



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# SLUkurs

## Syllabus

**PFG0020 Population genetics and plant breeding, 4.5 credits**

## Syllabus approved

2006-12-22

## Subjects

Biology

## Education cycle

Third cycle

## 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

The course is for PhD students with a background in biology, but little background in modern population genetics

## Objective, including learning outcomes

After the course, the participants should have: knowledge about methods and strategies used in population genetics and plant breeding, like genotyping, QTL mapping and association mapping

## **Content**

The course will cover , statistics, genetics/Population genetics , molecular population genetics, quantitative genetics, QTL mapping, Association mapping, Phylogenetics/Molecular evolution, Marker assisted selection and Breeding.

Three computer labs will be given: QTL mapping, Genotyping and Association mapping.

The course will be given at Umeå Plant Science Centre, and examples and lab exercises will be taken from ongoing research projects at UPSC.

## **Requirements for examination**

Participation in lectures, labs and exercises.

## **Additional information**

Most of the days, lectures will be given in the morning and labs and exercises in the afternoon.

Course Organiser

Stefan Jansson, UPSC, Department of Plant Physiology, Umeå University

Teachers

Rosario Garcia Gil, UPSC, Department of Forest genetics and Plant Physiology, SLU Umeå

Pär Ingvarsson, UPSC, Department of Ecology and Environmental Sciences, Umeå University

Patrik Waldman, UPSC, Department of Forest genetics and Plant Physiology, SLU Umeå

## **Responsible department**

Department of Forest Genetics and Plant Physiology