

The Art Institute of California – San Francisco

Course Syllabus

Course Number: CA560

Course Title: Graduate Animation Production: Modeling and Texturing Seminar

Class Meetings: Mondays from 6-10pm

Session/Year: Spring 2008

Instructor Name: Andrew Klein

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Website: <http://www.andrewklein.net/ai.html>

Instructor Availability Outside of Class: Fridays from 12-3pm, by appointment only

Graduate Animation Production

Course Description:

This course covers the development and integration of effects into an on-going project. Advanced techniques in production and production problems will be addressed.

Course Length: 11 Weeks

Contact Hours: 55 Hours

Lecture: 11 Hours

Lab: 44 Hours

Credit Values: 3 Credits

Course Goals : This advanced animation production class will focus on the use of 3D digital technologies in the creation of 3D animation end products; full screen video, TV commercial and movies with Maya, Zbrush, and other similar programs. The class will cover the process of computerized animation design and production. A thorough study covers all phases of animation production from layout, lighting, editing, composition to digital file video recording, etc

Course Competencies:

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

- Create highly efficient models for animation
- Be able to create blendshapes, clusters and other animation controllers.
- Create dynamic textures and shaders for characters and environments.
- Apply principles of lighting to rendering

Text(s):

Suggested texts :

Mental Ray for Maya, 3dsMax and XSI, by Boaz Livny, SYBEX, Wiley Publishing;

ISBN: 978-0-470-00854-6,

Polygonal Modeling: Basic and Advanced Techniques by Mario Russo, Wordware Publishing, 2006, ISBN: 1-59822-007-1. Suggested Price \$40.00 (new)

Digital Lighting & Painting, by Jeremy Birn, New Riders, New Riders;

ISBN: 1-56205-954-8

Advanced Maya Texturing and Lighting, by Lee Lanier, SYBEX, Wiley Publishing;

ISBN-13: 978-0-471-79404-2, ISBN-10: 0-471-79404X

Materials and Supplies: Storage Medium , Notebook, Sketchbook , Drawing supplies.

Estimated Homework Hours: 4-6 Hours

Technology Needed:

Hardware: PC with Windows (Mac as applicable), CD-R, DVD-R, or external harddrive, Wacom Tablet.

Software: Maya (Mental Ray), Photoshop/Gimp, Zbrush/Mudbox, CrazyBump, Headus

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:

Attendance and Participation	10%
Assignments and Exercises (Blogging)	50%
Mid-Term Project/Examination	15%
Final Project/Examination	25%

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.
- Late work receives a grade of zero.
- On-time projects may be redone with instructor approval.
- 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 recloseable 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:

The Art Institute of California, San Francisco is committed to providing students with qualifying disabilities equal opportunity to access the benefits, rights and privileges of college services, programs and activities in compliance with The Americans with Disabilities Act and Section 504 of the Rehabilitation Act of 1973. Students who believe they are in need of accommodation for disabilities should contact Jennifer Banta, Ph.D., Interim Disabilities Services Coordinator, at (415) 276-1074, 1170 Market St., Room 609.

Suggested Course Outline

- Week 1:** **Lecture: Character Modeling.** Discussion of the finer points of creating workable character topology for full bodies, heads, torsos and arms. Both human and non-human characters types will be discussed, plus the benefits of working with an ecoche approach. This will be done with a emphasis on making the mesh ready for usage in Zbrush.
Lab: We will discuss the proposed course workflow, an make changes if necessary. Creation of your animation blog. Every student will create an online blog to be linked to the student website outlaying your project goals for the course and for the entire animation. Each week will require weekly posting of image updates and written summaries of where you are in the process for critique by the instructor and fellow students. Every student will be required to comment at least once per week on every other student's blog.
Homework: Create blog, write a proposal on your blog of what you plan to accomplish in the next 11 weeks, with a timeline breakdown of what should be done, and when.
- Week 2:** **Lecture: Character Sculpting** We will discuss Zbrush 3.1, how high-res sculpting is done, the how to create usable normal and displacement maps from these models. Additional information will be provided on other software such as Mudbox. Other features of a "high-res first workflow" will be discussed such as Zbrush's retopo tools.
Lab and Homework: Post to your blog.
- Week 3:** **Lecture: Projection Painting** We will examine how you can use Zbrush's polypainting, Zapplink, Image Plane plugin and Projection master to aid in texture painting.
Lab: Produce facial animations samples.
Homework: Post to your blog.
- Week 4:** **Lecture: UVing, MipMapping, Normal Mapping** We'll take a look at Headus UVlayout's pelting tools, how to create UV sets, and when to tile textures. We'll discuss the creation of pyramid images, and several ways to produce normal maps.
Lab: Teacher will provide individual tutoring for students related to their projects. Group discussion
Homework: Post to your blog.
- Week 5:** **Mid-term review:** Come to class ready to show your progress thus far. 10 minute presentations each.
Lecture: Shading networks We'll look at Sampler Info node's many powers, the Surface luminance node, blend colors, layered shaders, textures, lightmaps (with special regard to sub-surface scattering), photon shaders, shadow shaders, the shading group, displacement shaders, contour shaders, multiply/divide, reverse, and anything else we can cram in before the end of class.
Lab: Teacher will provide individual tutoring for students related to their projects. Group discussion
Homework: Post to your blog.

- Week 6:** **Lecture: Environment Modeling and Texturing** Ideas for hard surface modeling will be covered with emphasis on the importance of the beveled edge and the mia_roundcorners. Texturing for environments will discuss Zbrush with emphasis on masking by cavity and alpha intensity. tiling textures, and more.
Lab: Continue work on your projects.
Homework: Post to your blog.
- Week 7:** **Lecture: Render Passes** Rendering your scenes in individual passes for Ambient Occlusion, shadows, reflections, and beauty will be discussed. We will also discuss how to match lights effectively to photos.
Lab: Render Passes
Homework:. Post to your blog.
- Week 8:** **Lecture: Shader Design – Mental Ray networks** We will examine several mental ray shaders including the Dielectric, SSS, MIA, and DGS, as well as the mental ray textures nodes with emphasis on how to create high-quality, efficient shader design.
Lab: experiment with shaders.
Homework: Post to your blog.
- Week 9:** **Lecture: Environment Lighting – GI, FG, AO, IBL, HDRI, (LOL, ROTFL, TTYL, etc...)** We will discuss various ways to render the effects scene by real-world environment lighting. Photos will be analyzed for their light contributions and simulated in 3d. We will discuss lighting for effect, attention, realism, and mood. A discussion of shadow types, and image based lighting will take place as well.
Lab: working with lights.
Homework: Post to your blog.
- Week 10:** **LAB TIME**
Homework: Post to your blog.
- Week 11:** **Lecture:** Final Presentation of Perpetual Project Progress, Purpose, and Porpoises.
Lab: Class show and discussion of assignments.
Homework: None

