

The Art Institute of California – San Francisco
Course Syllabus

Course Number: GA3324

Course Title: Character Modeling

Class Meetings: Mondays from 1-5pm in room 015, 1170 Market

Session/Year: Spring 2012

Instructor Name: Andrew Klein

Email Address: amklein@aii.edu (for reserving meeting times only)

Phone: not available

Website: www.kleinmakelearngood.com (has all the course notes)

Instructor Availability Outside of Class:

-1 tutoring hour per week, first come first serve: Mon.5-6pm, room 015

-1 office hour per week, GAD Portfolio students first: Wed. 5-6pm, room 015

Character Modeling

Course Description:

This course covers advanced modeling techniques used for building a 3 dimensional character. Students will explore techniques of character modeling to include various approaches to figure construction.

Course Length: 11 Weeks

Contact Hours: 44 Hours

Lecture: 22 Hours

Lab: 22 Hours

Credit Values: 3 Credits

Course Competencies:

Upon successful completion of this course, the student should be able to:

- Use the combined motion of camera and character effectively
- Utilize audio in computer animation
- Apply the principles of rigging and set-up to solutions to animation problems
- Apply the principles of rendering to solutions to animation problems
- Produce and render two original prototype characters.
- Keep an Idea Journal and sketchbooks in preparation for thumbnails and model sheets for all character modeling projects to establish professional preplanning skills.
- Demonstrate materials and mapping principles of character models and apply those to short exercises.

Course Prerequisite(s): GA3314 3D Character Rigging or Permission of Academic Department Director/Advisor

Text(s):

Zbrush Digital Sculpting: Human Anatomy, by Scott Spencer, Sybex, ISBN: 978-0-470-45026-0 (**referred to in reading as: SPENCER**)

Stop Staring: Second Edition, by Jason Osipa, Sybex, ISBN: 978-0-471-78920 (**referred to in reading as: OSIPA**)

Autodesk Maya Techniques: More Hyper-Realistic Character Creation, by Autodesk Official Training, Sybex/Wiley, ISBN: 978-1-897-17749-5 (**referred to in reading as: HYPER**)

Materials and Supplies: Note taking material, blank CDs or CDR

Estimated Homework Hours: 4-6 hours per week.

Technology Needed: PC/NT, Maya, 3D studio Max.

Grading Scale:

All assignments must have clear criteria and objectives to meet. All students shall be treated equitably. It will be that student's right to know his/her grade at any reasonable point that information is requested by that student. The criteria for determining a student's grade shall be as follows (on a percentage of total points basis):

A	100-93
A-	92-90
B+	89-87
B	86-83
B-	82-80
C+	79-77
C	76-73
C-	72-70
D+	69-67
D	66-65
F	64 or below

Process for Evaluation: Based on an accumulated 175 point scale via the provided rubrics which are hosted on the course website.

MAA/GAD students:

Ecorche project	10 points total
References for Characters 1 and 2	10 points total
Anatomical Model (Char 1 base)	30 points total
Anatomical Model (Char 2 base)	30 points total
Midterm Quiz	15 points total
Character 1 Costuming/Sculpting	30 points total
Character 2 Costuming/Sculpting	30 points total
Facial Sculpting Quiz	10 points total
Attendance	10 points total (one absence allowed before points are deducted)

VGP students (if they choose to) are graded on a separate 130 point scale:

Quality of Skeletons	30 points total
Quality of Binding	15 points total
Quality of Controls	15 points total
Quality of Tools/Scripts	60 points total
Attendance	10 points total (one absence allowed before points are deducted)

Student Evaluation/Grading Policies:

- Class time will be spent in a productive manner.
- Grading will be done on a point system.
- Points for individual activities will be announced.
- All work must be received by the set deadlines.
- ABSOLUTELY NO WORK WILL BE ACCEPTED AFTER THE FINAL CLASS MEETS WEEK 11.

Classroom Policy:

- No food allowed in class or lab at any time. Drinks in sealable bottles allowed in classroom.
- Edible items brought to class or lab must be thrown out.
- If student elects to eat/drink outside class or lab door, missed time is recorded as absent.
- Attendance is taken hourly. Tardiness or absence is recorded in 15-minute increments.
- Break times are scheduled by the instructor at appropriate intervals.
- No private software is to be brought to lab or loaded onto school computers.
- No software games are allowed in lab (unless in course curriculum).

- Headphones are required if listening to music during lab. No headphones are allowed in lecture.
- Any student who has special needs that may affect his or her performance in this class is asked to identify his/her needs to the instructor in private by the end of the first day of class. Any resulting class performance problems that may arise for those who do not identify their needs will not receive any special grading considerations.

Disability Policy Statement:

It is our policy not to discriminate against qualified students with documented disabilities in its educational programs, activities, or services. If you have a disability-related need for adjustments or other accommodations in this class, contact the Disabilities Services Coordinator at 415-276-1060.

Academic Honesty Policy:

Students are expected to maintain the highest standards of academic honesty while pursuing their studies at AiCA-SF. Academic dishonesty includes but is not limited to: plagiarism and cheating; misuse of academic resources or facilities; and misuse of computer software, data, equipment or networks.

Student work that appears to violate AiCA-SF's standards of academic honesty will be reviewed by the Committee on Academic Honesty. If the work is judged to have violated standards of academic honesty, appropriate sanctions will be given. Sanctions include but are not limited to course failure and academic termination.

Quarter Credit Hour Definition:

A quarter credit hour is an amount of work represented in intended learning outcomes and verified by evidence of student achievement that is an institutionally established equivalency that reasonably approximates not less than:

- (1) One hour of classroom or direct faculty instruction and a minimum of two hours of out-of-class student work each week for 10-12 weeks, or the equivalent amount of work over a different amount of time; or
- (2) At least an equivalent amount of work as required in paragraph (1) of this definition for other academic activities as established by the institution including laboratory work, internships, practica, studio work, and other academic work leading to the award of credit hours.

