



DEPAUL UNIVERSITY

COLLEGE OF COMPUTING AND DIGITAL MEDIA

School of Cinematic Arts

**ANI
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ANI
439**

3D Texturing and Lighting

Fall 2022 | MW 03:10PM-4:40PM @ CDM 722

Instructor: Riyadh Hasan

Email: riyad.hasan@depaul.edu (best way to reach me)

Phone: (312)362-0037

Office: Meeting on Zoom

Office Hours: TU 2:00-5:00 pm, By Appointment only: <https://calendly.com/riyadhasan>

Office Hours Zoom:

<https://depaul.zoom.us/j/93459792498?pwd=ZU04NzF1V2NNalc3dVgrekl5V1FxUT09>

Password: 610181

Course Description

Students will study the processes and techniques for texturing and lighting in 3D. Procedures including preparing models for texturing, creating and manipulating shading networks, laying out UV's, and painting textures will be explored. Topics in lighting will be approached from the foundation of traditional cinematography with a focus on driving both mood and story. Students will utilize complementary skills in lighting and texturing to create high-quality renders for both still and moving images. PREREQUISITE(S): ANI 230

Course Objectives

After completing this course, students will be able to:

- Achieved a working understanding of tools related to 3D lighting and texturing
- Become comfortable with the basics of planned lighting workflow
- Understand fundamentals of how 3D lighting works in a professional production setting
- Be able to create compelling compositions
- Be able to create accurate, balanced UV coordinates & layout
- Be able to create descriptive, detailed, and interesting textures & normal maps

**Texts and
Materials**

Recommended Texts

Color and Light: A Guide for the Realist Painter

By James Gurney

The PBR Guide: A Handbook for Physically Based Rendering

By Wes McDermott

REFERENCE WEBSITES

<https://helpx.adobe.com/substance-3d-painter/tutorials.html>

<https://docs.arnoldrenderer.com/display/A5AFMUG/Arnold+for+Maya+User+Guide>

Class Policy

1. By signing up for this course, students agree to follow all the instructions.
2. Students will always strive for the best.
3. Students will be professional, respectful, open to suggestions, and avoid being argumentative.
4. Students should not work on their homework or chat with their classmates during the lecture session.
5. Students should be mindful of others during studio time and ensure they don't disrupt the class.
6. Students will not use cell phones during class time.
7. It's okay to make mistakes. But, rather than making excuses, students are expected to own up to their mistakes.
8. Other course workloads and on/off-campus jobs should not affect students' work for this course.
9. Students will not take critiques and feedback from the instructor personally.
10. Attendance and active participation are essential for students' success. If a student misses more than four in-person classes, it will result in a letter grade drop from their final grade.

Attendance

Students are expected to attend every class. If, for some reason, you are unable to attend a class, it is your responsibility to let me know in advance. While each class will be recorded and made available for later review, the intention is to complement, not replace, the regular class with an online class experience. Missing more than four classes in the quarter will automatically result in a drop in a letter grade.

The student is responsible for any lectures or assignments missed. Therefore, if an assignment is due in a week that you are absent, you must ensure it still arrives on time.

Participation

One of the best ways to learn in a classroom environment is through active participation in discussions and critiques. So, when I open up the floor for you to speak, please make an effort to voice your honest and constructive opinion. This will foster a better learning environment while helping everyone learn faster and more effectively.

Assignments Assignments must be handed in on time. *On-time* means submitted through D2L one hour before class on the day the assignment is due. If students turn in their assignments on time, they can fix and resubmit any two assignments by the last class of this quarter to improve their grades. Milestone submissions can only be turned in

Late Work: You are allotted one late assignment per quarter for unforeseen circumstances. Please, contact your instructor before the due date and let him know you'll use your allocated late submission. This assignment must be completed and turned in by the 10th week of the quarter, and you will still receive full credit.

Digital Assignments: All assignments handed in digitally must be in the following format (please note upper and lower case usage)

- Firstname_Lastname_Projectname.extension
- example: Riyadh_Hasan_Toon_Character_01.jpg
- Resubmission: Riyadh_Hasan_Toon_Character_01_Resubmit.jpg

Special Accommodations: Please see the instructor if you have any special considerations.

BACK UP YOUR WORK: Failure of computer software and or Hardware will not be accepted as an extenuating circumstance for late projects or incomplete grades, so back up your work at least once a week.

