Degree: Master of Science (M.Sc.)

Big Data & Business Analytics

The amount of structured and unstructured data that companies are providing nowadays is rapidly increasing.

Therefore, there is a high demand for Big Data analysts in companies.

In the Master's programme "Big Data & Business Analytics" at FOM University of Applied Sciences, you will learn to analyse and evaluate large and heterogeneous data sets and use them in a business context. You will acquire analytical skills which you can use specifically for predictions or optimisations, for example in marketing, sales and business development.

The Master's programme "Big Data & Business Analytics" is taught entirely in English and will be completed with the academic degree Master of Science (M.Sc.).

Support for all issues relating to your study
Phone: +49 201 81004 864   WhatsApp: +49 171 3338539
Monday to Friday from 9:00 a.m. to 4:00 p.m. German time
E-Mail: Send us an email to: **incomings@fom.de**

More information
on the degree programme

Location
Essen, Munich

Duration
4 semester including thesis

Credit Points
120 ECTS

Accreditation
The FOM University of Applied Sciences is accredited by the German Council of Science and Humanities and was the first private university in Germany to be system-accredited by FIBAA in 2012. This means that all FOM degree programmes are state and internationally recognised.

Total costs
22,500 euro including registration fee, tuition fee and examination fee

Your career prospects
You can take on the following jobs:
Big Data Manager
Business Analyst
Data Analyst
Data Scientist
Business Development Manager
Big Data Engineer
Chief Data Officer

1ˢᵗ semester	2ⁿᵈ semester	3ʳᵈ semester	4ᵗʰ semester

Big-Data-Architecture & -Infrastructure (5 CP)
- Enterprise architecture management (EAM)
- Technological requirements for big data
- Vital infrastructures for data-driven business models
- Complex processing by continuous data sets

Decision Focussed Management (6 CP)
- Traditional decision theory
- Management decisions from a psychological perspective
- Decisions in a strategy context

Leadership & Sustainability (6 CP)
- Leadership as part of normative, strategic and operative business management and in the context of diversity management
- Leadership styles, techniques and instruments
- Ethics and sustainability

Big Data Analytics (6 CP)
- Data sources and data classification
- Visual analytics/data discovery/ explorative data analysis
- AI methods such as machine learning
- Computational intelligence: fuzzy logic, neuronal networks, evolutionary algorithms

Deutsch (6 CP)
- Fundamentals in listening, reading, writing and speaking
- Basic grammatical skills
- Application in situations of everyday life

Applied Programming (6 CP)
- Basic principles and application of programming languages for big data: SQL, R and Python
- Languages and tools for data management
- Data integration
- ETL v. ELT (data lake)

Analysis of Semi- & Unstructured Data (5 CP)
- Crawling and pre-processing
- Text mining / web mining
- Social media analysis
- Ontologies
- Semantic and graphic modelling/ technologies

Project Management of Big-Data-Projects (5 CP)
- Planning, management and control of big data projects
- Challenges, specific features and success factors of big data project management
- Architectural and technological features
- Introduction of big data applications
- Integration and harmonisation of data sources and planning of data analyses and reporting

Area of Application: Business Analytics (5 CP)
- Goals and fields of activity for big data applications
- Sector and type of data sources
- Application of processes such as association analysis, decision tree process, neuronal networks, cluster analysis

Ethics & Law (5 CP)
- Ethical aspects of the use of big data
- Legal aspects of the use of big data
- Compliance

Information-Security (6 CP)
- Technical Basis
- Data protection and data privacy
- Risk analysis / type of threats
- Attack vectors and scenarios
- ISMS

Big-Data-Consulting Project (6 CP)
- Selection of an area of application for the analysis project
- Data storytelling
- Addressing a management issue
- Data acquisition, processing and analysis
- Preparing findings for management

Quantitative Data Analysis (5 CP)
- Qualitative and quantitative research methods
- Quantitative data analysis (applications with R, statistical test methods, multivariate processes)

Big-Data-Analysis Project (6 CP)
- Selection of an area of application for the analysis project
- Project work with first independently produced data analysis

Strategic Business Model Development (5 CP)
- Results of big data analyses as drivers of business model development
- Planning of big data strategy/business analytics strategy
- Strategy approaches and strategic planning and management instruments
- Data-based business models and business transformation
- Open innovation/innovation management

Applied Project I (6 CP)
- Digital Business & Business Models
- Trend analysis
- Innovation (Lean Startup, Design Thinking etc.)
- Pitching

Master's Thesis and Colloquium/ Defence (25 CP)

Applied Project II (6 CP)

Academic degree:
Master of Science (M.Sc.)