

COURSE SYNOPSIS

AEC 110, BASIC AUTOCAD®

FALL, 2012

INSTRUCTOR: DOUG MADDEN

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| INSTRUCTOR OFFICE | Building 2, Room 602, 3:00 – 4:00 pm Mon & Wed; 7:30 – 8:30 am Tue & Thr |
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COURSE DESCRIPTION

This is a foundation AutoCAD 2012 course in the Architectural, Engineering and CAD Technologies (AEC) program. Basic commands and operations from 2D drawing, editing, and creating solid models. 2D drawing, text, dimensions, blocks, hatching, external references, sharing data, 3D drawing, plotting, and more.

STUDENT LEARNING OUTCOMES (SLO's)

Upon completion of the course, the student will be able to...

1. Use the AutoCAD® software program to create drawings from scratch and to modify, manipulate, copy, delete, save, and plot drawings.
2. Use the full range of AutoCAD® commands and options, use the keyboard, toolbar, and menu interfaces, and employ shortcuts and time-saving strategies to operate the program at a level of efficiency acceptable for employment as a CAD technician.
3. Create, render, and manipulate 3D AutoCAD® drawings and convert 2D drawings to 3D drawings.
4. Roughly define the terms, concepts, and standards associated with the topics of the course.
5. 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.
6. Demonstrate oral and written communication, computation, and problem-solving skills appropriate to the level of the coursework.

TEXTBOOK AND SUPPLIES

Textbook: None this semester. There will be numerous handouts at almost all classes.

Supplies:

1. One ream of 8 1/2 x 11 paper (donated for general use rather than personal use)
2. Flash drive (minimum 1 gb) for backing up and transporting computer files.
3. A 3-ring binder for keeping the handouts organized is suggested.

TENTATIVE GRADING PLAN

The point system will be used. 500 will be the total possible points.

| ITEM | DETAILS | POINTS | WEIGHT |
|-----------------|---|--------|--------|
| Drawings | 26 drawings (26 of 27 assigned) x 10 points each | 260 | 52% |
| Mid-Term Exam | Drawing-type exam during one class period | 60 | 12% |
| Attendance | 30 classes x 2 points each class (1 pt for partial class attended) | 60 | 12% |
| Professionalism | Based on a rating sheet completed by each student and negotiated individually with the instructor . | 20 | 4% |
| Final Exam | Drawing-type exam during the scheduled evaluation week | 100 | 20% |
| | | 500 | 100% |

If at the end of the course you score within five points of a higher grade, you have the opportunity to earn "post-final bonus points." Any combination of the following post-final points will be available:

- 1 pt. for no late submissions.

- 1 pt. for each letter grade on the final exam that is at or above the higher grade you are seeking (e.g., you are seeking a higher grade of "B" and your final exam score was in the 80's = 1 point; or you are seeking a "B" and your final exam score was in the 90's = 2 points).
- 1 pt. for having no more than one absence and two tardies (and no other attendance bonus)
- 2 pts. for having perfect attendance and no more than one tardiness (and no other attendance bonus).
- 3 pts. for having submitted and having received credit for all drawing assignments.

Also, if you miss a higher grade by only one point, the one point will be awarded to compensate for the subjectiveness of drawing scores. The post-final points cannot be applied prior to calculation of your final grade, and you must earn the number of points you need, or none will be awarded. If, for example, you need 4 points, you will be awarded 4 points or none.

Points earned will be posted online. To check on your progress, go to <https://lailima.hawaii.edu/portal/> and then to AEC 81 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.

DRAWINGS:

For most of the approximate 26 (26 out of 27) drawings assigned, due dates will be given for each assignment. If not, the following applies: one-class drawings assigned on Tuesdays are due Thursday or Friday of the same week, and two-day drawings assigned on Wednesday and one- or two-day drawings assigned on Thursday 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 absences.

Another number of the approximate 26 drawings (actual number undecided) will be due at the end of the class period they are assigned, and students will be required to complete them entirely on their own. Late drawings will not be accepted.

All graded drawings will be returned to you, and grades will be posted online (see "General" below) usually on Friday.

MID-TERM EXAM:

The mid-term exam will be comprehensive, entirely drawing-type, and timed to class length. It will be given at the time shown in the schedule that follows.

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 each class attended from beginning to end. 1 point will be earned for each partial class attended (any tardiness will constitute partial attendance). 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 used for assessing such things as adherence to the dress code (explained below), general demeanor, teamwork, interaction with others, resourcefulness, ability to meet deadlines, etc.

