

George Mason University
College of Visual and Performing Arts
Computer Game Design
V1.0

GAME 398: Advanced Game Modeling & Animation

Term: Fall Semester 2017

Section: 002

Prerequisites: Game 231, with a 'C' grade or better.

Instructor: Professor Gregory Grimsby

Office: Art and Design Building Rm 2021

Email: ggrimsby@gmu.edu

3 Credit Hours

Studio/Lecture: TH 4:30PM-7:10PM

Room: Art and Design Building Rm 1018

Contact: 703-993-5733

Office Hours: TH 2:00PM to 4:15PM
or by appointment

Website: <http://gregorygrimsby.com/>

Course Description:

Intermediate topics in 3d modeling and animation for games are explored including more complex character designs and environment models. Students will be exposed to a wider array of game art topics including characters, environments, VFX, lighting, and normal mapping. Additionally, texturing techniques via Photoshop and character animation via Biped will be explored in depth. Studies will culminate in an end of term project, where students will create a playable demo produced in a current game engine.

Objectives:

To build an intermediate level of skill and knowledge in the making of 3D game art.

Students who complete this course will more specifically:

- Demonstrate intermediate skill in modeling objects in 3DS MAX.
- Demonstrate intermediate ability to texture their models.
- Demonstrate thorough knowledge of importing models into a game engine (Unity3D).
- Demonstrate intermediate ability to animate 3D models using transforms, curves, and Biped.
- Demonstrate introductory ability to create game VFX.
- Demonstrate an intermediate understanding of the art production pipeline and asset management.

Assessment and Grading:

Assignments

Students will be responsible for the assignments given in Blackboard. **It is the students' responsibility to refer to Blackboard and the syllabus to see the exact date and time assignments are due.**

Final Project

In the latter half of the semester, students will begin working on assets for their end of semester capstone project. For this project, students will create a game-ready character and environment in the Unity game engine. Students will also incorporate VFX and lightmapping in their levels. By the final exam time, each student will submit a playable mini-game that demonstrates what they have learned about art production for games. More details will be given in Blackboard.

Classroom Participation

Students are expected to actively engage in class discussions, answer questions when prompted, and in general, add to the collective dialogue.

Final Exam

There is no final exam in this course. However, final projects are reviewed during our final exam time.

Class Structure

Game 398 is primarily a lecture-based course using in-class exercises. Students are expected to follow along with these exercises. Assignments and lessons focus on improving the students' skill level and understanding of a broad survey of game art production topics. Programmers, designers, and of course game artists all benefit from understanding how art is made and its impact on gameplay, system design, and production time.

Resources

A traditional textbook is not used in this course. Instead, students will use online resources at <http://gregorygrimsby.com> as their study material. The website contains dozens of video tutorials offered in a progression of chapters that correspond to the lecture. These are meant to augment class lectures, not replace them and ARE NOT a viable alternative to attending class.

The website is password protected. When prompted, enter this password: mason

Game Lab

In the Art and Design building, room **2002** is a monitored computer lab available outside of class hours for students to work on their projects.

Students will need at least 10 hours outside of class each week to complete coursework.

Required Class Material:

It is the student's responsibility to obtain consistent, stable access to 3DS MAX 2018 and other software used in the class (listed below). Students who can use the lab to complete all assignments are not required to have a computer to do the coursework.

Software Needed:

The software below is needed in this course. It is installed on all class and game lab computers. Students do not need to acquire this software IF they are able to use the lab to complete assignments

- 3ds max 2018 (student version available at <http://students.autodesk.com>)
- Photoshop (no free version available). Consider Adobe "Photography" monthly subscription at \$9.99/mo.
- Unity3D (free version available for download from www.unity3d.com)
- Zip or Rar archive program
- FRAPS
- Handbrake

Online backup, aka Dropbox.

It is suggested that students use an online backup service to prevent their project files from being lost. Every semester multiple students report lost work due to damaged or misplaced thumbdrives, corrupted files, or dead hard drives. Dropbox, Spideroak, and Sugarsync are example services that students should explore. Most services offer free storage that is sufficient in size for this course.

Hardware Needed:

- Students will need a USB thumbdrive or USB hard drive formatted as FAT32 (a cross-compatible format for Mac/PC). This is used to save class work. Suggested minimum free storage space is 4GB.
- Wacom tablet or Cintiq. Lab workstations have drawing tablets which make texturing and digital painting easier and better. Students will need a tablet to the best work possible on the texturing assignments. Students wishing to purchase their own can consider the entry-level Wacom Bamboo priced from \$70 and up. The intuos5 small is a significant improvement, but more costly at \$200. Having a tablet is a must for any student serious about making game art.

