Digital Modeling
ART 3623C
Class Hours: M/W 11:50 – 2:35
Prof: McArthur Freeman, II

Office Hours: M/W 3:00-4:00 or by appointment, Office: 255
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Course Description and Objectives:
Digital Modeling is the act of creating virtual representations of 3 dimensional forms on the computer. Those models can be used to create simulations, develop animation, design 3D objects, print physical models, and render 2D images that can be used for a variety of purposes. As the tools for creating digital models have become more intuitive, accessible, and efficient, 3D modeling has increasingly become an essential part of the toolset for artists and designers.

This course focuses on the entire 3D image making process, which includes modeling tools and techniques, topology, 3D design, texturing, lighting, and rendering. Modeling and 3D imaging has significant benefits for those are pursuing 3D modeling and animation as well as those who have a 2D emphasis. Throughout the course, we will not only explore the tools and and creative process, but we will also explore how formal choices impact meaning, and discuss other artists and designers who either use digital modeling as a part of their work or address concerns related to digital modeling.

Statement of Student Outcomes
Students who successfully complete this course will be able to:

- Discuss the history, theory, and practices involved in digital modeling
- Recognize different geometry types and modeling approaches
- Discuss formal relationships and how visual choices communicate meaning
- Use common modeling tools, processes, and strategies to construct 3D models
- Create effective topology through active problem solving
- Prepare models for texturing and apply textures to models
- Identify and create digital camera and lighting set-ups
- Effectively render and composite images and frame sequences
- Prepare geometry for 3D printing

Attendance Policy
Attendance within class is critical. New concepts are often taught each class. At other times, it is used for discussion or one-on-one assistance. When you are not present in class, it is likely that you will miss information related to the assignments and your work will be less successful. As a result, this may affect your grade. In fact, excessive excused absences can lead to failing the course if you can no longer effectively participate. Missing class due to illness, death in the immediate family, and other documented crises will be considered an excused absence. Any other absences will be considered unexcused absences. The results of unexcused absences are listed below:

Unexcused Absences:
2 absences = Students have a maximum of 2 unexcused absences. Any additional absences will result in immediate grade reductions.
3 absences = Final grade is reduced by 5 grade points
4 absences = Final grade is reduced by 10 grade points
5 absences = Final grade is reduced by 15 grade points
6+ absences = no credit is received for the course
Tardiness:

- Being tardy two times is equal to one absence
- Tardiness after 30 minutes will be considered an absence
- Leaving class early will be considered an absence

Note: Please keep in mind that even if you are tardy and you receive an absence for the day, it may still be important for you to attend class so that you do not miss information, work time, discussion, or demos that may have additional influence on your grade and class performance.

IMPORTANT: Students who anticipate being absent from the class due to a religious observance should inform the instructor by the second class meeting of the term.

Policy of make up of missed assignments

Students should notify the instructor at the beginning of each academic term if they intend to be absent from a class or announced examination for an approved reason. If excused for an absence, the student is responsible for completing all academic work, examinations, assignments, and labs within a period of time and in a manner deemed appropriate by the instructor. Even if your absences are excused, excessive absences may threaten your satisfactory completion of the course. Absences may count from the first class meeting, including for students who hope to add the class after the first day.

- Projects are due on the critique date, by the start of class. Unless the instructor has specifically stated otherwise, your work must already be submitted on Pass-Through by the time that class starts.
- Each assignment has multiple stages or milestone points that occur during the development of the final work. Your progress at each stage is evaluated on a daily basis and this does affect your final assignment grade. For instance, a student that delays work for several class days and then works to complete it right before the deadline without having that work previously available for classroom discussion or feedback will have a grade reduction.
- All projects must be turned in for a passing grade in the class.
- All projects for the class must be turned in on a final DVD on the last day we meet for the semester.
- Late projects will instantly be graded down 10% (one letter grade), and then one letter grade for each week until it is turned in.
- Missing a critique will result in an immediate 5% grade reduction for the semester.
- Missing the final critique will result in an immediate 10% grade reduction for the semester.

Evaluation and Grading:

Each assignment will have evaluation criteria that are specific to the goals of the project. However, each project will focus on the following basic criteria in varying degrees:

Craft and Proficiency: Does your work reflect mastery of the tools, processes, and conventions discussed in class? Are you able to build on those skillsets to extend into new or innovative ways of working? How well do you consider and manipulate broad and subtle formal relationships in the work?

