

Tárgytematika / Course Description

Technical acoustics

NGB_TA120_1

Tárgyfelelős neve /

Teacher's name: dr. Wersényi György

Félév / Semester: 2016/17/1

Beszámolási forma /

Assesment: Vizsga

Tárgy heti óraszám /

Teaching hours(week): 3/0/1

Tárgy féléves óraszám /

Teaching hours(sem.): 0/0/0

OKTATÁS CÉLJA / AIM OF THE COURSE

Basic overview of technical acoustics to assist electrical engineer students mostly on the field of telecommunications. Students of electrical engineering at least with 3 semesters completed can apply.

TANTÁRGY TARTALMA / DESCRIPTION

Weekly:

1. Basics of electroacoustics;
2. Physical basics of acoustics, Sound and vibration, Harmonic waves and propagation,
3. Measurement signals and evaluation, Linear and non-linear transmission,
4. Transformations and windowing, Filters,
5. Properties of the hearing system, The hearing system, Masking effects, thresholds
6. Psychoacoustic measures and phenomena, Directional hearing,
7. Speech,
8. Electroacoustic transmission
Transducers and impedances,
9. Basics of microphones, loudspeakers, amplifiers,
10. Transfer functions, directional characteristics, measurements,
11. Room acoustics and measurements,
12. Reflections and the reverberation time (RT)
13. Measurement and calculations of the RT,
14. Measurement of acoustic parameters

SZÁMONKÉRÉSI ÉS ÉRTÉKELÉSI RENDSZERE / ASSESSMENT'S METHOD

Exam

Requirements for getting the signature for the semester:

- participating in 80% of the classes,
- preparing the given homeworks.

Requirements for getting a mark for the subject:

- oral exams
 - preparing the project work given by the lecturer
 - final presentation
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KÖTELEZŐ IRODALOM / OBLIGATORY MATERIAL

Compulsory Literature:

Everest, F. Alton: The Master Handbook of Acoustics (4th Ed.)

Referenced Literature:

Blauert, Jens: Acoustic Communication
Vorländer, Michael: Auralization
Brüel & Kjaer documentation and figures