Critiques Due to the large size of our class and the limited class time, not everyone's work will get a full review during class. If you'd like more feedback, arrange to discuss your work with me during my office hours. We will view and discuss everyone's final project during the last class.

Grading	Project 01: Studio Lighting	20 Points
	Project 02: Prop Texturing	20 Points
	Project 03: Character Texturing	20 Points
	Project 04: Character Look Dev	20 Points
	Project 05: Final Lighting Project	20 Points
	Total	100 Points

Breakdown of Grades by Percentage

	A = 100-93%	A- = 92-90%	
B+ = 89-88%	B = 87-83%	B- = 82-80%	
C+ = 79-78%	C = 77-73%	C- = 72-70%	
D+ = 69-68%	D = 67-63%	D- = 62-60%	F = 59-0%

Your grade will depend on the following criteria:

- Meeting Project Deadlines: It is vital to have your work available for critique. Work unavailable for critique will be considered late and will not be accepted unless you are using your one late assignment.
- Creativity and personal input into the execution of the project
- Coming prepared to class, including assigned reading and assignments
- Effective visually aesthetic solutions to all problems assigned
- Taking the initiative to work outside of class and research
- Hard work and sweat

Cell Phones The use of cell phones in class and the lab is prohibited. Please turn your phone off before entering class. Mistakes will happen (to me, too), but repeated failure is an avoidable distraction. All phone conversations should be conducted outside the class – don't disturb those working in the lab and put others in an uncomfortable situation.

Headphones Whether working with sound in your project or simply listening to music while working, you must be considerate of others and wear headphones. Be aware that if the volume is high enough, others can still hear what you're listening to despite the headphones.

Academic Integrity Work done for this course must adhere to the DePaul University Academic Integrity Policy, which you can review in the *Student Handbook* or by visiting <https://www.depaul.edu/university-catalog/academic-handbooks/Pages/default.aspx>

Plagiarism The university and school policy on plagiarism can be summarized as follows: Students in this course, as well as all other courses in which independent research or writing play a vital part in the course requirements, should be aware of the strong sanctions that can be imposed against someone guilty of plagiarism. If proven, a charge of plagiarism could result in an automatic F in the course and possible expulsion. The strongest of sanctions will be imposed on anyone who submits as his/her own work a report, examination paper, computer file, lab report, or other assignment which has been prepared by someone else. If you have any questions or doubts about what plagiarism entails or how to properly acknowledge source materials be sure to consult the instructor.

Materials and Supplies All assignments in this class will be submitted digitally online through D2L unless otherwise noted. You can also use a file transfer service such as Dropbox or www.wetransfer.com. To send me any assignment that is too big to fit on D2L. Please do not send me links to your google drive. It crashes my email most of the time (no idea why, sorry!).

Schedule

This schedule is subject to change throughout the quarter and will be adapted to fit the needs of the students.

Unless otherwise noted, all assignments will be submitted in digital format online 1 hour before class. Assignments may be submitted earlier

Week	LECTURE	ASSIGNMENT
Week 1 <i>Sep 7 Wed</i>	<p>INTRODUCTION The instructor will explain the class guidelines, grading, and student success factors.</p> <p>LECTURE & DEMO</p> <ul style="list-style-type: none">• Types of Maya lights• Basic settings• Maya Arnold Shader <p>IN-CLASS EXERCISE Students will open Maya and become familiar with different Maya Arnold Lights.</p> <p>HOMEWORK Use your cell phone to take a picture of an interior/exterior at two different times of the day. Think about the color balance, composition, and framing. Use the balance of warmer and cooler colors to create harmony and the Rule of thirds to frame the shot. Ideally, morning and before sunset are the best time to take photographs. Take as many photos as you can and pick two. Upload these photos to the D2L submission folder before the next class.</p>	Project 01: Studio Lighting

<p>Week 2 <i>Sep 12 Mon</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Photography lighting setup • Controlling lights • Mimicking the real-world lighting • Building a Maya studio lighting setup • Backdrop <p>IN-CLASS EXERCISE Students will try the real-world lighting fundamentals in Maya</p> <p>HOMEWORK Students will become familiar with Maya Arnold lights and AiStandardSurface shader.</p>	<p>Project 01: Studio Lighting</p>
<p><i>Sep 14 Wed</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Finishing Maya studio lighting • AiStandard Surface Shader Overview • Creating the mood <p>IN-CLASS EXERCISE Students will create a studio lighting setup</p> <p>HOMEWORK Students will use their model to create a studio lighting setup. The scene should have art-directed shadows and balanced lighting that complement the model.</p>	