Range of Exploration: What is the sheer number of solutions that you generated? How different is each idea from the next? Did you refine ideas with subtle changes to arrive at your final work?

Design: Does your work exhibit an understanding of design principles? Do the formal choices that you have made work together to communicate the content and support the intentions of the work?

Presentation and organization: Have you organized and discussed your work in a way that makes it easy to navigate and make conceptual connections? Did you show enough to effectively get your ideas across? Did you contextualize aspects of the work that you discussed? Did you connect ideas in your work without making assumptions that viewers will see what is in your head?

Critical thinking: The intellectually disciplined process of actively and skillfully conceptualizing, applying, analyzing, synthesizing, and/or evaluating information gathered from, or generated by, observation, experience, reflection, reasoning, or communication, as a guide to belief and action.

*Facione, Peter A. Critical Thinking: What It is and Why It Counts, Insightassessment.com, 20011, page 26
• Geo-Primitives 10%
• Modeling Exercises 20%
• Still Life Project 30%
• The Normals 30%
• Class Participation 10%

Plagiarism
Plagiarism or submitting work that is not your own, especially without accrediting others, will be rewarded with the most severe response that is allowable by USF’s academic dishonesty policy. If in doubt ask the instructor and publicly document and accredit the source.

Cell Phones, texting, and other technology distractions
During class, cell phones must be turned off or set to silent mode. Texting in class or talking on the phone in class will not be tolerated. In cases of emergency, for instance if you are primary caregiver of a family member, you may step outside to use the cellphone. However, these occurrences should be short and rare. During discussions or demos, iPods, portable music devices, or online listening that is not currently a part of the lesson is not allowed. Checking Facebook or similar social media during active class time will also be considered disturbance infractions. There are times that are specifically work times where you can play music or other audio content; however, you must use headphones then and it should be played at a very low level. If it is at all distracting, it should be turned off. Infractions will be considered a tardy. I may not mention it during class, but will simply mark you as tardy. That said, we will be constantly doing activities online, finding online resources, and sharing information. As a guide, you should make sure that your activities are directly related to the course, appropriately sharable with others, and not distracting to the class environment.

Expectations and advice for student success
• Out of class work is expected on a weekly basis. You should expect to spend at least 6 hours per week out of class.
• Each student is expected to understand the tools and core concepts discussed in the class as a baseline. To perform above average, you will need to be highly motivated, your work and discussion will reflect strong critical thinking skills, and your positive contribution to the class must be clearly evident.
• The technical part is only the baseline. Be prepared to discuss your creative process and design decisions.
• Pace yourself and be consistent. It is critical that you are active during every part of the process. Procrastination combined with “all-nighters” will not be effective.
• Take responsibility for your education. If you put more into this experience, you will get more out of it. Do not be satisfied with just passing. Do not be satisfied with making an A. Your goals should be greater than your grades.
• Learn how to find the resources that you need.
• Keep things manageable. Be ambitious but don’t let being overwhelmed undermine your potential for success.
• Embrace the projects. Enjoy the challenges and constraints in each one.
• Watch the videos. Without viewing them it is unlikely that you will do well.
• Push yourself. Have fun, but understand that this is hard work. If you don’t have to push yourself or step outside of your comfort zone, you will only grow at a slow pace and miss opportunities that you will wish that you had taken advantage of later.
• Appreciate and solicit criticism.
• Don’t be afraid to fail. Just make sure that you keep moving forward.

Web Content:
This course may involve electronic sharing or posting of personally identifiable student work or other information with persons not taking or administering the course. Students will be asked to sign a consent
allowing disclosure of their personally identifiable work. No student is required to sign the consent as a condition of taking the course. If a student does not want to sign the consent, he or she has the right to ask the instructor for an alternative, private means of completing the coursework.

- We will be using Vimeo to view and post videos to the private class group. You will need to create a free vimeo account and “follow” the instructor.
- We will be using Flickr for image posting in the private class group. You will need to create a free Flickr account.

**Dates of scheduled in-class critiques and deadlines**
- Geo-Primitive Final Critique and Submission – September 5th
- Modeling Exercises Final Critique and Submission – September 26th
- Still Life Final Critique and Submission – October 29th
- The Normals Review and Final DVD Submission – December 5th

**Course outline including assignments and due dates**
The outline below is a tentative schedule and may need to change at the instructor’s discretion. Each class day there are milestone due dates and progress that is expected. In addition to the final products that you produce, your gradual progression through the components of each assignment is also evaluated and plays a role in your final grade.

