Syllabus

Kursbeschreibung

Titel der Lehrveranstaltung	Technische Akustik
Code der Lehrveranstaltung	43096
Zusätzlicher Titel der Lehrveranstaltung	
Wissenschaftlich-disziplinärer Bereich	IIND-07/B
Sprache	Italienisch
Studiengang	Bachelor in Industrie- und Maschineningenieurwesen
Andere Studiengänge (gem. Lehrveranstaltung)	
Dozenten/Dozentinnen	dr. Federica Morandi, Federica.Morandi@unibz.it https://www.unibz.it/en/faculties/engineering/academic-staff/person/41968
Wissensch. Mitarbeiter/Mitarbeiterin	
Semester	Summer school
Studienjahr/e	1, 2, 3
KP	3
Vorlesungsstunden	18
Laboratoriumsstunden	12
Stunden für individuelles Studium	42
Vorgesehene Sprechzeiten	
Inhaltsangabe	The course provides an overview of the three main areas of applied acoustics. Starting from notions related to wave propagation, the human auditory system, and sound perception, the course will address the topics of acoustics of confined spaces (absorption and diffusion, reverberation, intelligibility) sound insulation (airborne and structure-borne sound insulation, flanking transmission), and outdoor propagation (with a specific focus on

	vehicle acoustics).
Themen der Lehrveranstaltung	- Sound propagation in air and solids - Human auditory system - Measurement and analysis of audio signals - Sound pressure levels - Outdoor sound propagation & acoustics of vehicles - Theory of reverberation, absorption, and diffusion - Airborne insulation, structureborne sound insulation and flanking transmission.
Stichwörter	applied acoustics; physical acoustics; signal processing; sound insulation; reverberation and intelligibility; vehicle acoustics
Empfohlene Voraussetzungen	
Propädeutische Lehrveranstaltungen	
Unterrichtsform	Frontal lecture, excercises, experimental activities.
Anwesenheitspflicht	Recommended
Spezifische Bildungsziele und erwartete Lernergebnisse	Knowledge and understanding: 1. Knowledge of the calculation methods described in current technical standards for assessing the acoustic performance of buildings 2. Knowledge of current legislation on acoustic protection in buildings Ability to apply knowledge and understanding: 3. Ability to implement the procedures described in technical standards 4. Ability to develop design and diagnostic skills related to the acoustic protection of buildings 5. Ability to improve these skills in a real case study Independent judgement: 6. Students will be able to evaluate the acoustic performance of existing and new buildings, identify critical issues and suggest solutions Communication skills: 7. Students will be able to discuss the knowledge they have acquired using the vocabulary and technical terms related to the topic covered. Learning skills

	8. Ability to engage in lifelong learning through the acquisition of critical tools and critical evaluation of project specifications.
Spezifisches Bildungsziel und erwartete Lernergebnisse (zusätzliche Informationen)	
Art der Prüfung	Summative assessment Form 100% oral exam Length /duration 30 minutes ILOs assessed: 1, 2, 3, 4, 5, 6, 7, 8
Bewertungskriterien	A single final mark will take into account knowledge of the course content (max 15 points), the ability to apply the subject matter learned (max 5 points), the ability to summarise information (max 5 points), the accuracy of technical terms and clarity (max 5 points).
Pflichtliteratur	Teaching materials provided by the lecturer. Subject Librarian: David Gebhardi, David.Gebhardi@unibz.it and Ilaria Miceli, Ilaria.Miceli@unibz.it
Weiterführende Literatur	R. Spagnolo. *Manuale di acustica applicata* (Handbook of Applied Acoustics). Città Studi Edizioni, Turin, 2008. ISBN:9788825173208. H. Kuttruff. *Room acoustics*. Spoon Press, Abingdon (UK), 2007. ISBN10: 0-415-48021-3. C. Hopkins. Sound insulation. Butterworth-Heinemann, Burlington, MA (USA), 2007. ISBN: 978-0-7506-6526-1
Weitere Informationen	
Ziele für nachhaltige Entwicklung (SDGs)	Industrie, Innovation und Infrastruktur, Gesundheit und Wohlergehen