

Programme Syllabus

Business Intelligence: Master Programme 60 Credits*

Business Intelligence: Magisterprogram 60 högskolepoäng

1. Objectives of the Educational Programme

1.1 Objectives, as Specified in the Higher Education Act (1992:1434), Chapter 1, section 9:

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Second-cycle courses and study programmes shall be based fundamentally on the knowledge acquired by students during first-cycle courses and study programmes, or its equivalent.

Second-cycle courses and study programmes shall involve the acquisition of specialist knowledge, competence and skills in relation to first-cycle courses and study programmes, and in addition to the requirements for first-cycle courses and study programmes shall:

- further develop the ability of students to integrate and make autonomous use of their knowledge
- develop the students' ability to deal with complex phenomena, issues and situations, and
- develop the students' potential for professional activities that demand considerable autonomy, or for research and development work.

1.2 Degree Objectives, as Specified in the Higher Education Ordinance (1993:100), appendix 2:

Knowledge and understanding

For the degree of Master the student must

- demonstrate knowledge and understanding in the main subject area, including both an overview of the area and deeper knowledge of certain parts of the area as well as insight into current research and development in the area, and
- demonstrate advanced methodological awareness in the main subject area of the programme.

Skills and ability

For the degree of Master the student must

- demonstrate an ability to integrate knowledge and to analyse, judge and handle complex phenomena, issues and situations even with limited information,
- demonstrate an ability to independently identify and formulate issues and to plan and carry out, using suitable methods, demanding tasks within the given timeframe,
- demonstrate an ability to, both orally and in writing, present and discuss conclusions and the knowledge and arguments on which these are based in dialogue with different groups, and
- demonstrate the skill required to take part in research and development work or to work in other demanding activities.

Critical skills and approach

For the degree of Master the student must

- within the main subject area demonstrate an ability to make judgements with reference to relevant scientific, social and ethical criteria and demonstrate awareness of ethical aspects of research and development work,
- demonstrate insight into the possibilities and limitations of science and its role in society and the responsibility of individuals in how it is used, and
- demonstrate the ability to identify his or her own need of further knowledge and to take responsibility for the development of his or her own knowledge.

1.3 Objectives of the Programme

On completion of the programme, students shall be able to:

- Use and implement robust analytical models in organizations within a given time frame.
- Manage large amounts of data in an organisation so as to be able to integrate and incorporate business intelligence into day to day decision making.
- Apply specialised theoretical and practical knowledge to be able to critically analyse, evaluate, synthesise and model data.
- Communicate methods, results, and knowledge using appropriate techniques to both specialists and laymen within an organization.
- Critically analyze and evaluate the relevant tools that an organization uses to better understand their business and to improve decision making.
- Review and reflect on the social and ethical issues, norms and relationships and act to ensure and execute them. Proper care must be ensured while handling sensitive and confidential data. Typical examples include information about bank customers, credit card information, and patient information.

2. Main Structure of the Programme

The BI Program gives an intensive and broad training in information analysis, information

modelling, decision making – key components in the BI chain training system - which integrate the core components from AI with in analytical skills in Information Systems with Statistics principles. This design aims for students to meet increasing global challenges in careers and provide the students with competence and capability from advanced data analysis research to enterprise management skills.

The one year master programme in business intelligence consists of four periods. During each of these, the students are taking two courses in parallel. During the program knowledge and skills in the area Micro Data Analysis and Big Data analysis is given. First semester during period 1 and 2 students are taking courses in Business Intelligence and Artificial Intelligence. In parallel they first take the course Statistical computing with R and later the course Data collection and data quality. During the semester the students are trained in analysis of company data both with statistical methods and methods coming from computer science in a Business Intelligence context. Furthermore, it addresses issues relating to data collection and data quality. At the end of the program, students have had courses related to different types of BI technologies which can be used in organizations. The program consists of courses that train students in practical skills to collect, store and analyze data.

During the second semester the students deepen their knowledge in data analysis with the help of the courses Datamining and Spatial analysis and GIS. During this semester the students write their Master thesis. The semester starts with a course in datamining and spatial data analysis. In the beginning of this semester, students will formulate a basic outline of their thesis work i.e. problem definition, hypothesis and a list of references. The students also have to describe how they intend to solve the problem and explain what material that will be used in the thesis and how they plan to access it. The plan should also include what need of new learning learning that exist in order to fulfill the thesis work. The plan will be delivered to a supervisory group for discussion and approval. During the second semester the student will pursue the thesis work. The thesis may be methodological in nature and contribute to the development of methods and techniques in micro-data analysis; or be practical in nature aimed at strengthening a part of an organizations' business intelligence chain.

3. Courses of the Programme

All courses are at advanced level belong to the main field, micro data analysis.

Term 1

Period 1

Artificial Intelligence, 7.5 credits

Statistical computing with R, 7.5 credits

Period 2

Data Collection and Data Quality, 7.5 credits
Business Intelligence, 7.5 credits

Term 2

Period 3 and 4

Data Mining, 7,5 hp

Spatial Data and Geographic Information Systems, 7.5 credits

Thesis work in Microdata Analysis, 15 credits

4. Degree Awarded

Degree of Master of Science [60 credits], Main Field of Study: Microdata Analysis.
(Filosofie magisterexamen, huvudområde: Mikrodataanalys).

5. Required Entry Qualifications

Bachelor's degree in Statistics, Economics, Computer Science, Information Science or Informatics and the following courses: Object Oriented Programming, 7.5 credits, Data analysis and Statistics, 7.5 credits and Database Systems, 7.5 credits and English 6

Bachelor's degree in Statistics, Economics, Computer Science, Information Science or Informatics or equivalent degree, and the following courses:

- Object Oriented Programming, 7.5 credits
- Data analysis and Statistics, 7.5 credits
- Database Systems, 7.5 credits

or equivalent knowledge.

Documented language proficiency knowledge equivalent to English B/English 6 at Swedish upper secondary school.

6. Other Information

The Master Programme in Business Intelligence is given in English.

The programme name can, on request, reports in the diploma if students have successfully completed 75% of the programme's courses and thesis work.

Approved:

Approved by the University Faculty Board 20 October 2015

Valid from Autumn semester 2016