DEPAUL UNIVERSITY
COLLEGE OF COMPUTING AND DIGITAL MEDIA
School of Cinematic Arts

ANI 330 ANI 435

3D Character Modeling

Fall 2022 | MW 11:50AM-1:20PM @ CDM 722
Instructor: Riyad 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=ZU04NzF1V2NNalc3dVgrekI5V1FxUT09
Password: 610181

Course Description

This course will instruct students in the process of 3D polygonal-based character modeling. Students will learn professional techniques for building quad-based polygon meshes with an extra emphasis on the proper topology to help prepare their model for rigging. Students will learn complete UV unwrapping for the entire figure as well as blocking and sculpting details in ZBrush. In addition, students will learn to create a basic studio lighting setup to present their character models.
PREREQUISITE(S): ANI 230, GPH 250, or ANI 423 (or equivalent experience)

Course Objectives

After completing this course, students will be able to:

- create a polygon-based character model
- identify and layout effective visual reference
- create a clean topology that deforms believably
- perform a full UV unwrap of a polygonal character
- sculpt 3D characters in ZBrush
- use industry-standard Maya and ZBrush 3D character modeling pipeline
- create a basic studio lighting setup to present their 3D character

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: Riyad_Hasan_Toon_Character_01.jpg
- Resubmission: Riyad_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: Toon Character Blocking	15 Points
Project 02: Toon Character Retopo, UV & Turntable	20 Points
Project 03: Hero Character Blocking	20 Points
Project 04: Hero Character Hair, Costume & Props	20 Points
Project 05: Hero Character Final	20 Points
Project 06: Displacement	05 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 *Sep 7 Wed*	**INTRODUCTION** The instructor will explain the class guidelines, grading, and student success factors. **LECTURE & DEMO** • Student works • Building a portfolio • Artstation, Instagram, LinkedIn • Human Anatomy • Maya and ZBrush • Refresher on Maya modeling tools and shortcuts **IN-CLASS EXERCISE** Students will block a simple character in Maya	Project 01: Toon Character Blocking

Week 2 *Sep 12 Mon*	**LECTURE & DEMO** • ZBrush Interface • ZTool vs. ZBrush Project, Save, Import & Export • Subtools • Gizmo, Masking, Visibility & Polygroups • Brushes & Alphas **IN-CLASS EXERCISE** Students will open ZBrush and become familiar with the interface and navigation. But please, don't hesitate to ask your instructor for help. **HOMEWORK** Practice all the tools demonstrated in the class.	Project 01: Toon Character Blocking
Sep 14 Wed	**LECTURE & DEMO** • Transform Tool • ZRemesher • Dynamesh • Layers • Morph Targets • Projection **IN-CLASS EXERCISE** Masking, Polygroups, Visibility, and Gizmo. **HOMEWORK** Practice all the tools demonstrated in the class.	

Week 3 *Sep 19 Mon*	**LECTURE & DEMO** • Toon Character Blocking in ZBrush. **IN-CLASS EXERCISE** Simple blocking exercise. **HOMEWORK** Students will start blocking their Toon Character in ZBrush.	Project 01: Toon Character Blocking
Sep 21 Wed	**LECTURE & DEMO** • Toon Character Blocking in ZBrush **STUDIO TIME** Students will work on their Toon Character, and the instructor will help them with any creative and technical challenges. **Project 01: Toon Character Blocking is DUE before the next class.**	

| Week 4
Sep 26 Mon | **DUE**
Project 01: Toon Character Blocking

LECTURE & DEMO
• Preparing & exporting the ZBrush model
• Overview of Maya Quad Draw Tools
• Retopology best practice
• Head Retopology

IN-CLASS EXERCISE
Students will open Maya and play with the Maya Quad Draw Tools.

HOMEWORK
Students will start the retopology of their Toon Character in Maya. | Project 02: Toon Character Retopo, UV & Turntable |
| *Sep 28 Wed* | **LECTURE & DEMO**
• Body Retopology

STUDIO TIME
Students will work on their Toon Character retopology, and the instructor will help them with any technical challenges.

HOMEWORK
Students will finish the retopology of their Toon Character in Maya. | |

| Week 5
Oct 03 Mon | **LECTURE & DEMO**
• Maya UV Toolkit
• UDIM
• UVing the Toon Character in Maya

IN-CLASS EXERCISE
Students will UV unwrap a character in Maya.

