

## t.MME3 - Mechanik für Mechatronik 3

**Person responsible for the course:** Michael Warden, wami

**Credits:** 4

**Valid for:** 2011/2012

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### Learning objectives:

#### Theory of Elasticity:

The students are familiar with the deformation properties of elastic bodies. They can estimate the load capacity of construction elements subjected to bending and torsional loads.

The students can also calculate critical buckling loads in beams subjected to axial loads.

#### Dynamics:

The students understand the kinematic description of motions, including, position, velocity and acceleration.

They know Newton's laws and can apply them to technical examples by using appropriate approximations.

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### Course content:

#### Lecture Theory of Elasticity:

- Strain
- Bending of Bars
- Torsion
- Buckling

#### Lecture Dynamics:

- Motion of Particles
- Motion of Rigid Bodies

#### Problem solving:

Problems are handed out which have to be solved as home work. These are discussed during the lectures.

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### Previous knowledge:

Courses MEST1 and MEST2

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### Teaching method:

Type of lesson:	Number of lessons per week:
Lecture	14x4
Tutorial/Practicum	
Group teaching	
Block instruction	
Seminar	

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**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	0.8
1	Exam during the semester	0.2
	Further assessments	

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**Language of instruction:**

German

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**Instruction material:**

Technische Mechanik 2: Band 2: Elastostatik von Gross, Hauger, Schröder und Wall: ISBN 978-3-642-00564-0

Technische Mechanik 3: Band 3: Kinetik von Gross, Hauger, Schröder und Wall: ISBN 978-3-540-6822-0

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**Comments:**

None