

UNIVERSITY OF ALASKA ANCHORAGE

ARCHITECTURAL ENGINEERING TECHNOLOGY

Course Syllabus

AET A181 - Intermediate CADD for Building Construction

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M/R – 11:00, F - 10

other times by appointment or good timing

Course Identification

AET - A181 **Intermediate CADD for Building Construction** (4 credits)

Course Description

Develops intermediate level CADD (computer-aided design and drafting) skills for architectural, civil, structural, mechanical, and electrical drawings used in building construction.

Course Prerequisite

AET/CM - A101 and AET/CM - A102.

Course Design

Introduce techniques for improving construction drawings output using CADD. The class includes an emphasis on the construction drawings produced for a building project and the software tools used in their preparation.

Time of Student Involvement

Lecture: 30 hours

Lab: 60 hours

Outside: 90 hours min.

Total time: 180 hours min.

Suggested Textbooks

Omura, G. (2012). *Mastering AutoCAD 2013*. San Francisco, CA: SYBEX.

Notes: There is extensive reference information in many possible texts. Using the index to access the command nouns is a good introduction to that information. The instructor would be glad to offer an opinion on any text, if he has one.

Computer Requirements

For those students taking the class on-line, or working outside of the labs, the minimum computer requirements are:

Intel® Core i7 2600 GHz processor

16GB RAM

500 MB Hard Drive Space

Keyboard and three button mouse

Microsoft 7 operating system

Microsoft Internet Explorer 6.0 or higher, Mozilla Firefox or Chrome browsers

Dial up internet connection, 29.8 Kbps minimum. A high speed connection is recommended

An e-mail account that you manage regularly. The university establishes an account for every registered student and this will be the default account address for this class.

A headphone with microphone system (approximately \$8-15) is required for participation in the daily Collaborate presentations.

There are many combinations superior to this which will increase the speed of communication. This combination will work; other combinations of CPU, operating system, internet browser, and internet connection may work. Your specific combination should be tested through the UAA Blackboard site before the class begins to avoid missing "class time". All of the computers in the AET labs exceed the requirements for this class.

An online testing of computer compatibility for Blackboard is found at:
<http://technology.uaa.alaska.edu/blackboard/>

Compatibility for Collaborate, along with speaker and microphone tests, is found at:
<http://www.uaa.alaska.edu/elive/>

Computer problems, access questions, Collaborate and Blackboard questions and their solutions can be addressed with the UAA Information Technology(IT) Call Center, Monday thru Saturday during extended business hours, at 907-786-4646 or Toll Free 877-633-3888.

Students will also be given access to the CDT Documents site within Blackboard. This is a common site for all classes within the AET and CM programs. The site contains sets of drawings, informational documentation, and other files that are commonly used across many classes. The site will appear on the student's Blackboard class list. This course relies heavily on Blackboard, Collaborate, and email.

Class Tools

Student work is accomplished using a variety of software tools. Software requirements include: current versions of Microsoft Word document processor, Excel spreadsheet and Adobe Acrobat, available as a download from the UAA Information Technology webpage. Depending upon the specific class, the graphics software requirements are: Autodesk AutoCAD, Autodesk Civil 3D, Autodesk 3D Studio, Revit Architecture, Revit Structural, and Revit MEP. These are expensive products to buy individually. They are available in the UAA labs for the AET program and the satellite labs across the UAA system. The packages are also available as time-limited free downloads from autodesk.com

Communication between students and the instructor is through the internet access to Black Board class announcements, Collaborate sessions, the UAA email portal,

phone/voice mail, 'snail' mail, and catching me in my office for a little face-to-face.

Equipment and Supplies

Required: Removable memory storage of at least 1GB

Student work is accomplished using internet access, Microsoft Word document processor and Excel spreadsheet, Adobe Acrobat, current releases of Autodesk AutoCAD, Autodesk REVIT Architecture, Autodesk Design Review, and the UAA email portal.

