1 Name, Scope and Level of the Course

The course is provided by the University of Skövde and is named Bioinformatics Concepts and Methods A1N. It comprises 7.5 credits and is on advanced level. The level of progression of the course is A1N.

2 Objectives

After completed course the student should be able to:

- extensively define concepts and questions that are central to bioinformatics, and critically evaluate practical applications of bioinformatics,
- describe the role of bioinformatics in the digitisation of clinical practice and research in bioscience and biomedicine, and how it thereby contributes to improving health and wellbeing,
- describe how bioinformatics has developed,
- describe and evaluate the public information sources that are central to bioinformatics, and how these are structured,
- independently apply and extensively describe methods and tools used for analysis of large scale data in molecular biology and biomedicine, and
- independently draw conclusions regarding strategies to solve a given bioinformatic problem and critically analyse the results.

3 Course Content

The course gives an overview of bioinformatics and a review of commonly used information sources and bioinformatic methods. The underlying principles of these information sources and tools are genera, and they can therefore be used in many problem domains. The goal of the course is to provide general knowledge of how bioinformatics is applied to solve problems in molecular biology.

4 Forms of Teaching

The teaching comprises of lectures, assignments and laborations/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).

The final grade will be issued only when all examinations are approved.

The final grade of the course is determined by the average from the grades for the two written assignments; A=5, B=4, C=3, D=2 and E=1. The average value is rounded to the nearest integer (half rounded up) and translated to a final grade for the course A=5, B=4, C=3, D=2 and E=1.

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>1.5 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Written assignment 2</td>
<td>1.5 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Written assignment 3</td>
<td>1.5 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Written assignment 4</td>
<td>1.5 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Written assignment 5</td>
<td>1.5 credits</td>
<td>A/B/C/D/E/F</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
Admission to the course requires a minimum of 90 credits in biology, medicine or computer science, including at least 15 credits at advanced level G2F (or equivalent).

7 Subject, Main Field of Study and Disciplinary Domain
The course forms a part of the academic subject area of Bioinformatics. The course is a part of the main field of study in Bioinformatics at the University of Skövde. The course can also be a part of the main field of study in Systems Biology. 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 22 February 2018. This course syllabus was approved by the Curriculum Committee for Bioscience on 27 February 2020. It is valid from 1 July 2020 and replaces the course syllabus approved 22 February 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 and web material. They are reported on a special list provided by the course coordinator.