DALARNA UNIVERSITY

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:
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:
For the degree of Master the student shall:

Knowledge and understanding
- 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
-demonstrate an ability to integrate knowledge and to analyse, judge and handle complex

* 1 Credit = 1 ECTS

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
- 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 organisations within a given time frame.
- Manage data in an organisation so as to be able to integrate and incorporate business intelligence into the day-to-day decision-making of the organisation.
- Apply theoretical and practical knowledge so as to be able to critically analyse, evaluate and synthesise data.
- Communicate theories, methods and results of data analyses and knowledge to business intelligence specialists and non-specialists using appropriate techniques.
- Critically analyse and evaluate the relevant tools that an organisation uses both to better understand its operations and to provide support for decision-making.
- Review and reflect on social and ethical aspects, and norms and conditions, and act to change these, especially in cases that involve the processing of sensitive and confidential data: for example, information about bank clients, credit cards, patients and suchlike.

2. Main Structure of the Programme

The Business Intelligence (BI) Programme provides students with an intensive and broad

education in data analysis, information modelling and decision-making, which are key components in the so-called BI chain. The programme integrates the most important components from Microdata Analysis with knowledge about the analysis of information systems using statistical principles. The design aims to develop the ability of students to meet increasing global challenges in their careers and to give them competence and capacity from advanced data analysis research to enterprise management.

In the programme, students take courses relating to BI and Big Data. Students receive training in the analysis of business data using both statistical methods and computer methods in a BI context. Furthermore, the programme addresses issues relating to data collection and data quality. By the end of the programme, students will have taken courses on how different types of BI technologies can be used in organisations. The programme comprises courses that teach students practical skills in how to collect, store, and analyse data.

In the second semester, students write their Master's thesis. The semester begins with students formulating a basic outline for their thesis work. In the plan, a problem is identified and a research outcome is formulated. The plan must describe how the problem is to be solved and what material the work will be based on, as well as how access to this can be assured. In addition, the plan outlines what the student needs to learn to be able to complete the thesis. The plan is presented to a supervisory group. Students complete their thesis in the second semester. The thesis work can be methodological in nature and contribute to the development of methods and techniques within the field of microdata analysis. It can also be practical in nature and aim to strengthen the BI chain of an organisation or improve it in some form.

3. Courses of the Programme

All courses belong to the main field of study, Microdata Analysis.

Business Intelligence, second cycle 7.5 credits
Data Analysis and Visualization, second cycle 7.5 credits
Data-Driven Leadership, or Economics of Leadership, second cycle 7.5 credits
Risk Analysis, second cycle 7.5 credits
Thesis for Master Degree in Micro data analysis, second cycle 15 credits

Elective courses:
Data Collection and Data quality, second cycle 7.5 credits
Data Warehousing, second cycle 7.5 credits

Logic and Mathematics for Computer Science, first cycle 7.5 credits
Python- and R-programming, first cycle 7.5 credits
Statistical Learning, 7,5 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, Business Administration, Computer Science, Information Science or Informatics comprising at least 180 credits and English 6

6. Other Information
The language of instruction is English.

Upon request, the name of the programme can be included on the degree certificate in those cases where the student has successfully completed the mandatory courses in the programme.

Approved:
Approved by the University Faculty Board 11 October 2018
Valid from Autumn semester 2018

Revised:
Revised, 1 March 2022
Revision is valid from Spring semester 2022