

## **Engineering Acoustics - Sound Fields (6 ETCS)**

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**Responsible Staff Member:** Prof. Dr.-Ing. Sarradj, Ennes

**Location of courses:** Faculty 3 - Mechanical Engineering, Electrical Engineering and

Industrial Engineering

**Language:** English

### **Learning Outcome:**

Participants will gain an insight into the theoretical treatment of the propagation of sound and acquire an in-depth knowledge of noise control of vehicles, aircraft and machinery using sound insulation, attenuation, and damping.

### **Contents:**

Lecture: Basics of acoustics and the human perception of sound, the acoustic wave equation and its solutions, reflection and refraction of sound waves, absorption of sound in porous media, sound fields in cavities and flow ducts, silencers, structure-borne sound, sound transmission and insulation in structures, sound enclosures, trim.

### **Exercise:**

Lecture based computing tasks, application-oriented tasks in the areas of automotive and engine technology

### **Forms of Teaching and Proportion:**

Lecture - 2 hours per week per semester

Exercise - 2 hours per week per semester

**Assessment Mode:**

Oral or written examination

Withdrawal from Examination until the end of the seventh week of the lecture period