Technology
Arts Sciences
TH Köln

Course Manual SIGA

Signal Theory and Applied Mathematics

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General information

Long name	Signal Theory and Applied Mathematics
Approving CModule	SIGA_BaMT
Responsible	Prof. Dr. Dietmar Kunz Professor Fakultät IME im Ruhestand
Valid from	winter semester 2021/22
Level	Bachelor
Semester in the year	winter semester
Duration	Semester
Hours in self-study	102
ECTS	7
Professors	Prof. Dr. Dietmar Kunz Professor Fakultät IME im Ruhestand
Requirements	tangible school knowledge Mathematics 1 Mathematics 2
Language	German
Separate final exam	Yes

Literature

- Thomas Frey, Martin Bossert: Signal- und Systemtheorie
- Martin Meyer: Signalverarbeitung
- Jens-Rainer Ohm, Hans Dieter Lüke: Signalübertragung
- Lothar Papula: Mathematik für Naturwissenschaftler und Ingenieure

Final exam

Details	In the written exam problems are given with respect to the subjects of th lecture. The problems are intended to be real-world as much as possible. Thus the student should show that he or she is able to transfer the real-word problem into the mathematical framework.
Minimum standard	All important steps are result in points. For passing the exam, 50% of the maximum number of points is sufficient.

Exam Type	EN Klausur

− Lecture / Exercises

Learning goals

Goal type	Description
Knowledge	description of signals and LTI-systems using the Fourier-transform analog non-periodic signals and systems analog periodic signals and systems discrete non-periodic signals and systems discrete periodic signals and systems description of discrete signals and systems using the z-transform
Knowledge	ranom variables and their characterization fundamentals of mathematical statistcs estimators tests random signals and noise

Special requirements

none

Accompanying material	electronic presentation sheets, electronic sample exams
Separate exam	No

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	4
Tutorial (voluntary)	0

− Lecture / Exercises

Learning goals

Goal type	Description
Skills	Solve exercises to the subjects at hand.

Expenditure classroom teaching

Type	Attendance (h/Wk.)
Exercises (whole course)	2
Exercises (shared course)	0
Tutorial (voluntary)	2

Special requirements

none

Accompanying material	electronic collection of exercises problems solutions
Separate exam	Yes

Separate exam

Exam Type	EN Übungsaufgabe mit fachlich / methodisch eingeschränktem Fokus lösen
Details	Active participation in exercise lessons, adequate processing of given exercise problems.
Minimum standard	Active participation in 80 % of the exercise lessons.