A lab fee of \$35.00 is paid at registration. This includes materials and services used and/or consumed by the student and helps to defer the maintenance cost of the computer systems and printers.

Email Policies

I get a great deal of email from many different sources. To insure that I understand who the email is from and its context please follow these protocols.

The subject line should include the course ID and the name of the project or assignment you are addressing. i.e. AET A102 Project 2

The body of the email should be in complete sentences. I'm old and out of touch, so I do not understand instant messaging/texting abbreviations, emotographs, and slang. Hint: this is not texting a friend, this is a professional communication.

Your first and last name should be used as a signature.

The instructor will reply to all student emails within twenty-four hours, Monday to Friday. That reply may be in the form of grouping together multiple emails from the same person or it may be an email sent to all students with personally identifiable content removed.

Living in Collaborate

For on-line and hybrid classes, all scheduled presentations will be done through the Collaborate presence, available through the class Blackboard site. If your Collaborate session crashes, try immediately to log back on. The participants section on my screen will show that you went away, not why. If the Collaborate session crashes for everyone, I know that too, because it happened to me. I typically send an email out quickly to reassure the nervous and indicate when (if I know) the session will be continued. I also tend to place an announcement on the class Blackboard site for those not present for the session. It is my intent to record every Collaborate session, but I do not guarantee, to record and archive each Collaborate session for future review. You should not rely on these recordings. It is a courtesy to record the sessions, but not a right to expect them. Recordings have been lost for many reasons out of my control. A session will not be repeated

because the failure is in the recording or archiving.

The Collaborate sessions are live and for everyone. Etiquette means that I will not answer the phone or the door during a session. I generally turn the phone volume down so I will not be disturbed by a ringing phone.

Naming conventions for documents

All projects, film reviews and Field projects will be submitted electronically by email. The file formats that I can read are Rich Text format (nnn.rtf), Microsoft Word (nnn.doc and nnn.docx) and Excel (nnn.xls and nnn.xlsx). Other formats will be returned unopened and you will be asked to reformat and resubmit the file.

For every file that is submitted, name the file with your first and last name and the name of the assignment e.g. Brian Bennett-Film review 1.docx

Spaces, hyphens, and Underscores are good separators in file naming protocols. Do NOT use parenthesis, periods, quotes, slashes, verticals, or asterisks () . “, / \ | or * as these have special meaning to computers and you will not like their meaning. Other punctuation marks are discouraged.

The APA style guide will be the basis for formatting all documents, citations, and references of submitted text based work.

Instructional Strategies

The strategies for the course involve two of three typical situations: (a) Integrated lecture and demonstration by the instructor on computer systems, white/black boards, Collaborate and other media. (b) For Face-to-Face classes the 'Laboratory' work of the student is done with the roaming support of the instructor to each individual. (c) For distance education classes the use of Elluminate Live!© (Collaborate) tools for discussion and presentation of materials. The headphones and microphones allow questions and interaction between all who attend. The energy levels will be drained if the instructor is the only one talking, making a case, presenting a point of view or anecdote, or asking questions.

Attendance

With the nature of the course, attendance and participation is a prime consideration. In (more than I would like to count) years of teaching experience the instructor has observed a correlation between participation and performance. Students are allowed absences equal to ten percent of the total number of classes without penalty. For each succeeding absence the instructor reserves the right of deducting three percent from the cumulative grade. It is considered an absence when a student is not present to sign the attendance sheet at the beginning of the class or not present near the end of class for the instructor check of the attendance sheet.

Prior knowledge will allow the instructor to get materials and assignments to the student before the absence, but will not change the fact of the absence. Absence will not change the due date for assignments or exams.

Attendance for on-line classes takes a different meaning and form than Face-to-Face class meetings. The on-line presentation of the course only alters the interpretation of “attendance”, not the concept of “participation”. Students are encouraged to attend the scheduled Collaborate presentations.

The student, or someone else, has paid tuition and fees for the right to attend the class, or not, until the end of the class. The instructor will not academically drop the student for lack of attendance or performance. It is the responsibility of the student to drop the class in a timely and appropriate manner.

