COURSE SYLLABUS

Analys av NGS-data 1 A1N
Analysis of NGS Data 1 A1N
4 credits

Course Code: BI732A
The Course Syllabus is valid from: 1 January 2021
Date of Approval: 27 August 2020
Version Number: 6.1

Subject: Bioinformatics
Main Field of Study: Bioinformatics
Disciplinary Domain: Natural Sciences
Academic Level: Advanced level

1 Name, Scope and Level of the Course
The course is provided by the University of Skövde and is named Analysis of NGS Data 1 A1N. It comprises 4 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:
- describe the concept "next generation sequencing" (NGS),
- give an overview of some experimental techniques for NGS and what differs between them,
- in a thorough way describe one technique for NGS, possible error sources inherent in the technique and how these can affect data analysis and results,
- in a thorough way describe central steps in the analysis of NGS data, and
- use bioinformatical methods for analyzing NGS data and describe the results from such analyses.

3 Course Content
The course gives an introduction to "next generation sequencing" (NGS) with focus on data analysis. In the course the basics for NGS will be covered as well as different issues and applications for NGS. Some basic bioinformatical methods for handling and analyzing NGS data will be covered. The course includes both theory and practical exercises.

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).

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 into a final grade according to 5=A, 4=B, 3=C, 2=D and 1=E.

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>2 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Written assignment 2</td>
<td>2 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
The prerequisites for this course are 90 credits in biology, medicine or computer engineering where at least 15 credits are at level G2F.
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 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 Bioscience, 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 August 2020. It is valid from 1 January 2021 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.