COURSE SYLLABUS

Name, Scope and Level of the Course
The course is provided by the University of Skövde and is named Advanced Programming A1N. It comprises 7.5 credits and is on advanced level. The level of progression of the course is A1N.

Objectives
After completed course the student should be able to:

- critically reflect and describe principles of functional programming,
- critically reflect and describe the main differences between functional- and imperative programming,
- critically reflect on efficiency issues on functional programming and
- demonstrate abilities to independently develop programs within the functional programming paradigm and in particular using the Scala programming language.

Course Content
Big Data analytics puts new demands on the programming needed to implement data mining, data analysis and visualization of results. The amount of data in itself makes even traditionally efficient algorithms unmanageable, which means that scalable algorithms become more and more important. This course gives an introduction to functional programming and can be seen as a basis for programming for Big Data. The main programming language within the course will be the "scalable language" Scala.

Forms of Teaching
The teaching comprises lectures. The teaching is conducted in English.

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

Registration of examination results:

<table>
<thead>
<tr>
<th>Name of examination</th>
<th>Credits</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Supervised examination(^1)</td>
<td>5.5 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Written assignment</td>
<td>2 credits</td>
<td>G/U</td>
</tr>
</tbody>
</table>

\(^1\) Determines the final grade of the course.

Admission Requirements
A Bachelor degree of at least 180 higher education credits (equivalent to 180 ECTS) within the fields of informatics or computer science or similar. A further requirement is proof of skills in English equivalent of studies at upper secondary level in Sweden, known as English course 6 / English course B (or the equivalent). This is normally demonstrated by means of an internationally recognized test, e.g. IELTS, TOEFL.
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


Articles according to a reference list on the learning platform.