Special Needs

The computer system configuration, and AutoCAD in particular, is extremely flexible and customizable to a specific user profile. Background colors, image colors, image size, mouse controls, and many other features can be adjusted to adapt for many requirements. Students are encouraged to discuss individual situations and needs as early as possible with the instructor so that accommodations can be attempted. Conversations can be initiated personally, by letter, telephone, or email and will be held in confidence. Prior knowledge by the instructor can ease introduction to the setting and promote success in the course. Other questions of access and adaptive technology should be directed to Disability Support Services (DSS) at 907-786-4530 or 907-786-4536 (TTY).

Requests for reasons of personal faith should be discussed early and will be honored without penalty.

Communication

If you do not like something that happens in class, let me know immediately. If I do not know about something, I cannot change it, fix it, explain it, or apologize for it. Please do not wait until the course evaluation for three reasons. The evaluations are anonymous, so I do not know who was in need. The evaluations are after the fact, so it is too late to do anything for that person. The evaluations are out of context and I may not know, understand, or appreciate what you are talking about.

Changes to the Syllabus

Changes may be made to this syllabus at any time, throughout the term, to any part of this syllabus. All students attending class will be dutifully notified in advance of any change affecting their assignments or tests.

Evaluation

‘The inference of knowledge by the observation of behavior.’ Stice

Grades must be earned through hard work. A ‘good grade’ is not deserved because a student has completed the assignment(s). In order for work to receive a high grade, it must be complete in content, professional in presentation, and imaginative.

The instructor will be glad to review any assignment, time permitting, before it is due. An assignment, presented to the instructor, will be reviewed with the same criteria used for evaluation and then returned to the student for their use.

‘Those that do well, take seriously the task of educating me.’ T. Roethke

Assignments

Six (6) projects at 100 points each.

1. 3Dimensional house (uses the 2D house plan from AET/CM- A101)
2. Seated beam connection
3. Stressed frame tent
4. OAS structural framing
5. Dover, DE Cupola
6. REVIT Getting Started package

Grading criteria for each project will include:

ACCURACY: 30 points Accurate production of the project in accordance with the written and oral project instructions. Following class and industry standards for organization and presentation.

PROBLEM SOLVING: 25 points Application of knowledge.

COMPLETION: 25 points Project completed on time. Proper format is observed.

PRESENTATION: 20 Points for organization and ‘readability’.

Tests and Exams

There will be three (3) tests at 100 points each, offered during the course. These will include short essay/multiple choice tests and practical performance. Legitimate test material can come from the discussions, reading, notes and handouts, and projects. Note: Only one test may be retaken, only one time. The student should choose wisely. Should a student wish to take a make-up test, they must notify the instructor on the day the original graded test is handed back. Day and time will be coordinated with the instructor. If the original test is missed, students are eligible only for the make-up test. Late tests count as the make-up. The scope of the coverage will be the same, but the make-up test will be different.

Thoughts on late work

“It is not our abilities that define who we are, it is our choices.” Dumbledore in Harry Potter and the Chamber of Secrets. Assignments or tests turned in late cannot be excellent. There are many variables; reasons why it's late and lengths of time. I shall try to be understanding and generous, but I have to be honorable to the subject and other students, so there are consequences. Something is better than nothing and late is better than never, with one exception; no material for assessment will be accepted after the last UAA scheduled date of the class.

Course Notebook

For Face-to-Face classes, the Course Notebook will be checked four times throughout the class. 25 points may be earned for each notebook check for a total of 100 points. The cover and spine should include the: Department, Course name and number, and Student Name.

The Title page should include: University name, College name, Department, Semester and year, Course name and number, and Student name.

The body of the Course Notebook should contain, tabbed and titled divisions for appropriate surfaces, solids, and modifications.

Each division should contain all of the class material including; handouts, lecture notes, projects. Tests, sketches, and any other reference material or information compiled by the student may be organized as he/she sees fit. Notebooks with creative art/graphics and a professional presentation will earn maximum points.

