Course Signal Theory and Applied Mathematics

Responsible: Pro . Dr. Dietmar Kunz

Course

Meets requirements of following modules(MID)

- in active programs
  - Ba MT2012 SIGA

Course Organization

Version	
created	2011-11-09
VID	1
valid rom	WS 2012/13
valid to	

Course identifiers	
Long name	Signal Theory and Applied Mathematics
CID	F07_SIGA
CEID (exam identi ier)	

Contact hours per week (SWS)	
Lecture	4
Exercise (unsplit)	
Exercise (split)	2
Lab	
Project	
Seminar	
Tutorial(voluntary)	

Total contact hours	
Lecture	60
Exercise (unsplit)	
Exercise (split)	30
Lab	
Project	
Seminar	
Tutorial (voluntary)	

Max. capacity	
Exercise (unsplit)	
Exercise (split)	40
Lab	
Project	
Seminar	

Total effort (hours): 210

Instruction language

- German

Study Level

- undergraduate

Prerequisites

- tangible school knowledge
- Mathematics 1
- Mathematics 2

Textbooks, Recommended Reading

- Thomas Frey, Martin Bossert: Signal- und Systemtheorie
- Martin Meyer: Signalverarbeitung
- Jens-Rainer Ohm, Hans Dieter Lüke: Signalübertragung

- Lothar Papula: Mathematik ür Naturwissenscha tler und Ingenieure

Instructors

- Pro . Dr. Dietmar Kunz

Supporting Scientific Staff

- tba

Transcipt Entry

Signal Theory and Applied Mathematics

Assessment

Type	
wE	

Total effort [hours]	
wE	

Frequency: 2/Jahr

Course components

Lecture/Exercise

Objectives

Contents

- description o signals and LTI-systems using the Fourier-trans orm
  - analog non-periodic signals and systems
  - analog periodic signals and systems
  - discrete non-periodic signals and systems
  - discrete periodic signals and systems
- description o discrete signals and systems using the z-trans orm
- ranom variables and their characterization
- random signals and noise

Acquired Skills

- calculation o the convolution
- calculation o the Fourier-trans orm
- calculation o the z-trans orm o discrete systems

Operational Competences

- characterization o real-world temporal and spatial LTI-systems
- characterization o real-world random quantities and signals

Additional Component Assessment

Type	
PS	excercise (on course and sel study)

Contribution to course grade	
PS	not rated, prerequisite to course exam

Frequency: 1/Jahr