

# Texas A&M University – Texarkana

## Engineering Graphics I Course Syllabus

**Effective Date:** Fall 2012

- I. **Course Number:** ENGR 1204
- II. **Course Title:** Engineering Graphics I
- III. **Semester Credit Hours:** 2 credit hrs (2 contact hrs)

**Instructor:** Kenny Irizarry, PE, REM  
**Office:** SCIT 208, Hours: MW 9:30am-12pm, TR 1-3pm, F 10-11am  
**Email:** [kirizarry@tamut.edu](mailto:kirizarry@tamut.edu)  
**Phone:** (903) 223-3041

IV. **Course Description:** An introduction to computer-aided drafting. Emphasis is placed on drawing setup; creating and modifying geometry; adding text and dimensions, using levels, coordinate systems, and plot/print to scale. Technical drawing skills including: freehand sketching, text, orthographic projection, dimensioning, sectional views, and other viewing conventions will be developed.

V. **Course Delivery Method:** Face to face.

VI. **Required Textbooks/Resources:** Harnessing MicroStation V8i, 1<sup>st</sup> Edition (2011), G.V. Krishnan, James E. Taylor, Delmar, Cengage Learning, ISBN-13: 9781435499843

A 2-gigabyte flash drive is also required for this course.

**A scientific calculator will be needed for this course.** (The library will have some calculators available for use on a first-come, first-served basis.)

VII. **Student Learning Outcomes:** Upon completion of this course, the student will be able to:

Course Objectives	ABET	Assessment
Demonstrate the ability to do neat work and to be well organized.	f, g	Drawings/Homework, Team Project
Create orthographic views of objects.	g, k	Drawings/Homework, Team Project
Sketch objects freehand to communicate concepts.	g, k	Drawings/Homework, Team Project
Design isometric and oblique pictorials of objects.	g, k	Drawings/Homework, Team Project
Visualize objects 3-dimensionally.	a, e, k	Drawings/Homework, Team Project, Exams

List and recognize the six major types of sectional views	a, e, g, k	Drawings/Homework, Team Project, Exams
Apply dimension and tolerances to orthographic views in accordance with ANSI standards and conventional engineering practices.	a, e, g, j, k	Drawings/Homework, Team Project, Exams
Demonstrate the ability to use a modern Computer Aided Design Program to complete 2-dimensional drawings of objects.	a, b, c, e, k	Drawings/Homework, Team Project, Exams
Formulate and justify a solution to an engineering problem within a team structure.	a, c, d, e, f, g, j, k	Team Project

**This course is designed to satisfy the ABET Engineering Competencies specified in the table above.** Engineering programs must demonstrate that their graduates have:

- a. an ability to apply knowledge of mathematics, science, and engineering
- b. an ability to design and conduct experiments, as well as to analyze and interpret data
- c. an ability to design a system, component, or process to meet desired needs
- d. an ability to function on multi-disciplinary teams
- e. an ability to identify, formulate, and solve engineering problems
- f. an understanding of professional and ethical responsibility
- g. an ability to communicate effectively
- h. the broad education necessary to understand impact of engineering solutions in global and societal context
- i. a recognition of the need for, and an ability to engage in life-long learning
- j. a knowledge of contemporary issues
- k. an ability to use techniques, skills, and modern engineering tools necessary for engineering practice

#### VIII. Course Outline:

Chap.	Title	Week	Key Dates*
1	Course Introduction / Getting Started with MicroStation V8i	1	
2	Fundamentals I - Drawing Setup and Organization	2	
3	Fundamentals II - Display and Basic Selection Operations	3	
4	Fundamentals III - Modifying Your Drawings	4	
5/6/7	Accudraw and Smartline/Manipulating a Group of Elements/Placing Text, Data Fields and Tags	5	
	<b>Exam 1/Select Project Teams</b>	<b>6</b>	<b>10/3/12</b>
N/A	Multi-view and Auxiliary View Projections / Creating Section Views	7	
	<b>Project Outline Due</b>	<b>7</b>	<b>10/10/12</b>

8/9	Element Modification/Measurement and Dimensioning	8	
10/11	Printing/Cells and Cell Libraries	9	
12	Patterning/Analyzing 2D Drawings	10	
	<b>Exam 2</b>	<b>11</b>	<b>11/7/12</b>
N/A	Working with drawing layouts	12	
16	3D Design and Rendering - Solid Modeling Fundamentals	13	
16	3D Design and Rendering - Creating 2D Drawings from a 3D Solid Model	14	
	Project Presentations/Review for Final Exam	15	
	<b>Final Exam</b>	<b>16</b>	<b>TBD</b>

*\*This calendar will be adjusted to the needs of the course. Changes will be based on the course progress. The in-class exam dates could be moved one or two days up or down. The Final Exam date is fixed and will not change.*

**IX. Methods of Evaluation:**

Exams (2 @ 15%)	30%	300 pts
Final Exam	30%	300 pts
Drawings/Homework (11, drop 1 @ 2%)	20%	200 pts
Team Project	20%	200 pts
Total	100%	1000 pts possible

