economisch beleid
- Master of Business Administration
- Master of Business Economics
- Master of Economics

MIN 40 SP - MAX 69 SP

a Engelstalig programma
- Bachelor in de bio-ingenieurswetenschappen
- Bachelor in de computerwetenschappen
- Bachelor in de informatica
- Bachelor in de wiskunde
- Bachelor of Environmental Technology
- Bachelor of Food Technology
- Bachelor of Molecular Biotechnology
- Een diploma van een opleiding 'Bachelor of Science in de industriële wetenschappen'
- Een diploma van een opleiding 'Bachelor of Science in de ingenieurswetenschappen' (met inbegrip van 'architectuur')
- Een diploma van een opleiding 'Master of Science in de bio-ingenieurswetenschappen' leidend tot de titel van 'bio-ingenieur'
- Een diploma van een opleiding 'Master of Science in de industriële wetenschappen'
- Een diploma van een opleiding 'Master of Science in de ingenieurswetenschappen' leidend tot de titel van 'burgerlijk ingenieur' (incl. architectuur)
- Master in de informatica
- Master in de ingenieurswetenschappen: architectuur
- Master in de wiskunde

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:

1 economics and business economics trajectory: microeconomics, macroeconomics, accounting, marketing, etc.

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2 quantitative trajectory: mathematics, calculus, algebra, etc.
3 methodological trajectory: statistics, econometrics, operations research, etc.
4 technical and technological trajectory: electrical and electronics engineering, materials science, mechanical and civil engineering, etc.
5 trajectory operations and information management: production technology, business information systems, etc.

For more information about the required student profile, check the faculty's website: https://www.ugent.be/eb/en/degree-students/overview-prospective-students.htm
Information on admission requirements and the administrative procedure for admission on the basis of a diploma obtained abroad, can be found on the following page: www.ugent.be/prospect/en/administration/enrolment-or-registration.

LANGUAGE REQUIREMENTS

Language requirements	Dutch: no language requirements English: CEFR level B2

The language requirements for this study programme can be found on: www.ugent.be/languagerequirements

PRACTICAL INFORMATION

Study programme

studiekiezer.ugent.be/master-of-science-in-business-engineering-data-analytics-en/programma

Information sessions

Graduation Fair

afstudeerbeurs.gent/en/students/further-studies

Open Days

Each spring the graduation fair **EVOLV.** organised by the UGent Association, offers the opportunity to discover all possible options to continue studying or to start looking for a job (with more than 200 different companies).
There is also a specific Open Day that offers the opportunity to visit the campus, talk to professors and students, discover the course material and ask questions. Registration will open on May 1st.

25 June 2022 10u00 - 12u30 - Campus Tweekerken, Tweekerkenstraat 2, 9000 Gent

Enrolling institution

Information on enrolment at Ghent University.

Application Deadline (for International degree students)

For students who **need a visa**: before 1st of April
For students who **do not need a visa**: before 1st of June
Read more

Tuition fee

More information is to be found on: www.ugent.be/tuitionfee

Contact

For students who wish to enroll in this master based on a **Flemish degree**: traject.eb@ugent.be
For students who wish to enroll in this master based on a **non-Flemish degree**: international.eb@ugent.be.

For students who wish to enroll in this master based on a **Flemish degree**: www.ugent.be/eb/nl
For students who wish to enroll in this master based on a **non-Flemish degree**: www.ugent.be/eb/en