Spring 2020

IT 386-002: 3D Modeling and Animation

Eric Nersesian

IT386 3D Modeling and Animation

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OVERVIEW

This course provides a practical overview of the latest industry practices of procedural tool building for 3D graphics, animation, VFX, and real-time applications. Experience is gained in user experience diagramming, user interfaces feature-centered design of node-based networks for procedural 3D graphics. Students gain experience with the development of VFX tool creation for artists focusing on 3D graphics, animations, interface elements and interactive experience building through the use of VEX programming in the Houdini content creation engine. Projects focus on cross-platform delivery of Houdini HDAs into third party content packages and game engines like Blender, Max, C4D, Unity, Unreal. Students will be required as part of their design document and prototyping to provide constructive feedback to other student groups. Iteration and communication is a vital part of the development cycle and so students should expect special attention to be paid to both.

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Sprint 1				Sprint 2				Sprint 3				Sprint 4			

Sprint 1: Learn Houdini, 3D, VFX, tool building for artists, user requirements gathering
Sprint 2: Create a Houdini network with user testing
Sprint 3: Convert a Houdini network into Houdini engine HDA with user testing
Sprint 4: Final round of user testing, feedback, refinement, and presentation
Final Presentation: There will be a final exhibit presentation for DD442 that includes students from this class presenting the node network, user flow diagrams and tool demo

COURSE STRUCTURE

The course is broken up into four sections, focusing on refining your skills in learning 3D graphics through the Houdini software, building a node network in Houdini, and turning that network into an HDA with a user interface for use in third party software. Each section has 4 weeks of instruction lead project development with the last section giving students time for a final round of user testing, feedback, and refinement of tools. Each week has three hours of class time, and 3 hours of project homework. Both live and online instruction is accompanied by exercises to practice new knowledge. The only graded items in the class are the projects due at the end of each of the four sprints.

PEER MENTORING
Problem-solving/troubleshooting/impediments: ask other students first, check out the documentation and then ask me. There will be technical and creative help forums on moodle, and students get credit by helping other students in those forums. Feel free to email students for help in the class as well or meet outside of class.

COLLABORATION
Students will be collaborating with students from DD442 VFX class. These students will be the users of your tools as the artists to create the final VFX presentations. You will meet with DD442 students at least a few times during each sprint to gather initial requirements, conduct user testing, gather feedback for continual refinement in iterative development method until your tools are polished and presented at the final demo hall.

ACADEMIC INTEGRITY
The NJIT Honor Code expects the work you submit is the result of your effort only. CREDIT ALL WORK YOU USED FROM ANOTHER SOURCE.

CLASSROOM CONDUCT POLICY
Constructive involvement includes regular attendance, constructive discussion, helping students, and volunteering for demonstrations. Non-constructive involvement includes non-participation and non-constructive negative comments. Be respectful and a good class citizen, but make sure to give to student some useful advice.

SPRINT PROJECT GRADING STRUCTURE
At the end of each sprint, there will be a week to submit your deliverables and take a written exam based on material from that sprint. You can submit the sprint and take the exam during regular class time for potentially 100% of sprint grade, or take it during office hours for potentially 85% of sprint grade. Either way, you start the following week on the next sprint with a starter project from the professor. This way, if you cannot complete a sprint, you start on the same page with the rest of the students for the next sprint. Come to class each week to ensure you are on the right path for the sprint.

STUDY PARTICIPATION GRADING STRUCTURE
A list of studies will be presented to you during a class. You are expected to participate in two studies. Each study will take in total one hour of your time. You can schedule to take the study when it's convenient for you during the semester. Participating in a study will give you a learning experience into how UX research is done as part of the HCI component of the class. If you cannot participate in a study, you will be given a reading assignment to do for the grade as an alternative.

GRADING POLICY

The final grade is calculated from the three sprint deliverables with an exam, one study participation, and one final exam. If you cannot participate in the study then a sprint 4 deliverable will be assigned to you. Please note that a D is still a passing grade for IT students. It counts toward graduation, you just need to keep your total GPA over 2.0.
A 90-100 | B+ 86-89 | B 80-85 | C+ 76-79 | C 70-75 | D 60-70 | F < 59

Sprint 1 Deliverable & Exam	20%
Sprint 2 Deliverable & Exam	20%
Sprint 3 Deliverable & Exam	25%
Sprint 4 Deliverable & Presentation	30%
Study Participation	5%