Course Syllabus

Code - Course Title	**FİZ127 - Basic Physics and Physics of Sound**
Course Type	I. SEMESTER
Laboratory + Practice	2+1
ECTS	**3.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	PROF. DR. ELÇİN TADIHAN ÖZKAN

Mode of Delivery	Face to face lectures, Demonstration, Problem Solving.
Place of Delivery	On Campus
Used Educational Platforms	Face-to-face
Prerequisites	No prerequisite
Courses Recomended	NO
Recommended Resources	Genel Fizik – 1 Doç. Dr. Mehmet Fatih Taşar (Editör), Prof. Dr. Metin Orbay (Editör) Eylül 2011The Physics of Sound, R. E. Berg, D. G. Stork, Pearson Prentice Hall, 2005Science of Sound, T. D. Rossing, R. F. Moore, P. A. Wheeler, Addison Wesley, 2001The Science and Applications of Accoustics, D. R. Raichel, Springer, 2000Musical Sound: An Introduction to the Physics of Music, Springer, 1987
Work Placement	No
Aims of the Course	The objective is to provide students with fundamental knowledge of physics and waves, and to enable them to relate the physical properties of sound, its propagation, and its interaction with matter to the processes of sound production and hearing.

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1	**LO-1**	Basic Physics and Methods: Measurement and unit systems, physical, scalar, vector quantities.	Lecture
Week - 2	**LO-1**	Motion and Causes: Displacement, velocity, acceleration, Newton's Laws.	Lecture
Week - 3	**LO-1**	Simple harmonic, pendulum.	Lecture
Week - 4	**LO-1**	Types of Waves: Mechanical, electromagnetic, earthquake.	Lecture
Week - 5	**LO-2**	Transverse and Longitudinal Waves: Coil spring, wire, rope, rubber, sources.	Lecture
Week - 6	**LO-3**	Sources of waves: Characteristics of Sound	Lecture
Week - 7	**LO-2** **LO-3**	Characteristics of Sound: wavelength, amplitude, frequency, velocity	Lecture
Week - 8	**LO-1** **LO-2** **LO-3**	Review of the subject matter	review of the topic
Week - 9	**LO-3**	Sound as an energy: low, high frequency, structural aspects, tone, acoustics.	Lecture

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 10	LO-3	Sound Interaction with Matter: Diffusion, reflection, resonance, recording	Lecture
Week - 11	LO-3	Sound Interference and Diffraction: Doppler	Lecture
Week - 12	LO-3	Sound and Light: Waves, diffusion, solar, lunar eclipse	Lecture
Week - 13	LO-3	Sound insulation	Lecture
Week - 14	LO-3	Sound and Hearing.	Lecture

Learning Outcomes

#	Learning Outcome
1	Explains the concepts related to Fundamental Movement
2	Explains Types of Waves
3	Analyzes the characteristics of sound.

Sustainable Development Goals

✓ Quality Education

Course Theme

✓ Health Sciences and Medical Technologies

AKTS Workload

Activity	Duration (Hour)	Count	Workload
Teorik Derse Katılım	2.00	14	28
Sınıf Dışı Çalışma (Ön Hazırlık & Pekiştirme Amaçlı)	1.00	14	14
Ödevler	0.00	0	0
Proje - Rapor - Sunum Hazırlama	0.00	0	0
Ara Sınav Hazırlığı (sınav süresi dahil)	7.00	1	7
Final Sınavı Hazırlığı (sınav süresi dahil)	7.00	1	7
Uygulama (Laboratuvar, Müzik/Enstrüman Uygulaması, Atölye/Saha Çalışması vb.)	1.00	14	14
Staj Uygulaması	0.00	0	0
		Calculated ECTS	**3.0**

Assessment Method and Passing Requirements

✓ Multiple Choice Test

Community Service Activity

This course does not include any Community Service activities.