COURSE SYNOPSIS

AEC 114, ARCHITECTURAL GRAPHICS

FALL, 2012

INSTRUCTOR: DOUG MADDEN

Instructor Office	Bldg 2, Rm 602, hours 3:00-4:00 pm Mon & Wed, 7:30-8:30 amTue & Thr
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Instructor Web Page	http://honolulu.hawaii.edu/~doug
Course Reference Material	AEC 114 at https://laulima.hawaii.edu/portal/

COURSE DESCRIPTION

This course provides an introduction to types of computer modeling and spatial representation and is designed to improve students' visualization skills. Three principal components: (1) computer architectural modeling in SketchUp® and pencil rendering using some of those models, (2) spatial visualization using visualization software and textbook exercises, and (3) freehand drawing of architectural subjects mostly off campus. Visualization exercises are interlaced with SketchUp® drawing throughout most of the course.

AEC 114 is the first course in graphics. It combines computer modeling, freehand drawing and rendering, and visualization work and is followed by the advanced 3D architectural modeling course (AEC 124), the residential planning and design course (AEC 123), and other courses in the AEC program that involve graphical conceptualization and representation. Rather than producing detailed architectural drawings as in AEC 120 and the working drawings courses (AEC 130 and 140), students solve graphical problems and produce exercise-type and presentational types of drawings designed to introduce specific drawing and rendering techniques and technologies that may be applied to a wide range of coursework that follows, improve personal interpretative and graphical communication skills, and develop conceptualization abilities.

STUDENT LEARNING OUTCOMES (SLO's)

Upon completion of the course, students should be able to:

1. Use the AutoCAD® software program to draw 2D orthographic, pictorial, sectional, and developed views from real-world objects, or from drawings of other types or differently oriented views.
2. Use descriptive geometry techniques to find and draw in AutoCAD® the true length, point view, or true shape of a line or plane from given views showing it skewed to all standard planes.
3. Visualize and demonstrate by drawing, sketching, or identifying a prescribed new view of an object.
4. Use the full range of tools in a computer 3D modeling program such as SketchUp® to create, modify, and manipulate 3D drawings of objects and to create fly-arounds, walk-throughs, or slideshows of fully rendered models.
5. Create proportionally correct, rendered, pencil sketches of real-world objects or scenes.
6. Roughly define the terms, concepts, and standards associated with the topics of the course.
7. Report to a workplace regularly and punctually, engage effectively and congenially with peers and supervisors, work from written as well as oral instructions, use assigned time efficiently for productive work, and meet production deadlines.
8. Demonstrate oral and written communication, computation, and problem-solving skills appropriate to the level of the coursework.

TEXTBOOKS AND SUPPLIES

Required textbook: *INTRODUCTION TO 3D SPATIAL VISUALIZATION: An Active Approach*, by Sorby

Reference texts:

1. *Drawing and Designing With Confidence: A Step-by-Step Guide* by Lin (Wiley)
2. *Graphics for Architecture* by Kevin Forseth
3. *Design Drawing,* Revised Ed. by Wm. Kirby Lockard
4. *Understanding Architecture Through Drawing* by Edwards

5. *A Guide to Drawing* by Mendelowitz
6. *The Natural Way to Draw* by Nicolaides

Supplies (you must have items 1 and 6 in order to participate in any freehand drawing class):

1. Masonite*; drawing board (clipboard), 18" x 18" and not larger
2. White sketch paper, 14" x 17" pad (red pad with wire binder from the HCC Bookstore)
3. Pencils – No. 2, HB, 2B, and 6B (these to start; possibly others later)
4. Hand-held pencil sharpener -- any type
5. White plastic eraser -- block type (not the stick type)
6. Lightweight, SMALL, flat-folding beach chair (or "sand chair")
7. Colored illustration board or matt board (toward end of course)
8. One ream of 8 1/2 x 11 or 11 x 17 paper (unless required in AEC 110 that you are taking)
9. One flash drive for storing, backing up, and transporting computer files

GRADING PLAN

The point system will be used. 500 will be the total possible points. Final grades will be determined by the number of points earned in the course as shown in the smaller table below.

