Department of Biology Education

Stockholm University

Syllabus

for course at advanced level

Molecular Plant-Microbe Interactions
Molekylära växt-mikrobinteraktioner

15.0 Higher Education Credits
15.0 ECTS credits

Course code:	BL8020
Valid from:	Autumn 2008
Date of approval:	2006-09-27
Changed:	2008-04-07
Department	Department of Biology Education
Subject	Biology
Specialisation:	A1N - Second cycle, has only first-cycle course/s as entry requirements

Decision

This syllabus has been approved by the Board of the Faculty of Science at Stockholm University.

Prerequisites and special admittance requirements

For admission to the course, knowledge is required equivalent to a minimum of 30 credits in Chemistry and a minimum of 90 credits in Biology or Molecular Biology. Additionally, it requires a minimum of 15 credits on advanced level in the area of Molecular Life Sciences. English B or equivalent.

Course structure

Examination code	Name	Higher Education Credits
8A20	Theory	6
8B20	Literature review	1.5
8D20	Project	7.5

Course content

a) The course covers the molecular mechanisms that are the basis for both symbiotic and pathogenic interaction between plants and microbes, including recognition processes and signal exchange (bacteria, cyanobacteria, fungi and viruses). The balance between symbiosis and parasitism, as well as applied and ecological aspects of pathogen defense and resistance responses are discussed. The use of organismal databases in the internet to identify genes involved in interactions is taught. The course integrates lectures, student seminars, group discussions, method presentations, laboratory work and data analysis.
b) The course includes the following elements 1) Theory 6 hp 2) Literature Review 1,5 hp 3) research Project7,5 hp.

Learning outcomes

It is expected that the student after taking the course will have:
•a deep understanding of the different forms of interactions that occur between plants and microbes and knowledge about the signal transduction mechanisms that are the basis of these interactions.
•knowledge about the importance of symbiosis in plant nutrition, nutrient exchange between organisms and the balance between symbiosis and parasitism.
•understanding of the different molecular processes that form the basis for pathogenicity, insight in common principles in defense against/symbiosis with pathogens
•the ability to utilize organismal databases to elucidate interactions and to identify genes involved in different processes

Education
The education consists of lectures, literature reviews, group discussions and laboratory project work. Participation in group discussions, project work and group education associated with this is compulsory. An examiner may rule that a student is not obliged to participate in certain compulsory education if there are special grounds for this after consultation with the relevant teacher.

Forms of examination
a. Examination for the course is in the following manner: Measurement of knowledge for element 1 takes place through: Written and/or oral examination. Measurement of knowledge for element 2 and 3 takes place through: Written and/or oral presentations.

b. Grading is carried out according to a 7-point scale related to learning objectives:
A = Excellent
B = Very Good
C = Good
D = Satisfactory
E = Sufficient
Fx = Fail
F = Fail

c. Grading criteria for the course will be distributed at the start of the course.

d. A minimum grade of E is required to pass the course, together with:
•participation in all compulsory education

e. Students who fail to achieve a pass grade in an ordinary examination have the right to take at least further four examinations, as long as the course is given. The term “examination” here is used to denote also other compulsory elements of the course. Students who have achieved a pass grade on an examination may not retake this examination in order to attempt to achieve a higher grade. Students who have failed to reach a pass grade on two occasions have the right to request that a different teacher be appointed to set the grade of the course. A request for such appointment must be sent to the departmental board.

Interim
Students may request that the examination is carried out in accordance with this syllabus even after it has ceased to apply. This right is limited, however, to a maximum of three occasions during a two-year-period after the end of giving the course. A request for such examination must be sent to the departmental board.

Misc
The course is a component of the Master's Programme in Biology and Molecular Life Sciences, and it can also be taken as an individual course.

Required reading
Course literature is decided by the departmental board and is described in an appendix to the syllabus.