COURSE SYLLABUS

Systembiologi A1F
Systems Biology A1F
7.5 credits

1 Name, Scope and Level of the Course
The course is provided by the University of Skövde and is named Systems Biology 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:

- in depth describe the paradigm in systems biology and defined central concepts in systems biology,
- describe and use different methods and tools to analyze different types of networks in systems biology,
- develop and apply mathematical models that are commonly used in pharmacokinetics, biochemistry and infection biology,
- apply non-linear regression to estimate the parameters of a biological model,
- in depth describe the importance of integrating biological data at different levels and
- critically review scientific papers in systems biology.

3 Course Content
The course includes various approaches in systems biology and how they can be applied on experimental data to understand complex biological systems. During the course, different types of network analyses, mathematical models and non-linear regression will be applied on biological data.

4 Forms of Teaching
The teaching comprises lectures, laboratory sessions and exercises.

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).

Registration of examination results:

<table>
<thead>
<tr>
<th>Name of examination</th>
<th>Credits</th>
<th>Grading</th>
</tr>
</thead>
<tbody>
<tr>
<td>Written assignment 1</td>
<td>3 credits</td>
<td>G/U</td>
</tr>
<tr>
<td>Written assignment 2</td>
<td>1 credits</td>
<td>G/U</td>
</tr>
<tr>
<td>Written examination in computer lab(^1)</td>
<td>3.5 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
</tbody>
</table>

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

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 BI733A-Bioinformatics Concepts and Methods A1N and passed SY763A-Experimental Design and Data Analysis for Life Science A1N (or the equivalent).
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. This is normally demonstrated by means of an internationally recognized test, e.g., IELTS or TOEFL or the equivalent.

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

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 Bioscience on 28 September 2017. This course syllabus was approved by the Curriculum Committee for Bioscience on 27 August 2020. It is valid from 1 January 2021 and replaces the course syllabus approved 26 March 2020.

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

Additional material and scientific articles.