

t.MKK1 - Mechanik Kinematik und Kinetik 1

Person responsible for the course:	Jürg Meier, mrjg
Credits:	3
Valid for:	2011/2012
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Learning objectives:

Formulation and solution of the motion equations of mass points and rigid bodies.

The students:

- know the basics of kinetics for planar and spatial motion of mass points and for planar motion of rigid bodies. They know where a reduction to a mass point is allowed and in which cases the problem needs to be extended to a rigid body model.
 - are able to solve simple problems autonomously with and without text books
 - are able to tackle and solve complex problems by common software tools
 - know that it is possible nowadays to analyze very complex problems by mechanics software tools and are able to become acquainted to work with it rapidly
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Course content:

Lecture:

- Kinematics of a mass point
- Kinetics of a mass point
- Friction
- Kinematics and kinetics of systems of mass points
- Simulation of dynamic systems (Simulink)
- Kinematics of rigid bodies
- Kinetics of rigid bodies in a plane motion

Practice:

- Kinematics of a mass point, applications
 - Kinetics of a mass point
 - Kinematics of rigid bodies, applications
 - Simulation of the motion of mass points and rigid bodies (by Matlab/Simulink or RecurDyn).
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Previous knowledge:

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Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14x3L
Tutorial/Practicum	
Group teaching	
Block instruction	
Seminar	

Assessment:

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

Number	Type	Weighting
1	End of term exam	60%
2	Exam during the semester	20% each
	Further assessments	

Language of instruction:

Deutsch

Instruction material:

- Technische Mechanik 3, Kinetik, D. Gross, W. Hauger, W. Schnell, J. Schröder
- Formeln und Aufgaben zur Technische Mechanik 3, D. Gross, W. Ehlers, P. Wriggers
or script of the lecturer.

Comments:

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