



Sveriges lantbruksuniversitet  
Swedish University of Agricultural Sciences

# SLUkurs

## Syllabus

**PFS0145 Stable Isotope Techniques in Ecology and Hydrology, 3.0 credits**

## Syllabus approved

2018-01-17

## Subjects

Chemistry/Soil 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

Admission to a Ph.D. program, basic knowledge of chemistry, ability to use excel spreadsheets, and experience or interest in ecological or hydrological research, from ecophysiology to community ecology to catchment biogeochemistry

**Objective, including learning outcomes**

To provide an opportunity to learn basic stable isotope techniques and to see some of their ecological applications in a fun, supportive atmosphere.

**Content**

Application of stable isotope techniques, including use of natural abundance and labeling, in ecology and hydrology. Focus is on carbon, water, and nitrogen, including sources of variation and quantitative assessments of fractionation. Key applications include photosynthetic pathways, water-use efficiency, water source partitioning by plants, diet and water-source analysis in animals, hydrologic processes, and soil physical and biochemical processes.

**Requirements for examination**

Student performance will be assessed based on exercises, participation, and a research proposal

**Additional information**

We will request samples of, e.g., hair and breath, to be sent at least eight weeks before the meeting in Umeå. These will be analyzed and the results provided to you when you arrive. Details have yet to be worked out.

15 April 2018: Course reading materials and exercises distributed

14 - 18 May, 2018: course meeting in Umeå, 0900-1600 each day.

1 June, 2018: Student proposals submitted.

**Responsible department**

Department of Forest Ecology and Management