CE 1252 - Computer Tools- AutoCAD Course Syllabus-Sec 001

Fall 2017

Instructor: Gautam Raghavendra Eapi, Ph.D. **Lecture:** Tu 10:00 AM – 10:50 AM PKH 107

Office: Nedderman Hall (NH) B25 **Lab:** NH 239

Phone: 817-272-5646 (NH B25) Sec 011 Tu 1:00 PM – 2:50 PM Email: gautam.eapi@uta.edu Sec 012 Tu 3:00 PM – 4:50 PM

Office Hours (NH B25 / NH239): Mon & Wed 10:00 am - 12:00 pm and 4:00 pm - 5:00 pm

or by Appointment

Graduate Teaching Assistant (GTA):

Omid Habibzadeh Bigdarvish Office Hours: Mon 3 pm to 6 pm (NH 243/NH 239) Name:

Email: omid.habibzadehbigda@mavs.uta.edu

Description of Course Content: Introduction to computer aided design, using AutoCAD. Creation of precise two-dimensional engineering drawings and solid models.

Requisites: Grade of C or better in MATH 1421 - Calculus I or concurrent enrollment.

Specific Outcomes of Instruction:

Student will be able to:

- Create, complete, and interpret simple Engineering drawings manually
- Create, complete, and interpret simple Engineering drawings using AutoCAD

Student Outcomes Addressed:

- (a) An ability to apply knowledge of mathematics, science, and engineering (covered implicitly)
- (k) An ability to use the techniques, skills and modern engineering tools necessary for engineering practice (tested implicitly)

Optional Textbook and Equipment:

1) **BEGINNING AutoCAD 2015 (or most recent edition),** Cheryl R. Shrock;

ISBN: 978-0-8311-3497-6

2) ADVANCED AutoCAD 2015 (or most recent edition), Cheryl R. Shrock;

ISBN: 978-0-8311-3499-0

3) A list of required drawing equipment will be provided separately.

Techniques, Skills, and Modern Engineering Tools Used in this Course: The engineering software tools AutoCAD 2017 (or 2016 or 2015) will be introduced and utilized.

Policies: Normally, the class will be conducted in accordance with the policies given below. However, it is impossible to anticipate every possible circumstance. The instructor reserves the right to modify the given policies or to deviate from them in unforeseen or unusual circumstances. If there is a policy that you anticipate will affect you in a way that seems unfair, please bring it to the attention of the instructor before the end of the second week of class. After that, the reason for a student initiated change in policy must be compelling.

Attendance Policy: Regular and punctual attendance is expected of students enrolled in this class. Absences and tardiness may affect a student's grade. The student is responsible for determining what was covered during missed classes.

Drop Policy: Students may drop or swap (adding and dropping a class concurrently) classes through selfservice in MvMay from the beginning of the registration period through the late registration period. After the late registration period, students must see their academic advisor to drop a class or withdraw. Undeclared students must see an advisor in the University Advising Center. Drops can continue through a point twothirds of the way through the term or session. It is the student's responsibility to officially withdraw if they do not plan to attend after registering. Students will not be automatically dropped for non-attendance. Repayment of certain types of financial aid administered through the University may be required as the

result of dropping classes or withdrawing. For more information, contact the Office of Financial Aid and Scholarships (http://wweb.uta.edu/aao/fao/).

Assignments: Assignments will be given in lab sections. Unless a different specific due date is given in class or on the class website, lab assignments are due at the beginning of the following lab class.

Lab assignments are obtained and submitted electronically. Directions for obtaining and submitting the assignments are provided in a separate document. Obtaining an assignment is any other manner is considered academic misconduct and, when discovered, will be dealt with as such.

Major Assignments and Examinations: This class has no major assignments. There will be two lab examinations. The dates of the examinations are given below and on the class website. There is always a small chance that a midterm examination will be rescheduled. Notice of such a change will be provided as soon as possible.

Lab Exams		
Midterm	Oct 10	
Final	Nov 28	

Make-up Examinations: Makeup lecture examinations are not normally given unless required by UTA policy. For university authorized absences, the student is required to follow the university policy as described at: http://wweb.uta.edu/catalog/content/general/academic regulations.aspx#9.

