Kursnamn: **Ion Beam Materials Analysis**
Name of course

**Omfattning (högskolepoäng): 5**
ECTS credits

**Tidsperiod: March/April 2017 – May/June 2017**
Course period

**Antal platser: ~ 12-15**
Maximum number of participants

**Undervisningsspråk: English**
Language of instruction

**Kursens syfte samt motivering till varför den bör vara fakultetsgemensam (max 150 ord)**
Aim of course and motivation as to why it should be considered "multidisciplinary" to the extent that the faculty should allocate extra financing.

The course aims to instruct interested students about the analytical potential of ion beam based material analysis. It will present and interactively explain the underlying fundamental physics necessary to enable PhD-students to plan, perform and analyse experiments using energetic ion beams and to make decisions on the applicability of the individual methods for their research problems. At present, some students from chemistry, physics and technical science departments are organized in a small user-group performing ion beam analysis. These activities which are part of their thesis work it shows the potential of the methodology. The course aims to give the students a broader understanding and we plan to expand these activities in the near future.

**Kursinnehåll, kursens uppläggning samt examinationsform (max 150 ord)**
Contents, study format and form of examination

**Fundamentals of Ion-Surface interaction: interaction with target nuclei, interaction with target electrons; Rutherford backscattering spectrometry (RBS), Medium-energy ion scattering (MEIS), Elastic recoil detection analysis (ERDA), Particle induced X-ray emission (PIXE), micro beam applications, Nuclear reaction analysis (NRA), Software for evaluation of IBA experiments, Instrumentation for IBA experiments, RBS and ERDA laboratory exercises (preferably using samples from the course participants), exercises, short quizzes and presentations (assignments) of selected topics by the participants.**

**Målgrupp/er (specifiera ämnen/inriktningar) samt rekommenderade förkunskaper**
Target group/s (specify, if possible, subject/specialization) and recommended background

**Physicists (solid state physics, materials science), Engineers (electronics, solar cells), Chemists (inorganic & organic chemistry), Biologists (environmental research)**

**Huvudansvarig institution: Physics and Astronomy**
Department with main responsibility

**Andra inblandade institutioner (specifiera hur).**
Other departments involved (specify how).
Tandemlaboratoriet – användning av accelerator för labbtilfällen

Kontaktperson/er (namn, e-postadress)
Contact person (name, e-mail address)
Daniel Primetzhofer, daniel.primetzhofer@physics.uu.se

Anmälan om kursdeltagande till
Application from course participants should be sent to
Daniel Primetzhofer

Senast
Not later than