



Course syllabus

Faculty Board of Science and Engineering
School of Computer Science, Physics and Mathematics

4FY825 Tillämpad akustik, 7,5 högskolepoäng
Engineering acoustics, 7.5 credits

Main field of study

Physics

Subject Group

Physics

Level of classification

Second Level

Progression

A1N

Date of Ratification

Approved by the Board of the School of Computer Science, Physics and Mathematics
2011-11-25

The course syllabus is valid from autumn semester 2012

Prerequisites

A bachelor degree in physics and/or mathematics and/or engineering with courses corresponding to 1FY804 Mechanics, 7.5 credits and 1MA165 multivariable analysis and vector analysis, 7.5 credits or equivalent.

Objectives

Upon completion of the course, the student shall have:

- fundamental knowledge in acoustics
- knowledge in using mathematics as a tool in problem solving and modelling in acoustics
- knowledge in applied acoustics with a direct application in the art of designing and constructing machines, vehicles, processes and environments that are quiet and have low vibration level.

Content

The course comprises:

- Fundamental acoustic concepts and measuring techniques, mathematical methods of acoustics, the wave equation and its solution in gases and fluids, the wave equation and its solution in solids, energy methods and room acoustics.

- In addition a survey of the following parts are included: The effect of sound and vibration on man and materials, the generation of sound, isolation of vibrations and, the propagation of sound in ducts.

Type of Instruction

Lectures and seminars. Group assignments and compulsory assignments may be given during the course.

Examination

The course is assessed with the grades Fail (U), Pass (G) or Pass with Distinction (VG).

The assesment is written and/or oral examination.

On request, students may have their credits translated to ECTS-marks. Such a request must be sent to the examiner before the grading process starts.

Course Evaluation

A course evaluation will be carried out at the end of the course in accordance with the guidelines of the University. The result of the course evaluation will be filed at the department.

Required Reading and Additional Study Material

book

H.P. Wallin, U. Carlsson, M. Åbom, H. Bodén and R. Glav. (translation by R Hildebrand) Sound and Vibration. Aeronautical and Vehicle Engineering. Marcus Wallenberg Laboratoriet, KTH, Stockholm, Sweden, 2011.