For classes meeting on-line, it is still recommended that the student maintain a Course Notebook, even if it is not turned in for assessment. A notebook tends to help organize content and becomes a central source for progression through the class, time management, storage and recovery of material is submitted for review, a reference for future work outside of this particular class.

Final Grades

Grades will be determined by a combination of points earned in the course. Grade requirements are as follows:

Grade	(%)	Description
A	(≥93%)	Indicates comprehensive mastery of required work
B	(≥85%)	Indicate high level of performance in meeting course requirements
C	(≥78%)	Indicates satisfactory level of performance
D	(≥70%)	Minimal passing performance and results
F	(<70%)	Indicate unsatisfactory of performance and result

NOTE: All grades are determined by competency based criteria evaluation. Students are evaluated on individual performances, not graded in comparison with other students or a normal curve distribution. An "A" grade signifies that a student has achieved both comprehensive mastery of required work and the minimum

performance required for professional level competency as determined by industry standards for entry level technical positions.

Other grades listed in the catalog will be used at the discretion of the instructor, determined by individual situations and circumstance. It is suggested that all assignments and projects be retained through the course in case questions arise. All discussions of grades, from projects or assignments, should be done outside of class, by appointment. The instructor will **not** academically drop students for failing to attend the class. The student has paid for the right to attend the class, but it is their option whether to exercise that right. In all matters, it is **the responsibility of the student to properly drop the class** from their schedule. Faculty may initiate course withdrawal for non-attendance or disruptive behavior pursuant to the current UAA polity and guidelines. See the University Academic Catalog.

Student outcomes.

- Demonstrate the basic 3D modeling concepts in the preparation of drawings
- Demonstrate the basic surface modeling concepts in the preparation of different examples of surface models
- Produce 3D solid models of building construction projects.

Student Course Evaluation

The IDEA student course evaluation will be available through the Blackboard site for the course during the final week of the class. The responses are tallied independently to assure anonymity. The intent is to improve this course, it is important, and students are encouraged to complete the survey outside of the class.

Ethics

“In accordance with professional practice for right conduct or practice.” Miriam-Webster

It is easy to use the work of someone else. The computer makes it easy to copy the files(s), downloaded from the web or otherwise, of the work done by someone else. It is easy to catch only one attempt of eventually many tries. Student conduct, as expressed in various UAA formal documents, is expected to be met with respect to academic integrity and non-academic misconduct. The Dean of Student Affairs will be notified for his review and determination at each and every instance or suspicion. This instructor will suggest a fail grade be entered and letters of inappropriate conduct be placed in the permanent file of ALL students involved. Essentially the line in the sand is: DO NOT give your electronic drawing files to anyone for any reason. You do not know how they will be used or abused, but you will be responsible.

It is far more convincing and impressive to find and acknowledge the existence of

authoritative figures that agree with or support your point of view. The process is commonly called quoting, citing, summarizing, paraphrasing, and referencing. To be effective and acknowledged, it must be formally done. It is nearly always suspicious when yours is the only opinion expressed.

Professional practice goes beyond criminal behavior to include participation and presentation. The instructor suggests reading the article "Going Pro", available through the Class Blackboard site.

Please complete the acknowledgement below and return only this page to the instructor within the first week of the semester. The page can be cut/pasted into an email or printed and delivered. Ten points for the completion and return of the document on-time.

I, _____ [printed name] agree to the following:

I have received and read the course syllabus for AET/CM A181.

I have daily access to computer(s) and the Internet with capabilities for active participation in the class.

I understand that this class has components that require students who are interested in active, self-directed, self-motivated learning.

I agree that the time-flexibility that will allow me to complete activities, assignment, and tests at time that best suit my daily and weekly schedule and learning preferences will also demand that I plan and manage my time efficiently.

I take responsibility to actively use the on-line material and to manage my time so that I complete and submit assignments, projects, and tests before posted deadlines.

