LUNDS UNIVERSITET
Lunds Tekniska Högskola

Course syllabus

Nanovetenskap och nanoteknik - en introduktion
Nanoscience and Nanotechnology - an Introduction

FFFA02, 7,5 credits, G1 (First Cycle)

Valid for: 2023/24
Faculty: Faculty of Engineering, LTH
Decided by: PLED N
Date of Decision: 2023-04-17

General Information

Main field: Technology.
Compulsory for: N1
Language of instruction: The course will be given in English

Aim

This course will offer an overview over research and applications of nanoscience and nanotechnology. Additionally, it gives an overview to the entire Engineering Nanoscience curriculum and will define and convey the "soul" of the program to the students.

Learning outcomes

Knowledge and understanding
For a passing grade the student must

- have a general knowledge in nanoscience and nanotechnology
- understand the interaction between different scientific fields, such as physics and medicine
- understand the principle of a project work
- understand the principle of a literature search
- understand the principle of ethical reflections.

Competences and skills
For a passing grade the student must

- be able to dicuss and explain technological, scientific and societal aspects of nanotechnology
- give a short oral presentation
- write a report to the project work
- present a poster
- be able to search relevant scientific information
- read relevant scientific literature.

Judgement and approach
For a passing grade the student must

- be able to actively argue on problems regarding nanoscience and nanotechnology.
- be able to grasp current problems and limitations within the research field of their project.
- be able to identify promising future directions within the research field of their project.

Contents

The method of instruction will be partly lectures and partly group exercises and projects. A major theme for this introductory course is to highlight inter-disciplinary and important research results in the field from the last 5-10 years. The course will focus on results that have meant important breakthroughs in the four fields that are represented by the four profile paths at the conclusion of the Engineering Nanoscience program, especially with regard to "life sciences" (biology and medicine). Different research areas within nanoscience will be presented in lectures as well as during visits to research environments. The students will be encouraged to actively discuss and reflect on the contents of the course.

Project:

Each student will choose a project area to focus their studies on and will, during several weeks, visit and interact with a research department corresponding to the selected project. This project, consisting of literature studies and gathering research information, may be performed as a group activity. The project will result in a written report that will be presented orally at a symposium, where the combined presentations will cover the entire field.

Examination details

Grading scale: UG - (U,G) - (Fail, Pass)
Assessment: Part 1: Compulsory presence at the course lectures, exercise sessions and laboratory visits. Written handouts and oral examination. Part 2: Compulsory project work with written and oral presentation.

The examiner, in consultation with Disability Support Services, may deviate from the regular form of examination in order to provide a permanently disabled student with a form of examination equivalent to that of a student without a disability.

Parts
Code: 0115. **Name:** Nanoscience and Nanotechnology - Oral Examination.
Credits: 3. **Grading scale:** UG. **Assessment:** Compulsory presence at the course lectures and exercise sessions. Compulsory laboratory visits with written report and oral examination.
Code: 0215. **Name:** Symposium on Nanoscience.

Credits: 4,5. **Grading scale:** UG. **Assessment:** Compulsory project work with written and oral presentation.

Admission

The number of participants is limited to: No
The course overlaps following course/s: FFF150, FFFA01

Reading list

- To be announced.

Contact and other information

Course coordinator: Christelle Prinz, christelle.prinz@ftf.lth.se
Course homepage:
http://www.ftf.lth.se/education/quick-links-to-course-pages/fffa02-nanoscience-and-nanotechnology-an-introduction/
Further information: Some parts of the course will be given in English, some in Swedish.