



LUND UNIVERSITY  
Faculty of Science

## SYLLABUS

Date  
9 May 2016

Reg. No.  
U 2016/311

### **Syllabus for the course "Applications in laser ablation inductively coupled plasma mass spectrometry (LA-ICP-MS) – an introduction for users", NAGE004**

The course syllabus was confirmed by the Faculty board for graduate studies 30 June 2016. The course is in the third cycle and amounts to 3 credits.

*The course syllabus is formally approved in Swedish. This is a translation.*

#### **Learning outcomes**

On completion of the course, participants shall be able to:

##### *Knowledge and understanding*

- Describe the basic principles of LA-ICP-MS, analytical strategy, data reduction and data presentation.
- Describe how LA-ICP-MS can be used in trace element- and isotope analyses, and how these tools can be used in the student's own research.

##### *Skills and abilities*

- To plan the analysis and to identify analytical constraints.
- Making calculations of raw data and assess analytical quality at a basic level.

##### *Judgement and approach*

- Demonstrate a basic ability to identify analytical feasibility and to assess limitations in LA-ICP-MS-based data, their own as well as in the literature.

#### **Course content**

The course aims to give graduate students a basic understanding of LA-ICP-MS-based trace element- and isotope analyses, its possibilities and limitations. The course is based on lectures where theoretical concepts are reviewed in conjunction with practical exercises to give students a deeper understanding of different techniques and analytical philosophies. An overall goal of the course is to give students insight into how the LA-ICP-MS technique can be used in their own research, as well as providing an opportunity for those interested to proceed with such analyses.

#### **Teaching**

5 lecture days.

Exercises equivalent to one week of full time work.

#### **Assessment**

The examination is based on exercises and attendance at lectures.

**Grading scale**

Possible grades are Pass and Fail. To pass the course, the student must have a presence of at least 80% of the lectures and pass all exercises.

**Language of instruction**

The course is taught in English.

**Entry requirements**

Admitted as post-graduate student.

The student should have knowledge of calculations in Excel.

**Additional information**

The course is aimed primarily at researchers who need trace element concentrations at a micrometre-scale spatial resolution in minerals or biological materials as well as radiometric spot dating methods. The number of participants is limited to 16.

Admittance to the course is based on the needs of students and the course's relevance to their graduate studies. Post-graduate students at the Faculty of Science at Lund University