Suggested Course Outline (applies only to MAA/GAD track)

Week 1: **Lecture:** Overview of course and class resources. Intro to projects.
 Ecorche Project introduction Students will be provided with a skeleton

model which they will use low poly spheres to stretch into muscles creating a muscular system around the skeleton.

Lab: Students will start from an ecorche approach and build themselves a template off the provided skeleton. We will cover building the area around the armpit in class.

Homework: Continue working on the ecorche which will be due in week 2. Students will create concept art and reference PDFs (including written vital statistics and backstories) for both Character 1 and Character 2. This will also be due at the start of class in week 2.

Reading: Read all material posted on website and watch all videos.
SPENCER: 1-14, OSIPA: 178-192, HYPER: 18-23

Week 2: **Lecture: *Sculpting the Face.*** Students will import their completed ecorche muscle and bone template into zbrush. They will also add in the provided head template. While learning the Zbrush interface, students append the rough head as a subtool and sculpt it around the cranium.

Lab: Work on faces

Homework: Students continue to add and sculpt on mass-shapes into the ecorche in Zbrush.

Reading: Read all material posted on website and watch all videos.
SPENCER: 15-37, OSIPA: 76-89

Week 3: **Lecture: *Retopologization.*** Students will export out their rough, multi-part ecorche mesh to Maya, where they will combine it and send it to 3dCoat for retopologization. We will discuss the technical aspects of how to use 3dCoat as well as technically how the topology should flow.

Lab: Students will retopologize their character, potentially leaving out the hands and feet which can (in some opinions) be modeled easier using a box modeling method in Maya.

Homework: Finish Retopologization

Reading: Read all material posted on website and watch all videos.
SPENCER: 71-125, OSIPA: 90-100, HYPER: 100-115

Week 4: **Lecture: *Completing the Anatomical Base.*** Instructor will take a finished, retopologized anatomical mesh back into zbrush for a 1st pass sculpt, which will be expected of students for the midterm.

Lab: Students will have time to finish up their retopo, add in missing hands and feet in maya, then will practice their anatomical sculpt.

Homework: Finish base meshes for both characters for week 5. Present renders with and without wireframe for midterm next week (2 front, 2 back, 2 of face). These can be Maya renders or Zbrush renders.

Reading: Read all material posted on website and watch all videos.

SPENCER: 48-69, OSIPA: 298-242, HYPER: 116-139

- Week 5:** **MIDTERM CRITIQUE!!!** Instructor will meet with students 1 on 1 to discuss their project thus far during the whole class.
QUIZ: In the meantime, students will be given a quiz. Using between 5,000 and 7,000 triangles, students will be asked to recreate in 3d a 2d cartoon character (NO ANIME ALLOWED). Good examples would be Bugs Bunny, Bart Simpson, Eric Cartman, Goofy... etc.... Students will have only 2 hours to complete this model (yes, its a speed test).
Lab: When their quiz is completed, students will return to working on their anatomical sculpt or prepping clothing.
Homework: Continue working on Character 1 and 2.
Reading: Read all material posted on website and watch all videos.
SPENCER: 127-157
- Week 6:** **Lecture: *Creating Clothing.*** We will look at creating clothing elements for the already created Character 1 digging into new techniques in Zbrush.
Lab: We will practice extracting and sculpting clothing using a variety of techniques. Students will begin working on their second character simultaneously.
Homework: Continue working on Projects 1 and 2.
Reading: Read all material posted on website and watch all videos.
SPENCER: 158-177, HYPER: 73-87
- Week 7:** **Lecture: *Detailing in Zbrush.*** We will begin our examination of more advanced sculpting techniques including using Alphas and the Projection Master, among others.
Lab: Using Alphas, techniques for clothing
Homework: Continue working on Projects 1 and 2.
***** Also, students need to find a good quality photo of a celebrity, athlete, politician, or otherwise recognizable individual to bring to class for week 8*****
Reading: Read all material posted on website and watch all videos.
SPENCER: 190-213, HYPER: 140-150
- Week 8:** **Lecture: *Exporting from Zbrush.*** We will examine creating UVs for characters, and how to extract normal maps from zbrush and send back to Maya for rendering.
Lab: Normal Maps
QUIZ: We will take 1 hour at the end of class for this quiz. With the rough head template (distributed previously in week 2), students will sculpt as

faithful a bust of their chosen individual as possible. This is due at the end of class.

Homework: Continue working on Characters 1 and 2

Reading: Read all material posted on website and watch all videos.

SPENCER: 215-253

- Week 9:** **Lecture: *Hair*.** We will use this week to look at different ways to create hair in Maya, including Maya Dynamic Hair simulations, Fur Simulations, Sculpting in Zbrush, and good old Alpha Planes.
Lab: Hairy Hair Hair Hair.
Homework: Continue working on Projects 1 and 2
Reading: Read all material posted on website and watch all videos.
SPENCER: 335-365, OSIPA: 1-16, 282-288, HYPER: 24-43
- Week 10:** **Lecture: *Rigging the Body*.** This “lecture” will consist of notes online discussing how characters can be posed. However, the class will consist entirely of labtime for students to work on their projects and get feedback from the instructor.
Lab: Work on 2 characters, get instructor feedback.
Homework: Finish 2 characters. Create renders (at least 6 per character).
Reading: Read all material posted on website and watch all videos.
SPENCER: 308-318, OSIPA: 48-59, HYPER: 64-77
- Week 11:** **FINAL CRITIQUE!!!** All work is due at the start of class. Miss this class and you will get an F for the quarter.