FINAL EXAM:

The final exam will be comprehensive and entirely drawing-type. It 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 grade cutoffs, the following point ranges will be strictly adhered to. Points will never be added "after the fact" to enhance a total point score.

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

GENERAL:

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. No drawing is permitted during lecture periods.
2. 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).
3. Cell phones must be turned OFF during lecture and lab periods. Leaving a class during a lecture to use a cell phone is not permitted. If you leave, 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, changing the appearance or functions of a computer, 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-Thursday and available for anyone's use when classes are not meeting in the labs. 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 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, and for security reasons, students are not permitted to use computers other than those they use during class time.

TENTATIVE SCHEDULE

| DATE | DAY | DRWG | TOPIC/ACTIVITY |
|--------|-----|------|--|
| Aug 21 | Tue | | ORIENTATION TO THE AEC PROGRAM The program, software, jobs, the AEC Club, community service requirement, etc. INTRO TO THE COURSE AND THE AUTOCAD INTERFACE Intro, knowledge survey; absolute coordinates, LINE, ZOOM, PAN, etc |
| 23 | Thr | 1 | Relative coordinates, direct distance entry |
| 28 | Tue | 2 | DRAWING AIDS AND BASIC OPERATIONS Snap and grid, UNITS, CIRCLE, ERASE, RECTANGLE |
| 30 | Thr | 3 | Inquiry, LIMITS, templates, TRIM, EXTEND, MULTILINE |
| Sep 4 | Tue | | <i>Meet the AEC Advisory Committee event (tentative)</i> |
| 6 | Thr | 4 | Object snap, OFFSET, BREAK, JOIN |

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| 11 | Tue | 5 | LAYERS, DISPLAY COMMANDS, AND MISC. Layers, object colors, linetypes, and lineweights; filters |
| 13 | Thr | 6 | FILLET, CHAMFER, ZOOM, PAN, named views |
| 18 | Tue | 7 | MORE MODIFY AND CONSTRUCTION OPERATIONS MOVE, COPY, MIRROR, POLYGON |
| 20 | Thr | 8 | Rectangular and polar ARRAY |
| 25 | Tue | 9 | ROTATE, osnap tracking, temporary tracking |
| 27 | Thr | 10 | STRETCH, grips, XLINE, RAY |
| Oct 2 | Tue | 11 | MORE DRAW OPERATIONS ARC, ELLIPSE, elliptical arc |
| 4 | Thr | 12 | LAYOUTS AND VIEWPORTS Layouts, viewports (create and control), tabs |
| 9 | Tue | | MID-TERM EXAM |
| 11 | Thr | 13 | TEXT AND TABLES DTEXT; MTEXT; text edit, action recording |
| 16 | Tue | 14 | Annotative text – scale, visibility, etc. |
| 18 | Thr | 15 | Spell check, CHSPACE, MATCH PROP, SCALE; TABLE |
| 23 | Tue | 16 | PLOT STYLES AND UTILITIES Plot style, page setup, STB and CTB styles, drwg time, etc. |
| 25 | Thr | 17 | DIMENSIONS Dimension style; linear and ordinate dimensions; quick dims |
| 30 | Tue | 18 | Angular and radial dimensions, MULTILEADER, editing, importing styles, script files |
| Nov 1 | Thr | 19 | PARAMETRICS Geometric and dimensional constraints; parametrics manager |
| 6 | Tue | | Election Day – no class |
| 8 | Thr | 20 | HATCH Annotation scaling, HATCH, gradient, copying and editing |
| 13 | Tue | 21 | POLYLINES POLYLINE; edit; FILL; SPLINE; POINT; MEASURE; DIVIDE |
| 15 | Thr | 22 | BLOCKS Groups; blocks; cut and paste; block attributes |
| 20 | Tue | 23 | Dynamic blocks; chain actions; CUTCLIP and COPYCLIP |
| 22 | Thr | | Thanksgiving – no class |
| 27 | Tue | 24 | EXTERNAL REFERENCES X-refs; DesignCenter; extracting data; tool palettes |
| 29 | Thr | 25 | TRANSITIONING TO 3D Wireframes; changing UCS; regions; 2D to 3D |
| Dec 3 | Tue | 26 | SOLID MODELS 3D workspace; boxes and wedges; dynamic UCS; SUBTRACT; 3D chamfers and fillets; CYLINDER |
| 5 | Thr | 27 | POLYSOLID; CONE; TORUS; sections; EXTRUDE, ALIGN, ROTATE, REVOLVE, etc. (Two classes if time available) |
| 11 | Tue | | FINAL EXAM |