Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

## Syllabus

# BIo678.1 Plant Growth and Development, 15.0 credits

## Tillväxt och utveckling hos växter

The course is given as course independent of study programme

Syllabus discontinued 15 April 2009

Version 1 in Slukurs. Corresponds to version 1 in Ladok

## Syllabus approved

25 October 2006

The version applies to students admitted from autumn 2007 to spring 2008

The version is not a module version

## Subjects

Biology

## Education cycle

Second cycle

## Modules

| Title | Code | Credits |
|---|---|---|
| Single module | 0101 | 15.0 |

## Advanced study in the main field

## Grading scale

Pass / Failed

The requirements for attaining different grades are described in the course assessment criteria which are contained in a supplement to the course syllabus. Current information on assessment criteria shall be made available at the start of the course.

## Language

English

## Prior knowledge

BSc degree in Biology with 60 credits in Biology including 7.5 credits Cell biology and 15 credits Chemistry, or the equivalent.

## Objectives

After completing the course the student will:
-have advanced knowledge of the structure and function of higher plants and trees, plant developmental biology and the impact of environmental factors on plant development (including stress responses)
-have a good understanding of experimental procedures and technology used in plant biology research
-be able to independently perform, summarize and present experiments
-understand, and be able to evaluate and discuss novel discoveries described in scientific papers
-be able to summarise knowledge within a specific research area and present this knowledge in an oral seminar.

## Content

The course deals with the regulation of growth and development in higher plants. It also considers plant responses to different environmental conditions.
Specific areas to be covered in the course include: (i) central aspects of developmental biology such as embryo development, stem cells, primary and secondary meristems, cell division and cell elongation; (ii) signal transduction and the hormonal regulation of plant growth and development; and (iii) molecular and whole plant mechanisms for the perception of and adaptation to biotic and abiotic stresses. The students will perform experiments in plant anatomy and mutant analysis in which they will learn laboratory techniques commonly used in DNA, RNA and protein analyses. The students will also give oral presentations and read current scientific literature. The course is closely connected to research projects currently being pursued at Umeå Plant Science Center.

## Implementation

Timetabled activities:
Lectures ca. 60 hrs
Laboratory experiments ca. 80 hrs (compulsory)
Student seminars ca. 15 hrs (compulsory)
Literature discussions ca. 15 hrs (compulsory)
Demonstrations ca. 10 hrs (compulsory)
Workshops ca. 30 hrs
Non-timetabled group activities:
Writing laboratory reports ca. 60 hrs
Exercises ca. 20 hrs
Self-directed studies:
Literature studies ca. 80 hrs
Seminar preparation ca. 25 hrs
Examination ca. 5 hrs
Total ca. 400 hrs

## Examination

### Requirements for examination

Assessment is based on performance in the written examination, and presentation of the student's laboratory work, and oral seminar.

Successful completion of the course requires: a pass in the written examination, satisfactory appraisals of the presentations and oral seminar, and participation in compulsory activities.

- If the student fails a test, the examiner may give the student a supplementary assignment, provided this is possible and there is reason to do so.
- If the student has been granted special educational support because of a disability, the examiner has the right to offer the student an adapted test, or provide an alternative assessment.
- If changes are made to this course syllabus, or if the course is closed, SLU shall decide on transitional rules for examination of students admitted under this syllabus but who have not yet passed the course.
- For the examination of a degree project (independent project), the examiner may also allow the student to add supplemental information after the deadline. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

### Additional information

On request, exchange students will be graded according to the ECTS scale.

- The right to take part in teaching and/or supervision only applies to the course date to which the student has been admitted and registered on.
- If there are special reasons, the student may take part in course components that require compulsory attendance at a later date. For more information on this, please refer to the regulations for education at Bachelor's and Master's level.

### Responsible department

Department of Forest Genetics and Plant Physiology

### Supplementary Information

*Finalized by:* Programkommitté skog och mark
*Biology Area:* Botany
*Replacement course:* BI4273