Course Syllabus

Code - Course Title	**OGP226 - Audio and Music Technologies in Games**
Course Type	IV. SEMESTER
Laboratory + Practice	1+2
ECTS	**3.0**
Language of Instruction	Türkçe
Course Type	Area Elective Courses
Course Instructor(s)	ÖĞR. GÖR. GÜVENÇ USANMAZ

Mode of Delivery	This course is delivered through face-to-face instruction. Theoretical lectures and laboratory sessions are integrated throughout the semester. The default tools for practical work are Audacity and the game engine audio system; the instructor may prefer equivalent tools (e.g., Reaper, FMOD, Wwise).
Prerequisites	There are no prerequisites or co-requisites for this course.
Courses Recomended	It is recommended to have completed OGP104 Programming II and OGP108 2D Game Development Studio before taking this course. Having completed XXX7953 Game Psychology and Player Experience may help understand the role of sound in player experience.
Recommended Resources	Audacity. Official user guide: https://www.audacityteam.org/help/Unity. Audio documentation: https://docs.unity3d.com/Manual/Audio.html
Work Placement	This course has no internship or placement requirement.

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Introduction to audio design; importance of sound in games, psychological effects, auditory perception.	
Week - 2		Audio physics: waveform, frequency, amplitude; human hearing range.	
Week - 3		Digitization: sample rate, bit depth; WAV, OGG, MP3 formats.	
Week - 4		Digital audio workstation (DAW): interface, channel management, basic editing.	
Week - 5		Effect plugins: EQ, compression, noise reduction basics.	
Week - 6		Sound effect design: recording techniques, synthesis intro, layering.	
Week - 7		Foley and game SFX workflow; UI, environmental and character sounds.	
Week - 8		Interactive music: dynamic music systems, state-based transitions, horizontal/vertical resequencing.	
Week - 9		Game engine audio systems: AudioSource, AudioListener, mix bus.	
Week - 10		3D audio positioning: spatial audio, pan, distance attenuation.	
Week - 11		Reverb and environmental effects: reverb, room reflections, occlusion concepts.	

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 12		Audio middleware overview: event-driven sound with FMOD/Wwise.	
Week - 13		Audio optimization: compression formats, memory management, streaming.	
Week - 14		End-of-term audio design package presentation; mix, licensing and integration documentation.	

Learning Outcomes

#	Learning Outcome
1	Explains the role of audio design in games and the impact of sound on player experience.
2	Interprets audio physics and digitization concepts (frequency, amplitude, sample rate).
3	Applies recording, editing and basic mixing using a DAW.
4	Designs game sound effects using layering and synthesis methods.
5	Designs an interactive music system with state-based transitions.
6	Applies 3D audio positioning with audio source and listener configuration in a game engine.
7	Applies reverb, distance attenuation and occlusion concepts in a game scene.
8	Presents a game audio design package with compression and memory optimization.

Sustainable Development Goals

No content has been provided.

Course Theme

No content has been provided.

AKTS Workload

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

Assessment Method and Passing Requirements

No content has been provided.