

Syllabus for Theoretical ecology 7,5 ECTS credits

1. Course details

Approved by the Education Committee of the Faculty of Science 01-03 -2007. The syllabus is valid from 01-07-2007. The course is at the Second cycle.

2. General information

The course is part of the main field of study in Biology at the Faculty of Science. The course is optional in a Master's degree in Science, with a major in Biology. The course is also offered as a single subject course. The language of instruction is English if necessary.

3. Learning outcomes

On completion of the course, the students shall have acquired the following knowledge and understanding:

General goal: A deeper understanding of basic ecological theories and the ability to independently investigate theoretical ecological questions.

Specific goals: The students shall:

- have a basic knowledge of modern ecological and evolutionary theory and how they are connected
- be able to use the most important mathematical tools in theoretical ecology
- be able to describe the most important evolutionary mechanisms in natural systems and how they are connected to basic ecological processes such as population growth, density and frequency dependence
- be able to read, analyse and evaluate scientific literature within the field
- be able to independently formulate theoretical issues and derive outcomes and predictions

4. Course content

The course consists of a few main topics, divided into subtopics:

- population growth and fitness
- optimizing individual behaviors
- trophic interactions and community dynamics
- the evolution of life histories
- evolutionary dynamics
- independent project

5. Teaching and assessment

Teaching consists of lectures, seminars, and a small independent project at the end of the course. Seminars and the project are compulsory.

Examination takes the form of a written exam at the end of the course.

Students who fail the ordinary tests will have an opportunity to take another test in close proximity to the ordinary test.

6. Grades

Students are awarded one of the following grades: Distinction, Pass or Fail.

To be awarded a Pass on the whole course the students shall have passed the test, have acceptable project reports and to have participated in all compulsory course elements.

The final grade for the course is determined by the result of the written exam.

7. Admission requirements

To be eligible for the course requires: 105 ECTS credits natural science studies including courses corresponding to BIO580 Basic Ecology 15 ECTS credits, BIOS02 Methods in Modelling Biological Systems 7.5 ECTS credits and BIO611 Ecology 15 ECTS credits alternatively BIO621 Limnology 15 ECTS credits and BIO782 Aquatic Ecology 15 ECTS credits.

8. Literature

According to a list established by the department, available at least five weeks before the start of the course, see the web-page for Undergraduate Studies in Biology, <http://www.lu.se/biology-education>

9. Further information

The course cannot be credited as part of a degree along with BIO736 Theoretical ecology 10 credits.