UNIVERSITY OF SKÖVDE

TRANSLATION FROM SWEDISH

COURSE SYLLABUS

Predictive Analytics A1F

7.5 credits

Course code: IT828A
Version number: 2
Valid from: 1 July 2026
Ratified by: Curriculum Committee for Informatics
Date of ratification: 11 December 2025

1. General information about the course

The course is provided by the University of Skövde and is named Predictive Analytics A1F (Prediktiv analys A1F). It comprises 7.5 credits and is a second-cycle course. The level of progression is A1F.

The course is a part of the main field of study in Informatics. The disciplinary domain of the course is Technology.

2. Entry requirements

The course has the following entry requirements: passed IT734A Data Mining A1N (or the equivalent).

3. Course content

The course focuses on the predictive analysis of time series and complex data. There are two challenges that are introduced: (i) dynamic behaviours that extend across time; (ii) multivariate systems that are interconnected, which can exhibit endogeneity. These go beyond typical cases explored in data mining and machine learning, where the unit of analysis is either a single entity or omitting temporal dynamics. The course focuses on introducing methods and methodologies for exploring, analysing and identifying structures in the data; models and modelling methodologies to deal with such data; evaluation frameworks and principles to ensure appropriate specification, selection and combination of predictions; and, theories and tools to interpret predictive models and predictions, so as to effectively validate and communicate them to users and stakeholders. In the course we explore various applications of predictive analysis, drawing from both societal and industrial challenges.

4. Objectives

After completed course the student should be able to:

- extensively describe, problematize, and exemplify theories, models, key concepts, challenges, opportunities and risks in the predictive analysis of complex data;
- design, contrast, and implement strategies, methods and techniques for the predictive analysis of complex data;
- systematically analyze and argue for a particular research and analytical focus, and discuss the use of multiple methods and combined approaches for reliably addressing complex predictive tasks;
- critically discuss and in practice identify and deploy appropriate analytical methods and methodologies, in the context of the state-of-the-art literature, and benchmarks;
- evaluate and critically reflect on the applicability, effectiveness, risks and usefulness of theories, models and key concepts to predictive problems in complex data analysis; and
- present and effectively communicate the results of analysis of complex data in a useful way.

5. Examination

The course is graded A (Excellent), B (Very good), C (Good), D (Satisfactory), E (Sufficient) or F (Fail).

The examinations of the course consist of the following modes of assessment:

- **Seminar**
  1.5 credits, grades: G/U
- **Laboratory assignments**
  3 credits, grades: G/U
- **On-campus supervised written examination**
  3 credits, grades: A/B/C/D/E/F (determines the final grade)

Students with a permanent disability who have been approved for directed educational support may be offered adapted modes of assessment.

6. Types of instruction and language of instruction

The teaching is comprised of seminars, lectures and laboratory sessions.

The teaching is conducted in English.

7. Course literature and other educational materials

Course literature according to teachers' instruction on the learning platform.

8. Student influence

Student influence in the course is ensured by means of course evaluation. The students are informed about the results of the evaluation and potential measures that have been taken or are planned, based on the course evaluation.

9. Additional information

The content of the course corresponds completely or partially with the following course(s) and cannot be included in the required credits of a degree qualification:

- IT787A - Predictive Analytics A1F 7.5 credits

Further information about the course, as well as national and local governing documents for higher education, is available on the website of the University of Skövde.