Course Syllabus

Code - Course Title	**ANİ234 - 3D Light and Color**
Course Type	IV. SEMESTER
Laboratory + Practice	4+3
ECTS	**7.0**
Language of Instruction	Türkçe
Course Type	Required Courses
Course Instructor(s)	DR. ÖĞR. ÜYESİ EMİN BAKAN

Mode of Delivery	The mode of delivery of this course is Face to face
Prerequisites	There is no prerequisite or co-requisite for this course.
Courses Recomended	There is no recommended optional programme component for this course.
Work Placement	N/A

Course Syllabus

Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 1		Week 1: Introduction to Fundamental Concepts Topic: Concepts of light, color, and rendering in 3D. Overview of the Maya interface and basic use of the Arnold render engine. Application: Create a simple geometric object (cube, sphere) and render it with basic lighting in Arnold.	
Week - 2		Week 2: Fundamentals of Textures and Shaders Topic: What is a texture? Different types of textures (color, normal, roughness, etc.). Basic parameters of Arnold shaders (AiStandardSurface). Application: Apply a ready-made texture file (e.g., a brick wall) to a given object and examine the effects of different shader parameters.	
Week - 3		Week 3: Fundamentals of UV Mapping Topic: The importance of UV mapping. Introduction to the Maya UV Editor, automatic UVs, and planar, cylindrical, and spherical projections. Application: Students prepare a simple object of their choice (e.g., a glass or bottle) for texturing using UV mapping techniques.	
Week - 4		Week 4: Advanced UV and Introduction to Retopology Topic: Tools for cutting, sewing, and arranging UVs. Organizing UV shells. Application: Properly unwrap and arrange the UVs of a more complex object (e.g., a toy car) to apply a texture.	
Week - 5		Week 5: Understanding Surface Textures of Objects Topic: Examining the properties of different surface types (metal, glass, wood, plastic) in Arnold. Roughness, specularity, and transmissive properties. Application: Create different material shaders (plastic, metal, glass) for a given model, render them, and observe the differences.	

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Weeks	Learning Outcomes	Topics	Teaching Methods
Week - 6		Week 6: Reflection & Refraction Topic: The logic of PBR (Physically Based Rendering). Principles of how surfaces reflect and refract light. Reflection and refraction settings in Arnold. Application: Render a water drop or crystal object model by adjusting its reflection and refraction properties.	
Week - 7		Week 7: Midterm Assignment Topic: The midterm assignment will be explained. This will be an object modeling assignment that requires students to combine all the topics they have learned so far. Application: Work on a sample object model (e.g., a coffee maker) together to make final preparations before the midterm.	
Week - 8		Week 8: Project Fundamentals and Concept Development Topic: The post-midterm project assignment will be explained. Creating a concept or story for the project. Application: Students will determine their project topics and begin working on story outlines or concept visuals.	
Week - 9		Week 9: Character, Vehicle, and Environment Lighting Topic: Three-point lighting technique. Use of key light, fill light, and rim light. Application: Experiment with different lighting scenarios by applying three-point lighting to a simple character model.	
Week - 10		Week 10: Advanced Lighting Techniques Topic: Types of lights (Point, Spot, Area, Directional). Use of HDRI (High Dynamic Range Image) and the importance of Environment lights. Application: Create realistic lighting for project models using HDRI.	
Week - 11		Week 11: Conveying Emotion with Light and Color Topic: How light and color affect the atmosphere and emotion of a scene. Warm/cool color palettes. Application: Use the project models to create an emotional impact with different color and light settings (e.g., day vs. night).	
Week - 12		Week 12: Render Settings and Optimization Topic: Sampling and Ray Depth settings in Arnold. Methods to optimize render time. Application: Students optimize the render settings for their own projects and take quick preview renders.	
Week - 13		Week 13: Render Layers (AOV) Topic: What are AOV (Arbitrary Output Variables) and why are they used? Exporting render layers and preparing for post-production (in After Effects or Photoshop). Application: Create separate layers for project renders using AOVs.	
Week - 14		Week 14: Project Presentation and Final Preparation Topic: Students finalize their projects and prepare for the presentation. Feedback and final touches. Application: Take the final renders of the projects and get them ready for class.	

Learning Outcomes

#	Learning Outcome
1	will be able to define material techniques.
2	will be able to define 3D texture mapping techniques.

Learning Outcomes

#	Learning Outcome
3	will be able to define lighting techniques.
4	will be able to present modelled character at the computer environment.

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.