



# SLUkurs

## Syllabus

**PFS0037 Forest Remote Sensing, 7.5 credits**

## Syllabus approved

2008-09-02

## 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

Accepted PhD students who need a course in remote sensing and have knowledge in Geographic Information Technology (GIT), corresponding to at least 5 weeks of full time studies.

## Objective, including learning outcomes

The student will after the course:

-have knowledge about the physical and technical conditions for remote sensing of

forests

- knowledge about sensors of relevance for remote sensing of forests, ie digital surveying aerial cameras, and other optical sensors, laser scanners and radars;
- have obtained an orientation about modern digital survey cameras and digital photogrammetry;
- knowledge about and different sensor platforms and their properties, including aircrafts, unmanned aircrafts and satellites;
- knowledge about and practical experience of basic digital image processing;
- knowledge about forest relevant applications of satellite data analysis and different steps in this process;
- knowledge about how remote sensing data and field data are combined for estimation of state and change.
- knowledge about the accuracy in estimations relevant to forestry, and under with presumptions remote sensing techniques are profitable.

## **Content**

Depending on the previous skills and the needs of the PhD students, practical moments in the MSc level course will be replaced with literature studies. The lectures cover the physical conditions for remote sensing techniques relevant to analysis of forests; forestry aerial photo interpretation and interpretation of vegetation and landforms, techniques for collection of remote sensing data, i.e. aerial photography and registration with satellite based sensors etc; processing of digital remote sensing images, statistical techniques for combination of remote sensing data and field data, practical applications of different remote sensing methods; and expected development within the remote sensing area.

Laboratory work covers interpretation of pictures, and analysis of digital remote sensing data with PC-based programs. The course ends with an exercise where the students are applying the knowledge gained during the course and evaluate the result in field.

## **Requirements for examination**

Written or oral exam. and laboratory tasks

## **Additional information**

The course is given by an Environmental Certified Department (ISO 14001)

## **Responsible department**

Department of Forest Resource Management