Wave Physics

Programme course

4 credits

Vågfysik - teori och tillämpning

TFEI02

Valid from: 2017 Spring semester

Determined by
Board of Studies for Electrical Engineering, Physics and Mathematics

Date determined
2017-01-25

Main field of study
Applied Physics, Physics

Course level
First cycle

Advancement level
G1X

Course offered for
- Engineering Electronics

Entry requirements
Note: Admission requirements for non-programme students usually also include admission requirements for the programme and threshold requirements for progression within the programme, or corresponding.

Prerequisites
Basic course in one variable calculus

Intended learning outcomes
The course gives fundamental knowledge in wave physics and its applications in natural phenomena and technology. After taking this course the student should

- know fundamental wave physics concepts and the wave equation
- know and perform simple calculations in fundamental acoustics and optics
- know about wave physics applications within natural phenomena as well as modern technology

Course content
Physical modelling and problem solving. Fundamental physical concepts and relations. Mechanical waves including acoustics, electromagnetic waves including optics. Wave physics applications/uses in biology, data transmission, electronics, chemistry, medicin, music, optics, radio, radar etc.

Teaching and working methods
Teaching is given as lectures and lessons

Examination

TEN1	Written exam	4 credits	U, 3, 4, 5

Grades

Four-grade scale, LiU, U, 3, 4, 5

Department

Institutionen för fysik, kemi och biologi

Director of Studies or equivalent

Magnus Boman

Examiner

Kenneth Järrendahl

Course website and other links

https://www.ifm.liu.se/edu/coursescms/TFEI02/

Education components

Preliminary scheduled hours: 32 h
Recommended self-study hours: 75 h

Course literature

Göran Jönsson och Elisabeth Nilsson, Våglära och optik, Teach Support 2007

Common rules

Regulations (apply to LiU in its entirety)

The university is a government agency whose operations are regulated by legislation and ordinances, which include the Higher Education Act and the Higher Education Ordinance. In addition to legislation and ordinances, operations are subject to several policy documents. The Linköping University rule book collects currently valid decisions of a regulatory nature taken by the university board, the vice-chancellor and faculty/department boards.

LiU's rule book for education at first-cycle and second-cycle levels is available at http://styrdokument.liu.se/Regelsamling/Innehall/Utbildning_pa_grund-_och_avancerad_niva.