**X. Grading Scale:**

A = 90-100%, B = 80-89%, C = 70-79%, D = 60-69%, F = 0-59%

**XI. Library/Media Resources Assessment:**

**A. Books/Periodicals/Electronic Data Bases/Software/Programs:**

Resource	Available?		If "No," Est. Cost	Signature, Library Director	Comments  (including availability of funds to acquire unavailable resource(s) and commitment to do so)
	Yes	No			
<b>Introduction to AutoCAD 2008 [electronic resource] : 2D and 3D design / Alf Yarwood.</b> Oxford ; Burlington, MA : Newnes, 2007.	X				
<b>Mechanical drawing : board &amp; CAD techniques / Thomas E. French, Jay D Helsel.</b>	X				

New York : Glencoe/McGraw-Hill, c2003.					
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**B. Computing/Multimedia/Online Media Resources:**

Resource	Available?		If "No," Est.Cost	Signature, Assoc. VP, IT	Comments  (including availability of funds to acquire unavailable resource(s) and commitment to do so)
	Yes	No			
<b>Introduction to AutoCAD 2007 [electronic resource] : 2D and 3D design / Alf Yarwood.</b> Amsterdam ; Boston ; London : Newnes, 2007.	X				

**XII. Student Participation:**

- a. **Participation Policy:** You are expected to attend all lecture classes. Class attendance is very important since many of the exam questions will be drawn from the class lectures, demonstrations, and discussions. Taking good class notes is essential. Reading the chapter prior to coming to class is also recommended. You are expected to participate in all team project exercises.
- b. **Course Etiquette:** You are expected to be courteous towards the instructor and your classmates. You are expected to be on time for lecture. Cell phones should be turned off during lecture. You should not talk to your classmates while I am talking or while one of your classmates is asking a question. If you have a question about the course material, ask me and I will be more than happy to answer your question.
- c. **Discussion Board Standards:** Not applicable to this course.

**XIII. Disability Accommodations:** Students with disabilities may request reasonable accommodations through the A&M-Texarkana Disability Services Office by calling 903-223-3062.

**XIV. Academic Integrity:** Academic honesty is expected of students enrolled in this course. Cheating on examinations, unauthorized collaboration, falsification of research data, plagiarism, and undocumented use of materials from any source constitute academic dishonesty and may be grounds for a grade of 'F' in the course and/or disciplinary actions. For additional information, see the university catalog.

**XV. A&M-Texarkana Email Address:** Upon application to Texas A&M University-Texarkana an individual will be assigned an A&M-Texarkana email account. This email account will be used to deliver official university correspondence. Each individual is responsible for information sent and received via the university email account and is expected to check the official A&M-Texarkana email account on a frequent and consistent basis. Faculty and students are required to utilize the university email account when communicating about coursework.

**XVI. Drop Policy** To drop this course after the census date (see [semester calendar](#)), a student must complete the Drop/Withdrawal Request Form, located on the University website <http://tamut.edu/Registrar/droppingwithdrawing-from-classes.html>) or obtained in the Registrar's

Office. The student must submit the signed and completed form to the instructor of each course indicated on the form to be dropped for his/her signature. The signature is not an “approval” to drop, but rather confirmation that the student has discussed the drop/withdrawal with the faculty member. The form must be submitted to the Registrar’s office for processing in person, email [Registrar@tamut.edu](mailto:Registrar@tamut.edu), mail (7101 University Ave., Texarkana, TX 75503) or fax (903-223-3140). Drop/withdraw forms missing any of the required information will not be accepted by the Registrar’s Office for processing. It is the student’s responsibility to ensure that the form is completed properly before submission. If a student stops participating in class (attending and submitting assignments) but does not complete and submit the drop/withdrawal form, a final grade based on work completed as outlined in the syllabus will be assigned.

#### **XVII. Student Technical Assistance:**

- Solutions to common problems and FAQ’s for your web-enhanced and online courses are found at this link: <http://www.tamut.edu/webcourses/index.php?pageid=37>
- If you cannot find your resolution there, you can send in a support request detailing your specific problem here: <http://www.tamut.edu/webcourses/gethelp2.php>
- Blackboard Helpdesk contacts:

Office hours are: Monday - Friday, 8:00a to 5:00p

Julia Allen (main contact) 903-223-3154 [julia.allen@tamut.edu](mailto:julia.allen@tamut.edu)

Frank Miller (alternate) 903-223-3156 [frank.miller@tamut.edu](mailto:frank.miller@tamut.edu)

Nikki Thomson (alternate) 903-223-3083 [nikki.thomson@tamut.edu](mailto:nikki.thomson@tamut.edu)

**XVIII. Additional Notes:** The instructor reserves the right to modify this syllabus at any time as deemed necessary. Any modifications will be announced as soon as possible. The faculty of the College of Science, Technology, Engineering, and Mathematics is committed to the continuous improvement in the quality of instruction. Student input is important and will be obtained at the end of the course.