Grade Weighting and Scale

All grading is done on a point scale used to assess assignments, participation in classroom activities, the mid-term project, and the final project. At the end of the course, the student's grade is a percentage of total points earned over total points possible. The chart below shows the typical point values, but students should refer to Blackboard to see the point value for specific coursework.

<u>Coursework</u>	<u>Point Value</u>
Assignments (each)	varies (50 or 100)
Final Project	200
Checkpoint	50
Classroom Participation	50

Grade Scale

To receive a grade of "A" a student must earn a minimum of 90% of the maximum coursework point total.

To receive a grade of "B" a student must earn a minimum of 80% of the maximum coursework point total.

To receive a grade of "C" a student must earn a minimum of 70% of the maximum coursework point total.

To receive a grade of "D" a student must earn a minimum of 60% of the maximum coursework point total.

Failure to receive a "D" grade will result in a grade of "F".

**Plus and Minus grades are used for A, B, and C's to provide more assessment granularity.

'C' Grade Minimum

Starting fall 2012, students must have earned a 'C' grade or higher in prerequisite courses in the Game Design Major and Minor. For example, to take GAME 398, a 'C' or higher must have been earned in GAME 231.

Grading Criteria

Assignment and projects are graded based on the criteria given below:

- completeness
- ambition/effort
- specification adherence
- technical execution
- aesthetic qualities

These are assessed using a grading rubric.

Late Work and Make-up Policy

Late assignments are not accepted. Meeting deadlines is one of the most important aspects of art production. Please pay careful attention to the DUE DATE & TIME for each assignment. DO NOT PROCRASTINATE!!!

If extenuating circumstances prevent a student from finishing an assignment, the student must contact the instructor BEFORE the assignment is due. Late work is only accepted at the instructor's discretion.

Attendance

Attendance is mandatory. Unexcused absences reduce a student's final grade using the chart below. Two tardies equal one absence. Email the instructor if you know you will be missing class.

Deductions for Absences

1 to 2	No deduction
3	-1 letter grade
4	-2 letter grades
5+	Grade of 'F'

Each class is a building block for the next. Absent students miss important material and typically do not do well in this course. The video tutorials do not replace the lectures but supplement them. In the event that you have to miss class, you are responsible for making up the work and completing the assignments on time.

Honor Code, Diversity, and Accommodations To promote a stronger sense of mutual responsibility, respect, trust, and fairness among all members of the George Mason University community and with the desire for greater academic and personal achievement, we, the student members of the university community, have set forth this honor code:

Student members of the George Mason University community pledge not to cheat, plagiarize, steal, or lie in matters related to academic work.

See GMU Honor Code: <http://academicintegrity.gmu.edu/honorcode/>

If you are a student with a disability and you need academic accommodations please see me and contact the Disability Resource Center (DRC) at 703.993.2474. All academic accommodations must be arranged through that office.

Students must inform the instructor at the beginning of the semester, and the specific accommodation will be arranged through the Disability Resource Center.

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Sign up for the Mason Alert System by visiting the website <https://alert.gmu.edu>, and an emergency poster exists in each classroom explaining what to do in the event of crises; emergency procedures exists on: <http://www.gmu.edu/service/cert>

Students must use their MasonLIVE email account to receive important University information, including messages related to this class.

See <http://masonlive.gmu.edu> for more information.

Course Schedule

Week

I TH 8/31	Introduction, Modeling Review
II TH 9/7	Modeling Review & Best Practices Assignment Due: Robot model
III TH 9/14	Organic Modeling
IV TH 9/21	UVing Assignment Due: Character Model
V TH 9/28	Texturing
VI TH 10/5	Texturing (continued) Assignment Due: Character model # 1, UVed and textured
VII TH 10/12	Whiteboxing & Environment Art
VIII TH 10/19	Environment Art
IX TH 10/26	Environment Art Assignment Due: Environment Model and Texture Professor Reviews Final Project ideas
X TH 11/2	Rigging
XI TH 11/9	Character Animation Assignment Due: Character Model
XII TH 11/16	Character Animation
XIII TH 11/24	Thanksgiving break
XIV TH 11/30	VFX and Lighting and Review First Playables First Playable Checkpoint Due
XV TH 12/7	Final Project Presentations Final Projects Due.