

SYLLABUS

Advanced Continuum Mechanics 7.5 credits F7023T

Avancerad kontinuumsmekanik

Course syllabus admitted: Autumn 2014 Sp 1 - Autumn 2017 Sp 2

**DECISION DATE
2014-02-14**

Advanced Continuum Mechanics 7.5 credits F7023T

Avancerad kontinuumsmekanik

Second cycle, F7023T

Education level	Grade scale	Subject	Subject group (SCB)
Second cycle	G U 3 4 5	Teknisk mekanik	Engineering Physics

Entry requirements

Basic course in strength of materials and solid mechanics or in continuum mechanics.

Selection

The selection is based on 30-285 credits

Examiner

Mats Oldenburg

Course Aim

After completing the course students will have:

1. Knowledge and understanding

The purpose of the course is that the student should earn basic knowledge in continuum mechanics and its applications in solid mechanics and fluid mechanics.

2. Skills and abilities

The aim is to provide knowledge, concepts and mathematical formulations and tools needed to give the student the possibility to study and profit from scientific publications within the subject of mechanics.

3. Critical judgment and evaluation

The aim is for participants to gain an understanding of the constraints and opportunities that they have from the knowledge and skills they have acquired in their education.

Contents

- Introduction, Hooke's law and its consequences- Tensor analysis- Analysis of strain- Analysis of stress- Conservation laws- Elastic and plastic behaviour of materials- Applications in fluid mechanics

Realization

Each course occasion's language and form is stated and appear on the course page on Luleå University of Technology's website.

The theoretical part is dealt with in the lectures and the practical application through examples in the exercises.

Examination

If there is a decision on special educational support, in accordance with the Guideline Student's rights and obligations at Luleå University of Technology, an adapted or alternative form of examination can be provided. At the end of the course there is a written examination.

Overlap

The course F7023T is equal to M7031T

Literature. Valid from Autumn 2008 Sp 1

Y.C. Fung & Pin Tong, Classical and computational solid mechanics, World Scientific, 2001, ISBN 981-02-3912-2.

Course offered by

Department of Engineering Sciences and Mathematics

Items/credits

Number	Type	Credits	Grade
0001	Written exam	7.5	G U 3 4 5

Study guidance

Study guidance for the course is to be found in our learning platform Canvas before the course starts. Students applying for single subject courses get more information in the Welcome letter. You will find the learning platform via My LTU.

Last revised

by Mats Näsström 2014-02-14

Syllabus established

The syllabus was established by the Department of Applied Physics and Mechanical Engineering 2007-12-17, and remains valid from autumn 2008.