

t.FMA - Funktionsmaterialien

Person responsible for the course: Dirk Penner, penr

Credits: 3

Valid for: 2010/2011

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Learning objectives:

- Knowledge of materials properties that important to industrial applications not related to mechanical but physical properties
- Knowledge of necessary physics

Material production, applications and processing will be demonstrated by actual processes and scientific trends.

Course content:

Electric classification of materials

Metallic conducting materials: usable physical effects; conductor properties; processing; applications

Resistors: Physics; materials; processing; applications

Semiconductors: Physics; materials; processing; applications; semiconductor industries

Ionic conductors, mixed conductors: solid state defect chemistry; materials; applications

Superconductors: Physics; materials; processing; applications

Insulators: Physics; materials; processing; applications

Piezoelectrics: physics; properties; processing; applications

Magnetic materials: physics; magnetic phenomena

Optic materials and interaction with light: physics; materials; processing; applications and devices

Optoelectronics

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	
	wöchentliche Übungsaufgaben	
	Further assessments	

Language of instruction:

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Instruction material:

Vorlesungsskript der Dozierenden mit Verweise auf Lehrbücher-Kapitel

Comments:

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