HOMEWORK
Students will finish UVing their Toon Character. | Project 02: Toon Character Retopo, UV & Turntable |
| *Oct 05 Wed* | **LECTURE & DEMO**
• Basic Studio Lighting setup
• Maya Arnold Render settings for a turntable
• Turntable animation
• Render sequence
• Exporting Render sequence from After Effects

STUDIO TIME
Students will work on their Toon Character, and the instructor will help them with any creative and technical challenges.

Project 02: Toon Character Retopo, UV & Turntable is DUE before the next class. | |

| Week 6
Oct 10 Mon | **DUE**
Project 02: Toon Character Retopo, UV & Turntable.

LECTURE & DEMO
• Overview of human anatomy
• Building a reference board in PureRef
• Proportions of stylized characters
• Blocking a Head in ZBrush

IN-CLASS EXERCISE
Students will Speed Sculpt in ZBrush based on a given topic.

HOMEWORK
Students will start blocking their Hero Character. | Project 03: Hero Character Body |
| *Oct 12 Wed* | **LECTURE & DEMO**
• Blocking out different parts of the body in ZBrush
• Body posture and proportions

STUDIO TIME
Students will work on their Hero Character Blocking, and the instructor will help them with any creative and technical challenges.

HOMEWORK
Students will finish blocking their Hero Character. | |

Week 7 *Oct 17 Mon*	**LECTURE & DEMO** • Sculpting face details in ZBrush • Using anatomical references **IN-CLASS EXERCISE** Students will Speed Sculpt in ZBrush based on a given topic. **HOMEWORK** Students will finish the detailed head sculpting.	Project 03: Hero Character Body
Oct 19 Wed	**LECTURE & DEMO** • Sculpting body details in ZBrush • Using anatomical references and body charts • Turntable in ZBrush **STUDIO TIME** Students will work on their Hero Character Body sculpting, and the instructor will help them with any creative and technical challenges. **Project 03: Hero Character Body is DUE before the next class.**	

| Week 8
Oct 24 Mon | **DUE**
Project 03: Hero Character Body

LECTURE & DEMO
• Blocking costume in Maya
• Sculpting cloth details in ZBrush

IN-CLASS EXERCISE
Students will Speed Sculpt in ZBrush based on a given topic.

HOMEWORK
Students will start working on the costumes. | Project 04: Hero Character Hair, Costume & Props |
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| *Oct 26 Wed* | **LECTURE & DEMO**
• Blocking and modeling props in Maya
• Sculpting details in ZBrush

STUDIO TIME
Students will work on their Hero Character props and costumes, and the instructor will help them with creative and technical challenges.

HOMEWORK
Students will continue working on the costumes and props. | |

Week 9 *Oct 31 Mon*	**LECTURE & DEMO** • Blocking hair mesh in ZBrush • Sculpting hair using a hairbrush **IN-CLASS EXERCISE** Students will Speed Sculpt in ZBrush based on a given topic. **HOMEWORK** Students will start working on the hair.	Project 04: Hero Character Hair, Costume & Props
Nov 02 Wed	**LECTURE & DEMO** • Finalizing details • Secondary and tertiary details **STUDIO TIME** Students will work on their Hero Character props, costumes, and hair, and the instructor will help them with any creative and technical challenges. **Project 04: Hero Character Hair, Costume & Props is DUE before the next class.**	

Week 10 *Nov 07 Mon*	**DUE** Project 04: Hero Character Hair, Costume & Props **LECTURE & DEMO** • Painting the character in ZBrush **IN-CLASS EXERCISE** Students will Speed paint a Sculpt in ZBrush based on a given topic. **HOMEWORK** Students will start painting their Hero Character.	Project 05: Hero Character Final & Project 06: Displacement
Nov 09 Wed	**Please bring your UVed Toon Character Maya file with the Turntable studio lighting to the class.** **LECTURE & DEMO** • Transferring UV to ZBrush from Maya • Exporting Displacement maps from ZBrush • Rendering in Maya using Zbrush **IN-CLASS EXERCISE** Students will export displacement maps from ZBrush and apply them in Maya. **Project 06: Displacement is DUE before the next class.**	
Week 11 *Nov 14 Mon*	**DUE** Project 06: Displacement **LECTURE & DEMO** • Storytelling through the presentation • Secondary details for storytelling • Sculpting the base for the character **STUDIO TIME** Students will work on their Hero Character Final, and the instructor will help them with any creative and technical challenges.	Hero Character Final

Nov 16 Wed	**DUE** Project 05: Hero Character Final **There is no Final exam. Hero Character Final will be due today. Students are encouraged to attend the final presentation during the regular class time if it doesn't conflict with the schedule of other final exams. Today it will be a shorter class. Students will present their final project, and we will wrap up the quarter.**	