

## Tárgytematika / Course Description

### Technical acoustics

NGB\_TA120\_1

**Tárgyfelelős neve /**

**Teacher's name:** dr. Wersényi György

**Félév / Semester:** 2015/16/2

**Beszámolási forma /**

**Assesment:** Vizsga

**Tárgy heti óraszám /**

**Teaching hours(week):** 3/0/1

**Tárgy féléves óraszám /**

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

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### 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.

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### 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

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### 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

50-60% sufficient

61-70% average

71-84 % good

85% felett excellent

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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