I accept that material necessary for successful completion of projects, assignments, and test will come from a variety of sources, some self-discovered.

I understand that, depending on my skill and experience level, the time required in utilizing the on-line materials will vary.

I am willing to spend the time required, perhaps more or less than others, to initially familiarize myself with the on-line course environment as well as complete the requirements of the class.

I understand that it is my responsibility to use the on-line course Blackboard site, its contents, and the Collaborate presentations regularly, in order to stay informed regarding course announcements, assignments, projects, tests and due dates.

Signature: _____ Date: _____

"The Pace" AET A181 Intermediate CADD for Buildig Construction in 5 weeks

Day	Topic	Omura	Day	Topic	Omura	Day	Topic	Omura	Day	Topic	Omura	Day	Topic
1 3/31	UCS 2D Wire Frame 3D Wire Frame 3D Orbit Elevation Thickness: Line, Circle, Arc, Pline 3D Point - X, Y, Z Hide 3D Polyline Ribbon MoCoRo Present Project 1-3D House		5 4/7	Edit Solids Revolve-Solid Extrude Surface Align Objects UCS - ZA Sweep 2D and 3D Align Separate Press/Pull 3D Scale Lofting Draw Bolt & Nut		9 4/14	Convst to Surface Convst to Solid Project 3 due - Tent Present Project 4 - OAS Column		13 4/21	Explode Imprint Dynamic Block Parametric Geometry Parametric Dimensions Action Recorder Dynamic block stove handout Six panel door w/ constraints Draw upper cornice/Arch openings		17 4/28	Present Project 6 - REVIT REVIT GUI Intro Getting Startede Walls
2 4/1	X, Y, Z Point Filters 3D Face Visual Styles Fill <On, Off> UCS - Rotation of Axis Grips, multi-function/Properties 3D Polyline 3D OSNAP Center/Nearest of Face 3D Move Region Boundary 3D Orbit Continuous Viewports in PS Viewpoint Viewports in MS Push/Pull Draw Tapered Box xxx.dwt from A101/insert nnn.dwg Creating nnn.dwf and email		6 4/8	Slice Taper Fillet Chamfer Shell Tapering Offset DVIEW ViewRes Project 2 due - Seated Beam Test Draw geometry, column, plate, & cap		10 4/15	Attributes Data Extraction Fields X-Ref: Hub, Wheel, Axel		14 4/22	Helix Flatten Flatshot Mass of Solid NURBS curves Cal Mass of Solid NURBS curves Draw lower cornice Draw roof		18 4/29	Windows Doors Curtain Walls
3 4/2	3D Rotate Project 1 due - 3D House Present Project 2 - Seated Beam Garage Door		7 4/9	Edge Surf Ruled Surf Tabulated Surf Revolved Surf 3D Mesh Surftab1-Surftab2 Present Project 3 - Tent Draw Beam Draw Connectors		11 4/16	Wipeout Explode Imprint Annotated Text & Dimensions Styles Vport Scale Draw Brace Draw Gusset Plate		15 4/23	PolyMesh Surfaces Tessellation Splitting Patch Crease Convert to Surface/Solid Subobject Filters and Gizmos Smoothing Drawing the Cup and Mouse		19 4/30	Roofs Floor Slabs Topology
4 4/3	3D Array 3D Mirror Box-Solid Sphere-Solid Cylinder-Solid Pyramid-Solid Wedge-Solid Cone-Solid Torus-Solid Grips: object conditional Boolean-Union Boolean-Subtract Boolean-Intersection 3D Align Steering wheel Current V.Port Freeze Annotation scale/dimension Draw Beam profile		8 4/10	Offseting Thicken Separate Delete Face/Surface Blend Offset Solid Dview Setvar: Delobj Draw chair		12 4/17	Hidden Lines/Edge Dview Viewports in MS Test Project 4 due - OAS Column Present Project 5 - Cupola Draw geometry Draw pillar		16 4/24	Project 5 due - Cupola Projection Theory		20 5/1	Rendering Project 6 due - REVIT Test

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