**1 Name, Scope and Level of the Course**

The course is provided by the University of Skövde and is named Experimental Design and Data Analysis for Life Science A1N. It comprises 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:

- in depth describe different methods for hypothesis testing and describe how these methods are related to experimental studies in life science,
- in detail describe the steps of experimental design and its importance in different studies,
- understand and apply descriptive statistics,
- apply different analysis methods on biological data,
- analyse and present biological data with different graphical illustrations, and
- critically review a scientific paper with focus on the biological problem and the choice of method used for data analysis.

**3 Course Content**

This course includes various methods for data analysis and how they are applied in experimental studies within life science. The analysis methods will mainly be applied on datasets that have been generated from experiments in the field of biology. During the course, computer exercises will be applied to illustrate and analyse biological data. The course also includes critical reviewing of a scientific paper with focus on the biological problem and the choice of method used for data analysis.

**4 Forms of Teaching**

The teaching comprises lectures, supervision and presentations.

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).

Registation of examination results:

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

The prerequisites for this course are 150 higher education credits passed, of which at least 90 higher educa-
tion credits must be courses within biology or medicine. Among these higher education credits, at least 15 must be on G2E-level or higher (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 course can also be a part of the main field of study in Bioinformatics, Biomedicine, Molecular 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 25 January 2018. This course syllabus was approved by the Curriculum Committee for Bioscience on 26 September 2019. It is valid from 1 July 2020 and replaces the course syllabus approved 25 January 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 provided material.