

Blxxxx Host Plant Resistance Breeding as a part of Integrated Pest Management, 3.0 credits

Syllabus approved

2020-11-20

Applies to students admitted in:

Spring 2021

Subjects

Biology/Agricultural science

Education cycle

Second cycle

Advanced study in the main field

Second cycle, only first-cycle courses as entry requirements (A1N)

Grading scale

Pass or Fail

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

The equivalent of 120 credits including 30 credits in Biology or 30 credits in Horticultural Science or 30 credits in Agricultural Science, and English 6 or similar.

Objectives

The aim of the summer school is to show that plant breeding and plant health go hand in hand and that a broad approach within plant science is needed to improve plant health. In addition, we want to highlight that more research is needed for agriculture and forestry to become more sustainable and help reach the Sustainable Development Goals (SDGs) set in Agenda 2030.

After completing the course, the student shall be able to:

- understand the connection between resistance breeding and plant health
- describe some methods related to resistance breeding of crop plants
- have insight on the need of collaboration and communication between the society, academia, and breeding and protection companies in order to reach UN Sustainable Development Goals

Content

Techniques related to plant breeding and protection such as gene pyramiding, genomic selection, genetic modification, genome editing, and application of biologicals will be taken up, together with concepts of multivariate and intercropping systems in an agro-ecological perspective. The importance of readily available genetic materials in biobanks and legislation as well as public perception and acceptance of innovations will be discussed. As part of the course there will be a case study-based exercise where the students will identify synergies and conflicts between UN Sustainable Development Goals in relation to different plant protection strategies employed.

The course will contain a mixture of lectures, study visits and a group case study including literature study. New pedagogical tools to teach plant biology will be applied in line with Erasmus+ ESCAPAdE objectives (<http://escapade-erasmus.eu/>). These will be worked out together with teachers at the universities in ESCAPAdE.

Experts in their field will be teaching the course. A study visit will be to the SLU Biotron where plant phenotyping can be performed for both plant breeding and protection research. A study visit to Nordic Genetic Resource Center as well as to a plant protection and breeding company or similar in Scania in southern Sweden will be included.

Participation in lectures up to 80%, study visits and case study work are obligatory.

Formats and requirements for examination

To pass the course, active participation, approved written log book based on the different parts of the course including a reflection on the pedagogical tools used, and oral presentation of the case study are required.

Additional information

The course is planned as a campus course 17-21 August, 2021, with following home assignments to be completed by the 27th of August 2021. Students can join the job fair organized the 23-24 August. In case of covid-19 restrictions, the course can be given remotely. The course is part of Erasmus+ ESCAPAdE , and ELLS, Euroleague for life sciences. In addition to formal prior knowledge requirements, students are recommended to have

basic knowledge in genetics and plant protection. Application to the course must be done via www.universityadmissions.se.

The minimum number of students of 12 for the course to be given.

Responsible department

Department of Plant Breeding

Co-responsible department

Department of Plant Plant Resistance Biology