If an examination is missed as a result of an illness, the following policy applies. It is the responsibility of the student to provide acceptable, written documentation from a recognized medical professional stating that the health of the student or his classmates would have been jeopardized by the student's attendance at the examination. The documentation must be presented within one week of the student's return to class. For excused absences, unless a makeup examination is required by university policy, the score on the relevant portion of the final exam will be used to replace the first missed lecture exam.

If arrangements are made well in advance, a lecture examination can usually be taken before the scheduled time and a more lenient excuse policy is applied. The treatment of missed examinations, not covered by this policy, will be determined on a case by case basis.

Grading Policy:

	Weight	
Assignments	30%	
Midterm Exam	30%	
Final Exams	40%	
Total	100%	

Average	Grade
90 ≤ T ≤ 100	Α
80 ≤ T < 90	В
70 ≤ T < 80	С
60 ≤ T < 70	D
0 ≤ T < 60	F

A numerical average and a letter grades will be computed for each of the components of the course using the data in the tables above.

Grade Grievances: Any appeal of a grade in this course must follow the procedures and deadlines for grade-related grievances as published in the current University Catalog. http://catalog.uta.edu/academicregulations/grades/#undergraduatetext.

Electronic Communication Policy: UT Arlington has adopted MavMail as its official means to communicate with students about important deadlines and events, as well as to transact university-related business regarding financial aid, tuition, grades, graduation, etc. All students are assigned a MavMail account and are responsible for checking the inbox regularly. There is no additional charge to students for using this account, which remains active even after graduation. Information about activating and using MavMail is available at http://www.uta.edu/oit/cs/email/mavmail.php.

In addition, the class has an internet website – http://ce1252.utace.net. The website includes the class schedule, assignments, hints for homework assignments, an examination archive, and other resources. Students are free to make printed copies of many of the documents available on the class website. However, students should not create, or acquire, in any other manner, printed solutions of class assignments. Possession of printed solutions to CE 1252 class plates, from any source, will be considered Cheating under the Scholastic Dishonesty Policy:

http://wweb.uta.edu/catalog/content/general/academic_regulations.aspx#34.

Americans with Disabilities Act: The University of Texas at Arlington is on record as being committed to both the spirit and letter of all federal equal opportunity legislation, including the *Americans with Disabilities Act (ADA)*. All instructors at UT Arlington are required by law to provide "reasonable accommodations" to students with disabilities, so as not to discriminate on the basis of that disability. Any student requiring an accommodation for this course must provide the instructor with official documentation in the form of a letter certified by the staff in the Office for Students with Disabilities, University Hall 102. Only those students who have officially documented a need for an accommodation will have their request honored. Information regarding diagnostic criteria and policies for obtaining disability-based academic accommodations can be found at www.uta.edu/disability or by calling the Office for Students with Disabilities at (817) 272-3364.

Title IX: The University of Texas at Arlington is committed to upholding U.S. Federal Law "Title IX" such that no member of the UT Arlington community shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any education program or activity. For more information, visit www.uta.edu/titleIX.

Academic Integrity: Students enrolled all UT Arlington courses are expected to adhere to the UT Arlington Honor Code:

I pledge, on my honor, to uphold UT Arlington's tradition of academic integrity, a tradition that values hard work and honest effort in the pursuit of academic excellence.

I promise that I will submit only work that I personally create or contribute to group collaborations, and I will appropriately reference any work from other sources. I will follow the highest standards of integrity and uphold the spirit of the Honor Code.

UT Arlington faculty members may employ the Honor Code as they see fit in their courses, including (but not limited to) having students acknowledge the honor code as part of an examination or requiring students to incorporate the honor code into any work submitted. Per UT System *Regents' Rule* 50101, §2.2, suspected violations of university's standards for academic integrity (including the Honor Code) will be referred to the Office of Student Conduct. Violators will be disciplined in accordance with University policy, which may result in the student's suspension or expulsion from the University.

