SYLLABUS

Material Testing I, Destructive Testing 3 credits B0002T

Materialprovning, förstörande

Course syllabus admitted: Autumn 2012 Sp 1 - Spring 2014 Sp 4

DECISION DATE
2012-04-03

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LULEÅ TEKNISKA UNIVERSITET

Material Testing I, Destructive Testing 3 credits B0002T

Materialprovning, förstörande

First cycle, B0002T

Education level	Grade scale	Subject	Subject group (SCB)
First cycle	G U 3 4 5	Materialteknik	Materials Technology

Entry requirements

In order to meet the general entry requirements for first cycle studies you must have successfully completed upper secondary education and documented skills in English language

Selection

The selection is based on final school grades or Swedish Scholastic Aptitude Test.

Examiner

Lennart Wallström

Course Aim

After completed course the student should be able to:

· Demonstrate theoretical knowledge of the build up of metallic-and rock-materials such as atom-, crystal- and grain-structure and independently be able to account for the influence of this structure on strength

· By studies and exercises with standardized test-equipment acquire knowledge of the differences in behaviour of several materials and in writing and orally be able to account for these differences.

· Produce gauged values from the different destructive methods for material testing and understand how these values might be used at strength-calculations

· Understand the most frequent Swedish and European Standards

· Perform tensile tests, pressure tests, hardness tests and impact tests in standardized test-equipment

Contents

The structure of material such as atom-, crystal-and grain-structure. The elastic and plastic properties of metals. The foundations of the mechanism of tough and brittle fracture, creep and fatigue. Material standards. Testing methods: tensile-, impact-, hardness-, fatigue-, creep-, pressure- and technological material testing.

Realization

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

Lectures, laboratory work and calculation 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.
Written examination and approved laboratory work.

Remarks

The course corresponds to MPB007. The number of examination opportunities is limited to five.

The course corresponds to MP1009.

Literature. Valid from Autumn 2012 Sp 1

Kompendier. Tillhandahålles av Bergsskolan i Filipstad. (125 s).

Ullman, Erik, Bengtson, Ulf. (2003) Materiallära, Karlebo-serien. 14 uppl. Stockholm : Liber. (530 s). ISBN 91-47-05178-7

Course offered by

Department of Engineering Sciences and Mathematics

Items/credits

No items/credits available

Syllabus established

by Dept TVM Mats Näsström 2012-04-03