<p>Week 3 <i>Sep 19 Mon</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Building a Shading Network • Using real-world references to build a material • Creating a photo-realistic look • Using procedural & Texture maps • Using Displacement maps to create surface details <p>STUDIO TIME Students will work on their Studio Lighting, and the instructor will help them with any creative and technical challenges.</p> <p>HOMEWORK Students will start building the shading network using the demonstrated techniques in class.</p>	<p>Project 01: Studio Lighting</p>
<p><i>Sep 21 Wed</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Adding secondary and tertiary details on the surface • Using Layer Shaders • Adjusting lighting for the shader • Creating a mood • Maya Arnold Render settings • Batch Renders <p>STUDIO TIME Students will work on their Studio Lighting, and the instructor will help them with any creative and technical challenges.</p> <p>Project 01: Studio Lighting is Due before the next class.</p>	

<p>Week 4 <i>Sep 26 Mon</i></p>	<p>DUE Project 01: Studio Lighting</p> <p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Maya UV toolkit overview • UV unwrapping the prop • UDIM <p>STUDIO TIME Students will become familiar with the UV toolkit and start unwrapping their props.</p> <p>HOMEWORK Students will finish the UV unwrapping and bring the UVed model to the next class.</p>	<p>Project 02: Prop Texturing</p>
<p><i>Sep 28 Wed</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Substance Painter Overview • Layers • Masking & Smart masking • Material and Smart material • Brushes, Alphas, Procedural & Particles • Filters <p>IN-CLASS EXERCISE Students will become familiar with SP and try some of the demonstrated techniques.</p> <p>HOMEWORK Students will gather 3D and real-world reference photos to create a Mood Board for their Prop Texturing and bring it to the next class.</p> <p>Watch this tutorial: https://substance3d.adobe.com/tutorials/courses/First-Steps-with-Substance-3D-Painter/youtube-mv6pg1O9vEQ</p>	

<p>Week 6 <i>Oct 10 Mon</i></p>	<p>DUE Project 02: Prop Texturing</p> <p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Mari interface • Layers, Channels, and Shaders • Adjustment layers & procedural layers • Masking • Brushes • Paint Through and Erase tool • Bake, Clone, Warp • Projection <p>IN-CLASS EXERCISE Students will become familiar with Mari and try some of the demonstrated techniques.</p> <p>HOMEWORK Find a TexturingXYZ texture map for your model</p>	<p>Project 03: Character Texturing</p>
<p><i>Oct 12 Wed</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Projection painting • Masking and cleaning projection • Adjusting layers <p>STUDIO TIME Students will work on their Character Texturing, and the instructor will help them with any creative and technical challenges.</p> <p>HOMEWORK Students will continue working on their Character Texturing.</p>	

<p>Week 8 <i>Oct 24 Mon</i></p>	<p>DUE Project 03: Character Texturing</p> <p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Basics of XGen Interactive • Preparing the mesh for grooming • Guides & Modifiers • Grooming eyelashes <p>IN-CLASS EXERCISE Students will become familiar with XGen and try some of the demonstrated techniques.</p> <p>HOMEWORK Groom the eyelashes for your character.</p>	<p>Project 04: Character Look Dev</p>
<p><i>Oct 26 Wed</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Grooming the hair • Using reference photos • Using guides <p>STUDIO TIME Students will work on their Character grooming, and the instructor will help them with any creative and technical challenges.</p> <p>HOMEWORK Students will work on hair grooming.</p>	

<p>Week 9 <i>Oct 31 Mon</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Grooming the hair • Using Modifiers <p>STUDIO TIME Students will work on their Character grooming, and the instructor will help them with any creative and technical challenges.</p> <p>HOMEWORK Students will work on hair grooming.</p>	<p>Project 04: Character Look Dev</p>
<p><i>Nov 02 Wed</i></p>	<p>LECTURE & DEMO</p> <ul style="list-style-type: none"> • Grooming the brows • Hair shader <p>STUDIO TIME Students will work on their Character grooming, and the instructor will help them with any creative and technical challenges.</p> <p>Project 04: Character Look Dev is Due before the next class.</p>	