Student Feedback Survey: At the end of each term, students enrolled in classes categorized as "lecture," "seminar," or "laboratory" shall be directed to complete an online Student Feedback Survey (SFS). Instructions on how to access the SFS for this course will be sent directly to each student through MavMail approximately 10 days before the end of the term. Each student's feedback enters the SFS database anonymously and is aggregated with that of other students enrolled in the course. UT Arlington's effort to solicit, gather, tabulate, and publish student feedback is required by state law; students are strongly urged to participate. For more information, visit http://www.uta.edu/sfs.

Emergency Exit Procedures: Should we experience an emergency event that requires us to vacate the building, students should exit the room and move toward the nearest exit, which is located at the end left hand side of the corridor. When exiting the building during an emergency, one should never take an elevator but should use the stairwells. Faculty members and instructional staff will assist students in selecting the safest route for evacuation and will make arrangements to assist handicapped individuals.

Student Support Services Available: UT Arlington provides a variety of resources and programs designed to help students develop academic skills, deal with personal situations, and better understand concepts and information related to their courses. Resources include tutoring, major-based learning centers, developmental education, advising and mentoring, personal counseling, and federally funded programs. For individualized referrals, students may visit the reception desk at University College (Ransom Hall), call the Maverick Resource Hotline at 817-272-6107, send a message to resources@uta.edu, or view the information at www.uta.edu/resources.

Librarian to Contact: Sylvia George-Williams, 817-272-7519, sylvia@uta.edu.

Writing Center: The Writing Center, 411 Central Library, offers individual 40 minute sessions to review assignments, *Quick Hits* (5-10 minute quick answers to questions), and workshops on grammar and specific writing projects. Visit https://uta.mywconline.com/ to register and make appointments. For hours, information about the writing workshops we offer, scheduling a classroom visit, and descriptions of the services we offer undergraduates, graduate students, and faculty members, please visit our website at www.uta.edu/owl/.

Lecture Schedule				
Week	Date	Topics	Assignment	Due
1	Aug 29	Lettering, Coordinate Systems	CP01, CP02	Sep 5
2	Sep 5	Coordinate Systems, Geometric Construction, Development	CP03, CP04, CP05	Sep 12
3	Sep 12	Geometric Construction, Development	CP06, CP07, CP08	Sep 19
4	Sep 19	Orthographic Multiview	CP09, CP10, CP11	Sep 26
5	Sep 26	Orthographic Multiview (Hidden Lines)	CP12, CP13	Oct 3
6	Oct 3	Isometric View	CP14, CP15	Oct 10
7	Oct 10	Cylindrical Surfaces	CP16, CP17	Oct 17
8	Oct 17	Cylindrical Surfaces	CP18, CP19	Oct 24
9	Oct 24	Three Dimensional Curves	CP20, CP21	Oct 31
10	Oct 31	Auxiliary Views	CP22, CP23	Nov 7
11	Nov 7	Auxiliary Views	CP24, CP25	Nov 14
12	Nov 14	Secondary Auxiliary Views	CP26,CP27, CP28	Nov 21
13	Nov 21	Secondary Auxiliary Views	CP29, CP30, CP31	Nov 28
14	Nov 28		Review	

Lab Schedule (CE1252-Sec 011, 012) AUTOCAD Fall 2017

Lab Schedule				
Week	Date	Topics	Assignment	Due
1,2	Aug 29	Getting Familiar with AutoCAD Understanding the Drafting Tools LP01		Sep 5
3	Sep 5	Drawing 2D objects Editing AutoCAD Objects LP02		Sep 12
4	Sep 12	Editing with Modify Panel Tools, Getting Organized With Layers	LP03	Sep 19
5	Sep 19	Editing with Modify Panel Tools, Getting Organized With Layers	' I I PIN I Sen A	
6	Sep 26	Using Blocks, Groups, Xrefs, Creating Text, and Design Centers	LP05	Oct 3
7	Oct 3	Using Blocks, Groups, Xrefs, and Design Centers	LP06	Oct 10
8	Oct 10	Midterm Exam (Tentatively)		
9	Oct 17	Creating 3D Drawings	LP07	Oct 24
10	Oct 24	Creating 3D Drawings	LP08	Oct 31
11	Oct 31	Creating 3D Drawings	LP09	Nov 7
12	Nov 7	Gathering Information	LP10	Nov 14
13	Nov 14	Structural Element –Solid Models	LP11	Nov 21
14	Nov 21	Review		
15	Nov 28	Final Exam (Tentatively)		

