



# FSK3887 Characterization Techniques in Materials Physics using Neutron and Synchrotron Radiation 7.5 credits

Karakteriseringsmetoder i materialfysik med neutroner och synkrotronljustrålning

This is a translation of the Swedish, legally binding, course syllabus.

## Establishment

Course syllabus for FSK3887 valid from Spring 2017

## Grading scale

G

## Education cycle

Third cycle

## Specific prerequisites

Enrolled as PhD student, with a Master of science degree in engineering physics, or equivalent.

## Language of instruction

The language of instruction is specified in the course offering information in the course catalogue.

## Intended learning outcomes

Provide fundamental understanding for material characterization techniques using neutrons and synchrotron radiation

## Course contents

High brilliance and intensity sources, X-ray diffraction and scattering, neutron diffraction and scattering, X-ray absorption, X-ray emission, Photoelectron Spectroscopy, Imaging techniques

## Course literature

Giorgio Margaritondo, Elements of Synchrotron Light: For Biology, Chemistry, and Medical Research, Oxford University Press, USA (2002)

Jens Als-Nielsen, Des McMorrow, Elements of Modern X-ray Physics, Wiley (2001)

B.T.M. Willis, C.J. Carlile, Experimental Neutron Scattering, Oxford University Press (2009)

## Examination

Based on recommendation from KTH's coordinator for disabilities, the examiner will decide how to adapt an examination for students with documented disability.

The examiner may apply another examination format when re-examining individual students.

If the course is discontinued, students may request to be examined during the following two academic years.

Hand-in exercises and seminar

Grad: P/F

## Ethical approach

- All members of a group are responsible for the group's work.
- In any assessment, every student shall honestly disclose any help received and sources used.
- In an oral assessment, every student shall be able to present and answer questions about the entire assignment and solution.