LEARNING MODULE DESCRIPTION

GENERAL INFORMATION

1. Module title: Room Acoustics
2. USOS code: 04-S1AKph03-P05700
3. Term: winter
4. Duration: 15h + 15h lab
5. ECTS: 2
6. Module lecturer: Assoc. Prof. Dr. (hab.) Jędrzej Kociński
7. E-mail: jedrzej.kocinski@amu.edu.pl
8. Language: English

DETAILED INFORMATION

1. Module aim (aims)
   The module is designed to provide students with a deep understanding of the mechanisms shaping the acoustic field within indoor spaces. The specific objectives include:

   C1: Understanding the principles governing the formation of the acoustic field in enclosed spaces.
   C2: Familiarization with theoretical analyses describing acoustic phenomena occurring in rooms.
   C3: Learning about acoustic parameters used to characterize the acoustic properties of spaces.
   C4: Acquiring knowledge of methods for measuring acoustic parameters.
   C5: Understanding basic requirements and principles of interior acoustic design and the necessity of creating acoustical projects tailored to the room's intended purpose.
   By completing this module, students will gain both theoretical and practical skills, equipping them to analyze, measure, and design acoustically optimized spaces.

2. Pre-requisites in terms of knowledge, skills and social competences (where relevant)

Higher Mathematics Fundamentals: Proficiency in integral calculus and basic statistics.
Elementary Acoustics: Understanding of key concepts such as the wave equation, Snell's law, resonance, and vibration modes.
These foundational skills are essential for comprehending the theoretical and practical aspects of the module.

READING LIST

Kuttruff, H. (2016). *Room acoustics* (6th ed.). CRC Press. https://doi.org/10.1201/b18869
Long, M. (2014). Architectural acoustics (2nd ed.). Academic Press.
Everest, F. A. (2001). *The master handbook of acoustics* (4th ed.). McGraw-Hill.

SYLLABUS:

Week 1:	The Place of Interior Acoustics in Science, History, Culture, and Society
Week 2:	Geometrical Theory in Room Acoustics- theory
Week 3:	Geometrical Theory in Room Acoustics- practical clues part 1
Week 4:	Geometrical Theory in Room Acoustics- practical clues- part 2
Week 5:	Statistical Theory in Room Acoustics
Week 6:	Wave Theory in Room Acoustics
Week 7:	Objective and Subjective Acoustic Parameters in Enclosures- part 1
Week 8:	Objective and Subjective Acoustic Parameters in Enclosures- part 2