COURSE SYLLABUS
Data Analysis for Decision-Making, 7.5 credits

Data Analysis for Decision-Making, 7,5 högskolepoäng

Course Code:	JDAS27	**Education Cycle:**	Second-cycle level
Confirmed by:	Council for Undergraduate and Masters Education May 11, 2017	**Disciplinary domain:**	Technology
Valid From:	Aug 21, 2017	**Subject group:**	IF1
Version:	1	**Specialised in:**	A1F
Reg number:	IHH 2017/2187-313	**Main field of study:**	Informatics

Intended Learning Outcomes (ILO)

On completion of the course the students will be able to:

Knowledge and understanding

1. Describe how business data is harvested and stored

2. Explain and discuss the fundamental tasks in data mining, i.e., classification, regression, clustering and association rules

3. Explain and discuss basic techniques for classification, regression, clustering and association rules

4. Explain and discuss the phases in a data analysis project; i.e., preprocessing, modeling and evaluation

5. Explain and discuss the terms "big data" and "smart data"

6. Explain the basic MapReduce framework

7. Show familiarity with key research directions in data mining and machine learning

Skills and abilities

8. Use a software tool for all parts of a data analysis project; i.e., preprocessing, modeling and evaluation

9. Identify and apply a suitable data mining technique based on a problem description

Judgement and approach

10. Reflect on how data analysis can be applied to different use cases in marketing

11. Reflect on ethical consequences of big data and data analytics

Contents

The course develops the students' ability to manage and/or conduct data-driven decision-making, in particular data mining. The course includes the following elements:
- Fundamental tasks in data mining, i.e., classification, regression, clustering and association rules
- Basic techniques for classification, regression, clustering and association rules
- Organization of a data mining project, i.e., preprocessing, modeling and evaluation

- The MapReduce framework
- Software tools for data analytics
- Research directions in data mining
- Data analytics applied to different business domains

Type of instruction

The course is offered online.

The teaching is conducted in English.

Prerequisites

Bachelor's degree (i.e. the equivalent of 180 ECTS credits at an accredited university) in Business or Informatics including 30 credits of master level studies in Business Administration and/or Informatics (or the equivalent).

Examination and grades

The course is graded A, B, C, D, E, FX or F.

The examination consists of:
- A final exam
- One assignment divided into three parts

ILO number 1-7 are examined in the final exam.
ILO number 8-11 are examined in the assignment.

Registration of examination:

Name of the Test	Value	Grading
Final Exam[1,3]	4 credits	A/B/C/D/E/FX/F
Assignment[2]	3.5 credits	U/G

[1] Determines the final grade of the course, which is issued only when all course units have been passed.

[3] All parts of the compulsory examination in the course must be passed with a passing grade (A-E or Pass) before a final grade can be set. Grade is set in accordance to JIBS grading policy.

[2] All parts of the compulsory examination in the course must be passed with a passing grade (A-E or Pass) before a final grade can be set. Grade is set in accordance to JIBS grading policy.

Course evaluation

It is the responsibility of the examiner to ensure that each course is evaluated. At the outset of the course, evaluators must be identified (elected) among the students. The course evaluation is carried out continuously as well as at the end of the course. On the completion of the course the course evaluators and course examiner discuss the course evaluation and possible improvements. A summary report is created and archived. The reports are followed up by program directors and discussed in program groups and with relevant others (depending on issue e.g. Associate Dean of Education, Associate Dean of faculty, Director of PhD Candidates, Dean and Director of Studies). The next time the course runs, students should be informed of any measures taken to improve the course based on the previous course evaluation.

Other information

Academic integrity

JIBS students are expected to maintain a strong academic integrity. This implies to behave within the boundaries of academic rules and expectations relating to all types of teaching and examination. Copying someone else's work is a particularly serious offence and can lead to disciplinary action. When you copy someone else's work, you are plagiarizing. You must not copy sections of work (such as paragraphs, diagrams, tables and words) from any other person, including another student or any other author. Cutting and pasting is a clear example of plagiarism. There is a workshop and online resources to assist you in not plagiarizing called the Interactive Anti- Plagiarism Guide.

Other forms of breaking academic integrity include (but are not limited to) adding your name to a project you did not work on (or allowing someone to add their name), cheating on an examination, helping other students to cheat and submitting other students work as your own, and using non-allowed electronic equipment during an examination. All of these make you liable to disciplinary action.

Course literature

- Linoff & Berry (2011), *Data Mining Techniques: For Marketing, Sales, and Customer Relationship Management*, 3rd edition, ISBN:978-0470650936, Wiley.
- Foster et al. (2016), *Big Data and Social Science: A Practical Guide to Methods and Tools*, ISBN: 978-1498751407, CRC Press.