1 Name, Scope and Level of the Course
The course is provided by the University of Skövde and is named Analysis of Complex Data A1F. It comprises 7.5 credits and is on advanced level. The level of progression of the course is A1F.

2 Objectives
After completed course the student should be able to:

- paraphrase, exemplify and infer theories, models, key concepts, challenges, opportunities and risks in analysis of complex data,
- paraphrase, exemplify and infer strategies, methods and techniques for handling challenges, opportunities and risks in analysis of complex data,
- classify problems by using theories, models and key concepts in analysis of complex data based on significant attributes to enable evaluation of applicability of strategies, methods and techniques,
- for selected domains, evaluate the applicability, effectiveness, risks and usefulness by using theories, models and key concepts while applying strategies, methods and techniques to problems in complex data analysis,
- for selected domains, apply appropriate methods and techniques to analysis of complex data, and
- present the results of analysis of complex data in an useful way.

3 Course Content
The course focuses on the analysis of complex data, where data is more complex than ordinary attribute-value connections, usually used in data mining and machine learning. Examples of such data structures are graphs and multivariate time series / event sequences and their hybrids. The interpretation of individual pieces of data are always dependent on the ambient data and metadata (eg, formalized conceptual models such as ontologies) in contrast to non-complex data in which interpretation depends primarily on only the metadata. Also addressed in this course are reasons for data complexity, and relevant strategies, methods and techniques for managing data complexity.

4 Forms of Teaching
The teaching comprises supervision, teaching lessons and seminars.

The teaching is conducted in English.

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

To achieve a final grade in this course the following must be met:
A final grade of A requires at least 3 hp of grade A and grade B on all other course units.
Grade B, either at least 3 hp of at least B and at least C on all other course units, or at least 3 hp of A and at least D on all other course units.
Grade C, either at least 3 hp of at least C and at least D
on all other course units, or at least 3 hp of B.
Grade D, at least 3 hp of at least D.
Grade E, requires all course units of at least E.

The final grade is issued only when all course units reach at least grade E.

Registration of examination results:

<table>
<thead>
<tr>
<th>Name of examination</th>
<th>Credits</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Seminar assignments</td>
<td>3 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Lab assignment</td>
<td>3.5 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Oral examination</td>
<td>1 credits</td>
<td>G/U</td>
</tr>
</tbody>
</table>

Students with a permanent disability who have been approved for special educational support may be offered adapted or alternative examinations.

6 Admission Requirements
Prerequisite courses for this course are: Passed courses: IT721A-Data Mining A1F (or the equivalent).

7 Subject, Main Field of Study and Disciplinary Domain
The course forms a part of the academic subject area of Informatics. The course is a part of the main field of study in Informatics at the University of Skövde. The disciplinary domain of the course is Technology.

Every course at the University of Skövde belongs to a subject. The division of subjects is used for follow-up and quality assurance. A main field of study is an area in which a degree can be awarded. Disciplinary domain is a division which is used by the government for the allocation of resources for studies at basic level and advanced level.

8 Approval of Course and Course Syllabus
The course was approved by the Curriculum Committee for Informatics on 8 February 2018. This course syllabus was approved by the Curriculum Committee for Informatics on 8 February 2018. It is valid from 1 July 2018.

9 Overlapping with Another Course
This course cannot constitute a part of a degree also containing a course the content of which is totally or partly equivalent to the content of this course.

10 Additional Information
Further information will be available on the university’s website before a course is given.

National and local regulations for higher education are available on the university’s website.

Upon completion of the course there will be a follow-up. The main purpose of this follow-up is to contribute to improvements of the course. The students’ experiences and views constitute one of the criteria for the follow-up and are gathered by means of course evaluations. The students will be informed of the results of the follow-up and any decisions regarding actions that are to be taken.

11 Course Literature and Other Educational Materials
Scientific articles indicated on the course website.