Syllabus

Introduction to forest management research, basic data handling and statistical analysis.

Prerequisites

The student must be enrolled as a doctoral student or the equivalent of 120 higher education credits. The course will be offered in English if required.

Learning objectives

The aim with the course is to introduce basic generic skills that are needed for research within the field of forest management. Focus of the course is on data-management, analysis of large data and field experimental research design. The course will also give the students an introduction to long-term experiments and train students to retrieve information from earlier published research results. The teachers of the course will be active researchers from the forest faculty situated both in Umeå, Ultuna and Alnarp and will thereby also increase the students research network to other campuses. We will aim for an equal distribution in gender between the teachers.

After completing of the course, the student will:

- have basic knowledge in data treatment, analysis of experimental data, and be experienced in data handling.
- have basic knowledge in R and basic statistics, including regression, mixed models techniques
- be able to perform model validation of experimental results.
- have basic knowledge of long-term field experiments in Sweden.
- be able to conduct search for relevant scientific literature and to summarise conclusions and raise valid further research questions within a topic that is relevant for the student.

Credits

9 ECTS for doctoral students, 7.5 for students on master level

Content

The course content is divided into five modules covering different aspects of forest management research. Each module focuses on one generic skill that is useful for doctoral and master students:

1. Data treatment in R
2. Introduction to statistics in R
3. Research design and field experiment
4. Analyses of long term field experiments
5. Retrieval and summary of published research information

The modules will be hosted on one course portal where students and teachers share results, discussions and assignments throughout the duration of the course. In addition, each course participant has the possibility to present his/her research interests on the course portal.

Teaching and learning methods

All modules will be structured as described below. Master students will have different assignment than PhD-students, who are required to answer to more in-depth research questions.

Module structure:
- An introductory lecture (about 2*40 minutes), on videolink. The lectures will be available at the course portal afterwards.
- Individual exercises within the module subject, developed and supervised by the teacher responsible for each module
- An individual assignment, commented and supervised by teachers responsible for the module.

Course duration

5 months (~ 1 module /month)

Examination

The student is required to complete all the exercises and assignments for all modules, which must be approved by the teacher responsible for the module.