MH1015 Analysis and Design of Materials 8.0 credits

Profilering inom materialdesign

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

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

Establishment

Course syllabus for MH1015 valid from Spring 2009

Grading scale

A, B, C, D, E, FX, F

Education cycle

First cycle

Main field of study

Technology

Specific prerequisites

Courses equivalent to at least 45hp from year 1

Language of instruction

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

Intended learning outcomes

After completed course the students should be able to:

-Compare and describe the relationship between materials science concepts and phenomena treated in different courses;

-Analyze and characterize the structure of one or more of the man or nature developed materials;

-Propose other material applications on the basis of the obtained knowledge as a preparation for the Thesis in ÅK3;

-Present and assess the obtained material insight in a material science perspective through a mentor-supervised group work;

-Organize and document the group work by defining targets and objectives;

-Write a report in English with feedback from the mentor in the course of the work, and give an oral presentation on the Swedish.

Course contents

Part I. Introduction to materials design concept. The lectures will illustrate nature and man's way of building materials in different size levels, from nano scale to macro scale. Here there are also group tasks in connection with a series of lectures (PRO1). Corresponds to 1 ECTS-credits.

Part II. Coupling part, this aims to derive the relation between the concepts and phenomena in different courses. The coupling part is based on weekly assignments, which deal with the coupling between the simultaneous ongoing course **Fundamentals of Materials**, to other courses (PRO2). Represents 3 ECTS-credits.

Part III. Project part, in group form study two materials developed by man or nature (LAB1). Two seminars, in which the two project tasks, are presented written (PRO3) and oral (SEM1). Mentors and students meet approximately twice a week in the period 4. Project part corresponds to ECTS-credits.

Disposition

Lectures 28h
Experimental work 20h
Seminars 4 h
Mentor meetings 42 h

Course literature

Distributed materials

Examination

- PRO1 - Project, 1.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO2 - Project, 3.0 credits, grading scale: A, B, C, D, E, FX, F
- PRO3 - Project, 4.0 credits, grading scale: A, B, C, D, E, FX, F

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.

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.