

Course Manual KOAK

Communication Acoustics

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– General information

Long name Communication Acoustics

Approving CModule [KOAK BaET](#),
[KOAK BaTIN](#)

Responsible Prof. Dr.-Ing. Christoph Pörschmann
Professor Fakultät IME

Valid from summer semester 2023

Level Bachelor

Semester in the year summer semester

Duration Semester

Hours in self-study 78

ECTS 5

Professors Prof. Dr.-Ing. Christoph Pörschmann
Professor Fakultät IME

Requirements Basic knowledge mechanics
knowledge time domain / frequency domain operations
Calculations with real and imaginary values
Basic knowledge integral and differential mathematics
Basic knowledge Acoustics

Language German

Separate final exam Yes

Literature

Blauert, J.,(2005) „Communication Acoustics,“ Springer Verlag Heidelberg

Weinzierl, Stefan (2008). „Handbuch der Audiotechnik,“ Springer Verlag, Berlin.

Blauert, J.,(2021) „Acoustics for Communication,“ Springer Verlag Heidelberg, upcoming

Veit,I. (2005). „Technische Akustik“, Kamprath-Reihe, Vogel-Verlag, Würzburg.

Cremer. L. (1976). „Vorlesungen über Technische Akustik,“ Springer Verlag, Berlin, Heidelberg.

Kuttruff, H. (2004). „Akustik – Eine Einführung,“ S. Hirzel Verlag, Stuttgart.

Final exam

Details

Oral examination -
graded

The students explain the application-related problems using simple examples, they explain and describe how they relate them to practical applications and which conditions must be observed. The students prove that they can relate these concepts independently to real value problems.

Minimum standard

The students need to illustrate simple relationships. The description is supported by the examiner.

Exam Type

EN mündliche Prüfung,
strukturierte Befragung

– Lecture / Exercises

Learning goals

Goal type	Description
Knowledge	Room simulation method and software tools required therefor
Knowledge	Human hearing system, basic phenomena of auditory perception, psychoacoustic parameters
Knowledge	Human spatial perception
Knowledge	Principles of human speech generation, common methods of speech signal processing
Skills	Analyze and solve problems of sound insulation and noise.
Skills	relate psychoacoustic quantities to physical quantities
Skills	Analysis and adaptation of spatial sound reinforcement systems

Special requirements

none

Accompanying material	Script (electronic or printed)
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Separate exam	No
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Expenditure classroom teaching

Type	Attendance (h/Wk.)
Lecture	2
Exercises (whole course)	1
Exercises (shared course)	0
Tutorial (voluntary)	0

– Practical training

Learning goals

Goal type	Description
Knowledge	Reverberation Time Measurement
Knowledge	Room simulation
Knowledge	Audiometry (Threshold of silence)
Skills	perform practical measurements based on described tasks
Skills	create functional measurement setups
Skills	prepare adequate documentation for measurements carried out
Skills	Evaluate and discuss measurement results

Special requirements

none

Accompanying material	Script (electronic or printed)
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Separate exam	No
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Expenditure classroom teaching

Type	Attendance (h/Wk.)
Practical training	1
Tutorial (voluntary)	0