Linnæus University

Course syllabus

Faculty of Technology

Department of Informatics

1IK172 Introduktion till data analytics, 7,5 högskolepoäng
1IK172 Introduction to Data Analytics, 7.5 credits

Main field of study
Informatics

Subject Group
Informatics/Computer and Systems Sciences

Level of classification
First Level

Progression
G1F

Date of Ratification
Approved by Faculty of Technology 2021-11-29
The course syllabus is valid from autumn semester 2022

Prerequisites
Database and data modelling (1IK171) 7,5 hp or equivalent.

Objectives
After completing the course, students are expected to be able to:

- A.1 understand fundamental concepts and methods within data analytics field
- A.2 explain application areas of data analytics from an organizational perspective
- A.3 use tools for processing and visualizing large amount of data coming from different sources and with different formats
- A.4 develop analytical solutions for basic data analysis and pattern identification to enable informed decision-making
- A.5 reflect on ethical and privacy issues in relation to data management

Content
The course focuses on the understanding of theoretical and practical aspects in data analytics. This includes different phases of data handling such as data discovery, data aggregation, planning of the data models, data model execution, validation, and visualization and presentation. While the theoretical part encompasses some concepts of big data, data lakes, and machine learning, in the practical part students will use tools

for conducting the analysis and to generate visualizations. The course also addresses ethical issues revolving around data analytics utilization.

Type of Instruction

Teaching takes place in the form of lectures, tutorials, seminars, and laboratory work. The labs presentations are individual, whereas project presentations are in groups. Participation in seminars is mandatory.

Examination

The examination of the course is divided as follows:

Code	Designation	Grade	Credits
2201	Practical work	U/G	2,00
2202	Project	U/G	2,50
2203	Written Exam	U/G/VG	3,00

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

The laboratory work and project are assessed with U or G. The course ends with a written exam. After passing the labs and the project, the final grade is decided by the written exam.

Repeat examination is offered in accordance with Local regulations for courses and examination at the first and second-cycle level at Linnaeus University.

If the university has decided that a student is entitled to special pedagogical support due to a disability, the examiner has the right to give a customised exam or to have the student conduct the exam in an alternative way.

Objectives achievement

The examination elements are linked to the course objectives in the following ways:

Goal	2201	2202	2203
A.1		☑	☑
A.2		☑	☑
A.3	☑	☑	
A.4	☑		
A.5			☑

Course Evaluation

During the implementation of the course or in close conjunction with the course, a course evaluation is to be carried out. Results and analysis of the course evaluation are to be promptly presented as feedback to the students who have completed the course. Students who participate during the next course instance receive feedback at the start of the course. The course evaluation is to be carried out anonymously.

Required Reading and Additional Study Material

Mandatory literature

- João Moreira, Andre Carvalho, Tomás Horvath: A General Introduction to Data Analytics. Wiley. (150 of 315 pages) ISBN: 978-1-119-29626-3.
- A compendium of 100 pages from the related field will be assigned for reading.

Recommended reading material
Milligan Joshua, Learning Tableau 2020: Create effective data visualizations, build interactive visual analytics, and transform your organization, 4th Edition. Packt Publishing. ISBN-13: 978-1800200364

Reference literature
Sauter L. Vicki: Decision Support Systems for Business Intelligence, Wiley, latest edition.