Sveriges lantbruksuniversitet
Swedish University of Agricultural Sciences

SLUkurs

Syllabus

PAS0007 Applied NIR spectroscopy, 7.5 credits

Syllabus approved

2002-05-30

Subjects

Chemistry/Biology/Crop Production Science

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

40p Science or 10p Chemistry or equivalent.

Objective, including learning outcomes

After the course, the student should have basic knowledge about NIR-spectroscopy (Near Infrared Spectroscopy) and its application areas.

Content

Basic knowledge about data treatment with multivariate calibration for NIR-spectroscopy will be covered. Lectures cover basic NIR-spectroscopic theory, instrument design and function, multiple scatter correction and strategy for selecting calibration samples. Processing of NIR-data, and calibration using PCA and PLS are discussed as well as prediction errors etc. Calibration analysis for various applications and sample preparation will be discussed. The lab work is intended to give the student opportunity to get familiar with NIR-instrumentation and three different applications are studied. Lab data is used for calibrations and predictions.

Requirements for examination

Written exam. Lab work and lab reports compulsory.

Additional information

Responsible department

Department of Forest Biomaterials and Technology