ITEM	DETAILS	POINTS	WEIGHT
Drawings	28 drawings (28 of 29 assigned) x 10 points each.	280	56%
Quizzes	4 quizzes x 10 points each	40	8%
Attendance	30 classes x 2 points each class (1 pt for partial class)	60	12%
Professionalism	Based on rating sheet completed by instructor and student	20	4%
Final Exam	Drawing-type exam during the scheduled evaluation week	100	20%
		500	100%

451 – 500 pts	A
401 – 450 pts	B
351 – 400 pts	C
300 – 350 pts	D
0 – 299 pts	F

DRAWINGS:
Approximately 29 drawing assignments will be made during the semester. Drawing due dates will usually be given to you for each assignment. If not, the following applies: **except for freehand drawings that are due the same day they are assigned**, one-class drawings assigned on Tuesdays are due Thursday or Friday of the same week, and two-day drawings assigned on Tuesdays and one- or two-day drawings assigned on Thursdays are due Thursday or Friday of the next week. **Late drawings are accepted for grading no more than one week after they are due.** Late drawings are graded down. If you are absent from class on a Thursday when a drawing is due, you should either send it to school with someone else, or submit it on Friday. Due dates for later drawings will not be changed because of earlier absences. Graded drawings will be returned to you, and grades will be posted online (see "General" below) usually on Friday. Students must be present for freehand drawing and on-the-spot critiquing and scoring.

QUIZZES:
There will be 4 quizzes. A quiz may be given at any time during any class period – immediately after a lecture, at the beginning or end of a class, etc. There will be no make-up quizzes – none even later during the same class period. Quizzes will be given only to those students who are present.

ATTENDANCE:
Especially since this is a vocational-technical course designed to prepare students for employment in related work for which regular attendance is important, classroom attendance is required in this course. 2 points will be earned for attending each of 30 classes. 1 point will be earned for each partial class attended. Since lectures and demonstrations will be critical, there will be no make-up classes or make-up credit for non-attendance or partial attendance. Any materials, notes, or other items distributed during classes will be available later, however.

Attendance points are posted online (see "General" below). Since attendance points often make the difference between higher and lower final grades, and since attendance verifications are difficult to make long after classes have passed by, any question or request for review must be made within two class days (one week) of the posting of points for the class(es) in question.

More than six unexcused absences (here "excused" and "unexcused" apply) results in a failing grade in the course. In respect to this rule, excusable absences (as judged solely by the course instructor) require submission of a doctor's note, court appearance slip, or other official document

PROFESSIONALISM:
A rating sheet will be developed for assessing such things as adherence to the dress code (explained below), general demeanor, teamwork, interaction with others, resourcefulness, ability to meet deadlines, etc. This includes meeting with the instructor individually as requested and to discuss the rating.

FINAL EXAM:
The final exam will be comprehensive and entirely drawing-type. Part of the exam will be two mounted (and previously graded) freehand drawings. The exam will be given at the time shown at the end of the schedule that follows. Early exams will not be given. Do not plan to leave for the holidays until after the exam.

FINAL GRADES:
Final grades will be based on the total number of points earned. Since there must be "some" precise cutoffs between higher and lower grades, the following point ranges will be strictly adhered to. Points will never be added "after the fact" to enhance a total point score.

GENERAL:
Points earned will be posted online. To check on your progress, go to **https://laulima.hawaii.edu/portal/** and then to AEC 114 listed in the banner strip. Do remember to keep all coursework returned to you so that any discrepancies can be easily and fairly straightened out.

Final "I" grades will not be permitted except in cases of prolonged, continuous, and excused absences in the latter half of the course. Under no circumstances will an "I" grade be given when less than half of the coursework has been completed.

Final "N" grades will be given only in very rare and exceptional cases. An "N" will never be given simply to replace a grade that you would prefer not to receive.

