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

- apply statistical models to analyse relationships between infections and risk factors,
- apply mathematical and statistical models to analyse and study disease transmission in a population, and
- critically review and analyse different theoretical methods used in scientific articles in infection biology, and present the results of these orally.

3 Course Content
The aim of the course is to provide an in-depth theoretical knowledge with practical applications within infection biology. The course deals with different methods for analysis and modelling such as logistic regression, two-way ANOVA, SIR models, network models, and cellular automaton. During the course, the theoretical parts will be illustrated with practical computer exercises. The course also includes a critically review of scientific articles in infection biology with focus on the applied theoretical method.

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).

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</td>
<td>1.5</td>
<td>G/U</td>
</tr>
<tr>
<td>Oral presentation</td>
<td>1.5</td>
<td>G/U</td>
</tr>
<tr>
<td>Written examination in computer lab(^1)</td>
<td>4.5</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 SY763A-Experimental Design and Data Analysis for Life Science A1N and passed BV701A-Molecular and Cellular Infection Biology A1N and attended SY765A-Systems Biology A1F (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, 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 course can also be a part of the main field of study in Bioinformatics, 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 28 April 2015. 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 20 December 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.