

The Art Institute of California – San Francisco
Course Syllabus

Course Number: MA1134

Course Title: Principles of 3D Modeling

Class Meetings: Section A: Thursday from 1-5pm, room 401
Section B: Thursday from 1-5pm, room 401

Session/Year: Winter 2012

Instructor Name: Andrew Klein

Email Address: amklein@aia.edu

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

Principles of 3D Modeling

Course Description:

Through critical analysis, the student will apply basic design principles to the solution of visual problems using elements of 3D design. The student will conceptualize 3D coordinate systems, construct 3D models, and perform mathematical computations as they apply to geometric 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:

- Conceptualize 3D coordinate systems
 - Construct simple geometric shapes in X, Y, Z space using computer animation software.
 - Apply advanced knowledge of unity, variety, contrast, dominance, appropriateness, balance and harmony to 3D space.
- Construct 3D models and perform mathematical computations.
- Apply concepts of 2D design and integrate the added aspects of multidimensional space.

Course Prerequisite(s): FS122 Image Manipulation

Text (non-mandatory): Introducing Autodesk Maya 2012 (Autodesk Official Training Guides) by Dariush Derakshani, ISBN-13: 978-0470900215

Materials and Supplies: MANDATORY: Note taking supplies and an External USB or Firewire hard drive for routine weekly backups and transfers

****** Get your FREE 3-year license of Maya at www.students.autodesk.com as soon as you get home******

Estimated Homework Hours: 4-8 hr per week

Technology Needed: Computer Lab. Optional personal computer with Maya installed. Minimum 4GB of Ram and a capable graphics card. Hard drive for backup.

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 120 point scale via the provided rubrics you will receive with this syllabus.

Chair project	12 points
Toy project	12 points
Airplane project	30 points
Midterm Quiz	7 points
Attendance/Participation	11 points
Kleinymon Papercraft project	12 points
Final project	36 points

To view the complete grade breakdown, see: <http://andrewklein.net/bh/modeling.html>

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

- Week 1:** **Lecture:** Class procedures. Overview of 3D modeling. Exploring the Maya interface. Primitive objects, Changing preferences, Hierarchies, scene history.
Lab: Assignment 1: Create a chair out of primitives, based on provided reference material. Use primitive shapes and grouping. Due in week 2.
Homework: Finish lab assignment. Read and watch material on course website. Bring in a small toy or hand-held object for week 2's project.
- Week 2:** **Lecture:** Introduction to component editing. Hypergraph and Outliner in more detail. Naming objects. NURBS versus Polys. Duplicating, instancing, mirroring, extrusions, appending, splitting, merging, and other ways to add geometry after conversion to polymesh.
Lab: Assignment 2: Using an actual toy, build it using NURBS and/or Polys. Due in week 3.
Homework: Finish lab assignment. Read and watch material on website.
- Week 3:** **Lecture:** Box Modeling, Setting a project, using image planes, gridflow, edge looping, 5-point stars.
Lab: Setting up image planes. Assignment 3: Build an airplane from blueprints. Due in week 5.
Homework: Continue lab assignment. Read and watch material on website.
- Week 4:** **Lecture:** Edge Extrusion modeling. Combining objects. Normals.
Lab: Work on airplanes.

Homework: Finish airplanes. Read and watch material on website.

- Week 5:** **Lecture:** Midterm Critique. Due at the start of class.
Lab: Midterm Quiz
Homework: Bring reference material for final project: Creating a Character.
- Week 6:** **Lecture:** Basic UVing ideas/concepts. The UV texture editor, projection mapping, and UV editing tools.
Lab: Assignment 4: Use the Kleinymon Papercraft, generating UVs to match already created texture.
Homework: Finish lab assignment. Read and watch material on website. For extra credit, UV your airplane.
- Week 7:** **Lecture:** Starting our final project: Local Architecture
Lab: Modeling from Curves, using deformers.
Homework: Go out into the Bay area and take photographs of 1 local building from many angles. You will be tasked with creating an exact reproduction of that building for the final project. Bring in the photos for week 8 for acceptance or rejection from instructor. Otherwise use time to revise any previous projects.
- Week 8:** **Lecture:** Critique of project proposals, acceptance or rejection.
Lab: Final Project worktime
Homework: Continue on your final project.
- Week 9:** **Lab:** Final Project worktime
Homework: Continue on your final project.
- Week 10:** **Lab:** Final Project worktime
Homework: Continue on your final project.
- Week 11:** **Lecture:** Final Class Critique. Miss this class with prior notification to instructor and it will be impossible to pass the course.