Course Syllabus

Code - Course Title	**OGP223 - 3D Design**
Course Type	III. SEMESTER
Laboratory + Practice	2+1
ECTS	**3.0**
Language of Instruction	Türkçe
Course Type	Area Elective Courses
Course Instructor(s)	ONUR UYANIK

Mode of Delivery	This course is delivered through face-to-face instruction. Theoretical lectures and laboratory sessions are integrated throughout the semester. The default tool for practical work is Blender; the instructor may prefer an equivalent 3D modeling tool (e.g., Maya, 3ds Max).
Prerequisites	There are no prerequisites or co-requisites for this course.
Courses Recomended	It is recommended to have completed XXX7968 Fundamentals of Digital Art and Design and OGP106 Computer Graphics before taking this course. Taking OGP205 3D Game Development Studio concurrently may help integrate produced models into a game project.
Recommended Resources	Blender. Official Manual: https://docs.blender.org/manual/en/latest/Polycount Wiki: https://wiki.polycount.com/
Work Placement	This course has no internship or placement requirement.

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Introduction to 3D modeling; coordinate systems, interface, basic transforms; spatial thinking.	
Week - 2		Polygonal modeling basics: extrude, inset, loop cut; simple prop modeling.	
Week - 3		Surface, vertex and edge editing; symmetry and reference image usage.	
Week - 4		Topology principles: edge flow, quad-based modeling; game rigging compatibility.	
Week - 5		Polygon count optimization; LOD concept; model budget for game performance.	
Week - 6		Introduction to sculpting: digital clay, brush dynamics; organic form study.	
Week - 7		High-detail to low-poly workflow; retopology basics.	
Week - 8		UV unwrapping: seams, packing, texel density.	
Week - 9		Texture painting and PBR materials: base color, roughness, normal map preparation.	
Week - 10		Lighting and rendering: three-point lighting, camera settings; game vs render lighting.	
Week - 11		Character modeling: bipedal anatomy proportions; skeleton-compatible mesh topology.	

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 12		Environment modeling: modular structure kits, organic objects, reusable parts.	
Week - 13		Export to game engine: FBX/glTF, scale, pivot, naming conventions.	
Week - 14		End-of-term game-ready asset presentation; portfolio and process documentation.	

Learning Outcomes

#	Learning Outcome
1	Explains core 3D modeling concepts and spatial thinking skills.
2	Creates props and simple environment pieces for game projects using polygonal modeling techniques.
3	Designs rigging-friendly mesh topology following topology principles and optimizes polygon budget.
4	Produces organic forms using sculpting and retopology workflows.
5	Applies UV unwrapping and texture packing for game assets.
6	Textures model surfaces by preparing physically based (PBR) materials.
7	Creates game art presentation visuals with lighting and render settings.
8	Exports models in game engine formats and delivers a portfolio presentation.

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.