CE 1252 - Computer Tools Equipment List Fall 2017

You will find that the items listed are available in a wide range of prices. Presumably, the durability and ease of use of the equipment increases with the price. For CE 1252, you should pick equipment of at least moderate quality. Many of you will be using this equipment or equipment like it for the rest of your career and, therefore, you may want to get better than moderate quality.

With few exceptions, the equipment is available in the UTA bookstore but not in the quantities we need. Most of the equipment will also be available in local office supply stores. There are numerous companies that sell drafting equipment on the web. Caveat emptor. One I found that appears to have everything is www.draftingsteals.com. I have never ordered from them so I can neither recommend them nor warn you about them, but you can visit the site to see what the equipment looks like. If you have a particularly good or bad experience obtaining your equipment, please tell me so, in the future, I will have some idea of good places to go.

Required Drafting Equipment:

Pencils: You need to have pencils with lead grade F to make dark thick lines, lead grade H to make dark somewhat thinner lines and grade 4H to make light thin lines. There are three primary options. Pick the one that suits you best.

- 1) Wooden pencils there is a pencil sharpener in NH 229 but you may want your own to avoid multiple trips to the sharpener and possibly waiting in line. If you get a pencil sharpener, it must contain its own shavings (http://www.draftingsteals.com/catalog-pencil-sharpeners---erasing-supplies-pencil-sharpeners.html). You will also need a lead pointer which points the lead without removing more wood from the pencil. (http://www.draftingsteals.com/catalog-pencil-sharpeners---erasing-supplies-lead-pointers.html).
- 2) Lead holder- (http://www.draftingsteals.com/catalog-pencils--leadholders----lead-leadholders.html) This is a type of mechanical pencil that uses 2 mm lead (typically). Nice optional features with this are an indicator that can be adjusted to show the grade of lead currently in the pencil and an included lead pointer. You will probably want three of these because changing the lead is a time consuming and messy chore. You will need a lead pointer (ideally in the pencil) and 2mm lead of the three grades listed above.
- 3) Mechanical drafting pencils (http://www.draftingsteals.com/catalog-pencils--leadholders----lead-mechanical-pencils.html) You will need three mechanical pencils one each to take 0.3mm lead, 0.5mm lead, and 0.7 mm lead. In addition, you will need 0.3mm 4H grade lead, 0.5mm H grade lead and 0.7mm F grade lead. This type of pencil makes it easier to maintain the required line width.

Eraser (http://www.draftingsteals.com/catalog-pencil-sharpeners---erasing-supplies-erasers.html)

Erasing shield (http://www.draftingsteals.com/catalog-pencil-sharpeners---erasing-supplies-erasering-shields.html)

Triangle (30-60 and 45 or two 30-60) – one 30-60 triangle should be 10 inch or larger. The other triangle can be smaller (http://www.draftingsteals.com/catalog-drafting---drawing-aides-triangles.html)

Straight edge This should be at least 12 inches long. (http://www.draftingsteals.com/straightedges.html) A triangle can be used as the straight edge if one side is 12 inches long.

Drafting compass (http://www.draftingsteals.com/catalog-drafting---drawing-aides-compass---dividers-compass.html) There is a tool that combines a drafting compass and dividers but again switching it back and forth takes time and can be messy.

Dividers (http://www.draftingsteals.com/catalog-drafting---drawing-aides-compass---dividers.html) This is used to accurately duplicate a distance from one part of a drawing to another.

Optional Drafting Equipment:

Circle Template – circles up to 2 inches diameter more or less (http://www.draftingsteals.com/catalog-templates-circles.html) Faster than a drafting compass for drawing circles but not as accurate.

