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 that focuses on (data-driven) management science, business processes, and technology. These three core disciplines are integrated throughout the two-year curriculum through a combination of theoretical lectures, practical case studies, business games, guest lectures, and company projects. The programme delivers a strong balance between theoretical foundations and practical, real-world applications.
While the Bachelor of Science in Business Engineering primarily provides a quantitative foundation, the Master's programme explores the aforementioned subdisciplines in a more applied and in-depth manner. By linking business analytics and business processes with technology, the programme equips students with the skills to translate business processes into effective business models and organisational structures into information systems.
Using data analysis, conceptual and mathematical modelling, and decision-making techniques, students analyse business operations both within individual organisations and across supply chains. These operations include the processes and logistical flows of products, services, and information. The acquired techniques support the efficient organisation of resources, enabling companies to achieve their strategic goals and objectives.
Students specialise in one of three main areas: **Data Analytics**, **Finance**, or **Operations Management**.
The **Data Analytics** main subject focuses on the use of data analysis to improve business decision-making. In recent years, business processes have become largely digitised, resulting in vast amounts of data being generated across all functional domains, including production, logistics, marketing and sales, and finance. These data sources—often referred to as "big data"—contain valuable information from which students learn to extract meaningful insights and formulate data-driven actions.
To achieve this, students develop a thorough understanding of business problems alongside strong computational skills. The programme emphasises proficiency in relevant programming languages, as well as a solid foundation in statistical methods and machine-learning algorithms, enabling students to analyse complex datasets and support effective decision-making.

STRUCTURE

The integration of management science, business processes, and technology is a central theme throughout the Master's curriculum. This is reflected in course units focusing on organisational management, resource allocation, and business processes, such as Strategic Management, Human Resource Management, and Business Process Management.
The technological dimension of the programme is further strengthened through courses such as Technology for the Circular Economy and System Dynamics. The interaction between technology and business management is explored in courses including Financing High-Tech Entrepreneurial Companies, Technology Entrepreneurship, Innovation Management, and Enterprise Architecture.
Across these courses, key principles of management science are consistently applied, including mathematical modelling, simulation, statistics, and numerical algorithms. These methods enhance an organisation's capacity to make rational, informed, and impactful 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 degree in Business Engineering opens the door to a wide range of career opportunities. Thanks to their strong foundation in business economics, broad knowledge of emerging technologies, and solid quantitative skills in production, services, logistics, marketing, and finance, business engineers are uniquely equipped to improve efficiency across all links of a company's value and logistics chains. Graduates typically take on roles involving the management and optimisation of production processes and services, where analytical and quantitative methods are used to enhance overall organisational performance. Acting as bridge builders between business economists and

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engineers, business engineers optimise decision-making at all levels of an organisation, from operational decisions on the shop floor to strategic decisions at board level.
As economic agents, they possess a thorough understanding of company processes, enabling accurate cost calculations. As engineers, they adopt a broader systems perspective, allowing them to identify inefficiencies and improvement potential within complex logistical and operational processes. Their in-depth knowledge of modern technologies, combined with a strong background in business analytics, enables them to apply state-of-the-art ICT concepts to optimise business processes. These skills are embedded throughout the Business Engineering curriculum and are essential in today's international and technology-driven business environment.
Graduates increasingly rely on 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. Others work as machine learning engineers, risk analysts, or fraud detection specialists, applying advanced analytical techniques to solve complex 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
- Bachelor of Business Engineering
- 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 63 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
- Bachelor of Business Economics
- Educatieve master in de economie, afstudeerrichting: economische wetenschappen
- Educatieve master in de economie, afstudeerrichting: handelswetenschappen
- Educatieve master in de economie, afstudeerrichting: toegepaste economische wetenschappen
- Master in de economische wetenschappen
- 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 Economics
- Master of Economics

MIN 29 SP - MAX 77 SP

a Engelstalig programma
- Master in de handelswetenschappen
- Master of Business Administration

MIN 40 SP - MAX 77 SP

a Engelstalig programma
- Bachelor in de bio-ingenieurswetenschappen
- Bachelor in de computerwetenschappen
- Bachelor in de fysica
- Bachelor in de fysica en de sterrenkunde
- Bachelor in de informatica
- Bachelor in de wiskunde
- Bachelor of Engineering Technology
- 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 Bioscience Engineering' leidend tot de titel van 'bio-ingenieur'
- 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.

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architectuur)
- Master in de fysica en Master in de fysica en de sterrenkunde
- Master in de informatica
- Master in de ingenieurswetenschappen: architectuur
- Master in de wiskunde

ADMISSION REQUIREMENTS FOR INTERNATIONAL DEGREE STUDENTS

- The programme is open to students with at least a bachelor degree that consists of the six learning trajectories that are present in Ghent University's bachelor in business engineering programme:

1 economics and business economics trajectory: microeconomics, macroeconomics, accounting, marketing, etc.
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 operations and information management trajectory: production technology, business information systems, etc.
6 Informatics trajectory: informatics, object-oriented programming, algorithms and data structures, database systems, etc.

For more information about the required student profile, check the faculty's website: https://www.ugent.be/eb/en/study-programmes/master-in-business-engineering/overview.htm

- Non-EER students are required to additionally submit a GMAT or GRE test score, applications without a GMAT or GRE test score will not be processed. EER students are strongly advised to add a GMAT or GRE test score to their application since the faculty will be granting 8 scholarships to students with outstanding scores on the GMAT or GRE test.

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
EVOLV
evolv.gent/en/students/further-studies

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