

## t.MSL - Mechanik Schwingungslehre

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**Person responsible for the course:** Jürg Meier, mrjg

**Responsible OU:**

**ECTS:** 3

**Valid for:** 2012/2013

**Last saved:** 20.06.2013 15:30

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### **Expertise:**

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### **Methodological skills:**

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### **Social skills:**

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### **Personal skills:**

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### **Learning objectives:**

Modelling of mathematical solvable vibration systems

- Deriving solutions for simple problems and solve them numerically
  - Complex problems with multiple degrees of freedom: knowing common simulation tools, applying it for the analysis of these systems
  - Knowing the experimental methods for determine the parameters of vibration systems
  - Knowing the properties, advantages, and disadvantages of simulations
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### **Course content:**

Lecture:

- Linear oscillators with one degree of freedom: solution of the differential equation, parameters, swing off process, impulse response
- Linear oscillators with two or more degrees of freedom: Eigenvalues and Eigenforms, impulse response, simulation - Continual systems

Practice:

- Experiments with oscillating systems with one or more degrees of freedom
  - Modelling and simulation of structures by simulation tools (Matlab / Simulink and / or RecurDyn)
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### **Previous knowledge:**

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**Teaching method:**

Type of lesson:	Number of lessons per week:
Lecture	14x2L
Tutorial/Practicum	4x3.5L
Block instruction	

**Assessment:**

According to the table or as specified in writing by the lecture at the beginning of the semester!

description	type	form	scope	assessment	weighting
Performance records during school hours					
Semester end exam					

**Language of instruction:**

Deutsch

**Instruction material:**

Script of the lecturer

Further literature: Technische Mechanik 3 Gross, Dietmar; Hauger, Werner; Schröder, Jörg; Wall, Wolfgang Springer 9 2006

**Additional literature:**

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**Comments:**

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