Isometric Ellipse Template – This is the optional item that is most popular most semesters. There are ellipse templates for a variety of aspect rations. Be sure to get the one that is specifically an isometric ellipse template. Get one that can draw ellipses up to 2 inches on the major axis, more or less (http://www.draftingsteals.com/catalog-templates-ellipses.html)

Engineers scale (http://www.draftingsteals.com/catalog-drafting---drawing-aides-scales-triangular-scale-engineers-scales.html) Useful for drawing to scale. We don't draw to scale.

CE 1252 – Computer Tools Standards

The type of standards discussed here are rules that specify the details of how documents must appear. Standards may vary depending on the actual content of the document. Engineering companies (and most other entities) establish standards of this type for a number of different reasons.

- Each type of document, produced by any employee of the company, will have a uniform appearance and organization.
- The author of a document is relieved of the need to make decisions about how to format
 the document and what are its required contents. These decisions can be surprisingly
 time consuming.
- The user of a document will know where to find common pieces of information in the document (date of production, version, author) and can have confidence that they will be included in the document.

There are a number of standards in CE 1252 that students are required to follow. Failure to honor standards will usually affect the grade on submitted work. Points are not awarded for honoring standards. Points are deducted for violating standards.

Plate Block

CP01	LETTERING 1			CID	
CE 1350	- COMPUTER AIDED DRAFTING	DUE DATE	STUDENT NAME		

DUE DATE – date the assignment is due in the format MMM DD, YYYY. Where:

- MMM is the three character abbreviation of the month (JAN, FEB, MAR, APR, MAY, JUN, JUL, AUG, SEP, OCT, NOV, DEC).
- A single space
- DD is the one or two digit day of the month
- A comma followed by a single space
- The four digit year

STUDENT NAME is the student's first initial followed by student's last name.

CID is the unique four-digit Class ID assigned to each student.

In AutoCAD, the same standards will be used for these three items. In AutoCAD, the three labels, DUE DATE, STUDENT NAME, and CID, will appear. The student will use AutoCAD's editing capability to replace the labels with the required data in the required form.

CE 1252 Computer Tools Line Quality

Lines refers to visible lines, hidden lines, center lines, and other lines that are used to convey information in a drawing and includes curved lines as well as straight lines. Construction lines refers to straight or curved lines that are used to assist in creating a drawing but do not actually convey information.

Construction Lines (Cc)

Construction lines should be significantly lighter and thinner than lines. It should be easy to distinguish construction lines from the other types of lines. Construction lines should be made darker than usual if their inclusions is specifically required for a particular plate, i.e. geometric construction plates. Fold lines are construction lines but should be dark and wide enough to be clearly visible when used in auxiliary views

Darkness (Dd)

Lines should be very dark. Ideally, they should be as dark as the lines provided on a plate. Each line should be of uniform darkness.

Lettering (LI)

In addition to using the standard set of characters, text must be neatly lettered and utilize provided guide lines.

Neatness (Nn)

There should not be smudges, stray marks, or obvious erasures on a plate. The plate should not be wrinkled, folded, soiled, or damaged in other ways.

Precision (Pp)

Lines should begin and end at the proper place with respect to other lines in a drawing. There should not be a noticeable overrun, gap, or offset at the ends of lines.

Spacing (Ss)

Lines that are not continuous (hidden line, center line, etc.) should follow the specified pattern for gap size and dash size.

Uniformity (Uu)

Lines of the same type in a panel should be of uniform darkness and width.

Width (Ww)

Visible lines should be the same width as the given visible lines in a plate (0.6 mm). Hidden lines and center lines should be approximately 60% as wide as visible lines (0.4 mm).

Deductions for line quality will be determined for the homework plate as a whole but for individual panels on an examination. If the work is significantly deficient with respect to any of the aspects of line quality listed below, the letter associated with that aspect, in upper case, will be placed on the page and, in the early part of the semester, two points deducted from the score. If an aspect is less than acceptable, or if the aspect is significantly deficient in a few places only, the initial letter associated with that aspect, in lower case, will be placed on the page and one point deducted from the score. If needed, the deductions will be increased to encourage good workmanship.

