Examensarbete i systembiologi A2E
Master Degree Project in Systems Biology A2E
60 credits

1 Name, Scope and Level of the Course
The course is provided by the University of Skövde and is named Master Degree Project in Systems Biology A2E. It comprises 60 credits and is on advanced level. The level of progression of the course is A2E.

2 Objectives
After completed course the student should be able to:

- assimilate practical experience in research methodology in systems biology and adjacent areas,
- plan, perform and evaluate scientific experiments and methods individually and independently,
- integrate and apply acquired knowledge to solve scientific problems in systems biology and adjacent areas,
- in a scientific way communicate scientific results orally and in writing,
- analyze and evaluate experimental data,
- write a popular scientific summary,
- discuss relevant ethical aspects and describe the project’s impact on the society, and
- critically and independently review scientific reports.

3 Course Content
In this course the student will get the opportunity to collect practical experience in research in systems biology and adjacent areas. The course gives the student an opportunity to work individually and independently with a research project at the university, in the public sector or at a company in Sweden or abroad. The course consists of six exam parts:

Written assignment, 8 hp
During this part, a first literature review is written and the scientific problem and hypothesis is formulated for the project. A preliminary time plan for the project should also be established. In addition, ethical aspects of the work should be discussed. Obtained grade Pass on the written assignment is required for students to be able to be examined in other examination parts which are included in this course.

Laboratory assignment, 30 hp
During this part, the hypotheses are tested.

Essay, 20 hp
The report should be written in English. The report can under certain circumstances be written in Swedish. It should always contain a brief popular scientific summary of a maximum of one page in English.

Oral presentation, 1 hp
The examination involves an oral presentation and a poster presentation. Criticisms and suggestions derived from the presentations should be considered and included in the final version.

Student review, 1 hp
Opposition includes critical review of another students report.
4 Forms of Teaching
The teaching comprises supervision, laboratory sessions 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).

The final grade is determined by the average of the grades (A=5, B=4, C=3, D=2, and E=1) for the examination parts Laboratory assignment and Essay.

After course is completed access to additional time for supervision for completion of degree project is limited. Time for supervision is decided by the school and admitted at most until one year after end of course.

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>8 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Laboratory assignment1</td>
<td>30 credits</td>
<td>A/B/C/D/E/F</td>
</tr>
<tr>
<td>Essay1</td>
<td>20 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>
<tr>
<td>Student review</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 prerequisite for this course are 52.5 ECTS credits at the advanced level. In addition to that, the following course are required: [MB725A-Experimental Methods in Molecular Biology A1N or BM782A-Experimental Methods and Design in Biomedicine A1N] and [MB726A-Molecular Biotechnology A1N, BM713A-Tumor Biology A1N or MB722A-Molecular and Cellular Infection Biology A1N] and SY748A-Biostatistics A1N 5, BI728A-Expression Analysis A1N, SY746A-Systems Biology A1F and any of the courses [Tumor biology - modeling A1F, SY739A-Molecular Markers for Diagnosis and Prognosis A1F, BI727A-Molecular biotechnology - modelling A1F or Infection Biology - modeling A1F].

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 25 January 2018. It is valid from 1 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.