STUDENTS WITH DISABILITIES

Qualified students with disabilities will receive appropriate accommodations in this course. Please speak with me after class or in my office. Please be prepared to provide a verification letter from the HCC Services for Students with Disabilities (SSD) Office.

CLASSROOM RULES OF CONDUCT

1. Class lab time is expected to be spent in lab work. Lab time is not free time. Attendance and concerted work on assignments are required. Work at home may be required in addition to work during lab times (work at home should not substitute for work during lab periods).
2. Cell phones must be turned OFF during class periods. Please tell frequent or likely callers to not call you during class hours. If you leave to use a cell phone, please do not come back. Anyone who is inclined to "accidentally" leave a cell phone turned on during a class should routinely not bring it to class.

REQUIRED AGREEMENT FORM

A separate agreement relating to downloading software, ensuring that work submitted has been done by the person whose name is shown, changing the appearance or functions of computer keys or buttons, etc. is required of all students taking AEC computer drawing classes.

DRESS CODE

All AEC courses are designed to prepare students for professional employment, and dress should reflect this. Appropriate dress influences classroom work, encourages a degree of seriousness, and contributes to a good learning environment. Bare feet and T-shirts with inappropriate messages are not permitted. Hats, tank top shirts, and single-strap flip flop-type slippers (open toed shoes and sandals are OK) are discouraged. Nobody needs to "dress up" for class, but students should dress "appropriately," as you would for employment where you need to meet with clients, vendors, contractors, supervisors, and others.

LAB USE

AEC labs are open until 4:15 pm Monday through Thursday – and Friday if an instructor is present. Labs are closed on weekends. Students will occasionally be given permission to use labs without an instructor present, but it should be infrequent and for special reasons such as prolonged prior absence or final

completion of a semester-long project. Students are welcome to use the labs when they are free. Students wanting to use a lab during a class in which they are not enrolled must audit the class. Students are responsible for keeping the labs and equipment secure.

For security and equipment maintenance reasons, students are not permitted to use computers other than those they use during class time.

TENTATIVE SCHEDULE

DATE	DAY	DWG	SKETCHUP® TOPIC	FREEHAND DRAWING TOPIC	VISUALIZATION
Aug 21	Tue		Introduction to the course		
		1	The screen; basic operations; lines, zoom, pan, push-pull, etc.		
23	Thr	2		Trees: struct. & foliage (in class)	
28	Tue	3	Basic shapes (cont'd); windows		
30	Thr	4		Trees (cont'd)	
Sep 4	Tue	5			Isometrics
6	Thr	6		Small architectural structures	
11	Tue	7	Shapes manipulation		
13	Thr		Continue shapes manipulation; display settings		
18	Tue	8			Orthographics
20	Thr	9		Building elevations	
25	Tue	10	Roofs; dormers		
27	Thr	11			Flat patterns
Oct 2	Tue	12		Building perspectives (1)	
4	Thr	13	Rotations		
9	Tue	14			Rotations (1)
11	Thr	15	Hiding and reversing faces		
16	Tue	16		Building perspectives (2)	
18	Thr	17			Rotations (2)
23	Tue	18	Arrays; painting; shadows		
25	Thr	19	Scaling (tentative)		
30	Tue	20	Components; grouping; sections		
Nov 1	Thr	21	Slideshows, animations		
6	Tue		Election Day – no class		
8	Thr	22		Building perspectives (3)	
AUTOCAD® TOPIC					
13	Tue	23	Introduction to descriptive geometry: exercise		
15	Thr	24	Descriptive geometry: true lengths and point views		
20	Tue	25	Descriptive geometry: edge views and true shapes		
22	Thr		Holiday (Thanksgiving) – no class		
27	Tue	26	Descriptive geometry: other applications		
29	Thr	27	Skewed cutting planes		
Dec 4	Tue	28			
6	Thr	29			
11	Tue		**FINAL EXAM**		