- **August 27th – Introduction and Overview**
  - Ice Breaker, Introductions, Syllabus, Basic Principles, Content Map
- **August 29th – Geo-Primitive Zoo (Maya)**
  - File Structure, Navigation, Transformations, Grouping, Mirroring, Construction History
- **September 3rd – No Class**
- **September 5th – Geo-Primitive Zoo (Crit and Problem Solving)**
- **September 10th – Modeling Exercises: (Extrusions + Cubes to Cylinders)**
  - Smoothing Workflow, Edges, Roundness and Tension
- **September 12th – Building a Coffee Mug (Combining separate pieces)**
- **September 17th – Modeling Exercises (Image Planes, Edge Flow, and Topology)**
- **September 19th – Modeling Exercises (Topology Exercises)**
  - Making Holes and Circular protrusions.
- **September 24th – Modeling Exercises (UVs and Texturing Part 1)**
  - Planar Mapping and UV Coordinates
- **September 26th – Modeling Exercises (UVs and Texturing Part 2 + Critique Day)**
  - Other types of projections and texturing exercise
- **October 1st – Still Life (Intro cameras, lighting, and rendering exercises)**
  - 3 Point Lighting and Common lighting schemes, multi-pass compositing, rendering
- **October 3rd – Still Life (Blocking in Forms)**
- **October 8th – Still Life (Developing Primary and Secondary Forms)**
- **October 10th – Still Life (Refining Transitions and Topology)**
- **October 15th – Still Life (Problem Solving)**
- **October 17th – Still Life (Problem Solving)**
- **October 22nd – Still Life (UV Layout)**
- **October 24th – Still Life (UV Layout + Texturing)**
- **October 29th – Still Life (Texturing, Final Rendering, and Crit)**
- **October 31st – The Normals (Introduction and Concept Design)**
- **November 5th – The Normals (Concept Design & Head Modeling)**
- **November 7th – The Normals (Begin Modeling Primary Forms + Review Head Model Variations)**
- **November 12th – No Class**
- **November 14th – The Normals (Primary and Secondary Forms)**
- **November 19th – The Normals (Primary and Secondary Forms)**
• November 21st – The Normals (Details and Tertiary Forms)
• November 26th – The Normals (Details and Tertiary Forms)
• November 28th – The Normals (Polypainting)
• December 3rd – The Normals (Polypainting and Rendering)
• December 5th – The Normals (Final Renders and Critique)

Notice of permission to sell class notes or tapes of class lectures
Students are not permitted to sell class notes or tapes of class lectures.

Required supplies
• Firewire drive or USB external hard drive. It must be formatted for a Mac. Please ask McArthur if you have any questions.
• Stereo Headphones (we have ones for the class that you can check out)
• Small sketchbook

Titles of required texts and readings
Students will be required to purchase a Lynda.com subscription for the course. (Approximately $33.00) It is not a full Lynda.com subscription that gives you access to all of the videos on the site. This subscription is an educational package that comes with 5 video titles at a discounted rate. After the first day of class you will receive an email to subscribe that is specific to this digital modeling course. The titles are listed below.

• Maya Essentials 1: Interface and Organization (Week 1 and 2) 1 Hour 35 Minutes
• Maya Essentials 2: Polygonal Modeling Techniques (Week 3 and 4) 2 Hours 17 Minutes
• Maya Essentials 4: Creating Textures and Materials (Week 5 and 6) 1 Hour 51 Minutes
• Maya Essentials 6: Lighting and Rendering (Week 7) 1 Hour 52 Minutes
• Zbrush 4: Essential Training (Week 8-10) (2 Hours 57 Minutes)

There are several instructor demos and lectures that will be available online throughout the course. They will be assigned along with specific project sections.

Additional Readings will be given as handouts or will be available on Blackboard.

Optional Textbooks:
Digital Modeling - William Vaughan Digital
ISBN: 978-0321700896
Cost: $31.76

Digital Lighting and Rendering - Jeremy Birn
ISBN: 978-0321316318
Cost: $36.17

Accommodations for Disabilities
Any student who feels s/he may need an accommodation based on the impact of a disability should contact me privately to discuss your specific needs.

Students with disabilities are responsible for registering with Students with Disabilities Services in order to receive academic accommodations. SDS encourages students to notify instructors of accommodation needs at least 5 business days prior to needing the accommodation. A letter from SDS must accompany this request.

Please contact the office of Students with Disability Services at (813) 974-4309 in SVC1133 to coordinate reasonable accommodations for students with documented disabilities.