CE 1252 – Computer Tools 239 NH Lab Use

The CE undergrad computer lab is in room NH 239. By using the lab you are agreeing to comply with the rules below and with any other rules that may be posted in the lab.

239 NH Lab Rules

- You are responsible if anyone else uses your computer account(s). Safeguard your user name(s) and password(s). **DO NOT** give your user name(s) or password(s) to **ANYONE** for any reason.
- **DO NOT** bring unauthorized friends into the lab with you.
- If an instructor is not in the lab, the door to the computer lab is to remain **closed**. **DO NOT** open the door for anyone. Anyone entering the lab should have been given access to the lab by the CE Department.
- BRING NO FOOD OR DRINK INTO THE LAB.

Access to 239 NH Lab

The CE Computer Lab has a card swipe lock. To gain entrance, students will need their UTA ID card and a 5-digit PIN number. The 5-digit PIN number can be obtained by going to this site:

https://www.uta.edu/oit/verifynetid

The PIN number is assigned to the student by OIT, not the Civil Engineering Department. There is a \$25 fee for changing this PIN Number and you will be assigned another random five-digit number anyway.

CE 1252 students may use the 239 NH Lab any time Nedderman Hall is open and the lab is not being used by another class or lab section of CE 1252. The Fall 2017 lab schedule will be posted on the door. CE 1252 students may use the lab when it is being used by another class or lab section of CE 1252 with the permission of the instructor.

Access to 239 NH Computers

Students use their UTA NetID to access the computers in the Civil Engineering Undergraduate Computer Lab. Computers are available to students on a first come, first served basis during regular lab classes. Computers will be assigned to students for lab examinations.

CE 1252 Assignment Data File Storage

C: Drive

The C: drive is the local disk of the computer being used. Students should not use this drive for long term data storage. It can be used for data storage during a class period, if you remember to move your files to some place safe before leaving the lab. However, the data on the C: drive of one lab computer is not available to a different lab computer. Also, in various circumstances, the operating system and applications on these drives may be replaced, with all user data being lost.

J: Drive

UTA students are provided data storage on the UTA network on a virtual drive configured as the J: drive. Students are encouraged to use their UTA "J:" drive to store CE 1252 assignment data files. Exam data files should be placed on the C: drive and must not be moved or copied to any other drive except the T: drive. The J: drive is available from any computer in the CE lab and, in fact, from almost any computer on campus. Check your J: drive to make sure you can read and write files. If you cannot read and write files on your J: drive, request help from the UTA OIT helpdesk at Helpdesk@exchange.uta.edu. Send them your UTA NetID and a request that they set your J: drive privileges to allow you to read and write files. Students may also use a flash drive to save CE 1252 assignment data files.

T: Drive

Assignment files are obtained from and submitted to another virtual drive, which you will configure as the "T:" drive. To map the drive, Windows 7, click the "Start" button in the lower left corner. Select "Computer". Right click on the computer to open the Tools menu and select "Map Network Drive". For the Drive: option, select T. For the Folder: option, enter:

\\Iridium\classes\ce1252\student\netID

where **netID** is your UTA netID. Make sure the "Reconnect at logon" check box is selected. Click "Finish". This will have to be done every time you use a different computer in the lab.

Your T: drive should have two subdirectories, obtain and submit. Initial files for your assignments and examinations will be placed in your obtain subdirectory. You should copy each initial file from this subdirectory to a working subdirectory on the J: drive before you open the file with AutoCAD or Mathcad. It is Academic Misconduct, to obtain a CE 1252 data file from any other source. You should not modify the files in the obtain directory, as you may need a clean copy of the file again. You must not create or copy any files in the obtain directory.

You should copy completed assignment and examination files to the submit directory on your T: drive. You have the authority to overwrite the files in the submit directory. Shortly after the due date, whatever file is in your submit directory is the file that will be graded. Since you may have several versions of an assignment file on your J: drive, you should be careful that you are submitting the correct one. Do not create or copy any files, other than ones you are submitting for a grade, in your submit directory. The file you submit for a grade must have exactly the same name as the file you copied from the obtain directory.