

**COLLEGE OF ARTS AND SCIENCES**  
Course Syllabus

**DEPARTMENT:** Agriculture Sciences-Technology Program  
**COURSE NUMBER AND TITLE:** IT 161; Engineering Graphics  
**SEMESTER:** Fall 2007  
**CREDIT HOURS:** 3 hours  
**LECTURE LOCATION/TIME:** IT Building/Farrington 220  
**LAB LOCATION/TIME:** IT Building/Farrington 220  
**INSTRUCTOR:** John J. Copley, MEd

**OFFICE:** Farrington 220  
P.O. Box 2266 SHSU  
Office phone & Voicemail: 936-294-1198  
**OFFICE HOURS:** Tuesdays and Thursdays 12-1 p.m.

**TEXTBOOK RECOMMENDED:** TECHNICAL DRAWING,  
Giesecke, Mitchell and Spencer

**SUPPLIES:** Mechanical Drafting Kit (See attached  
equipment list) One memory stick

**COURSE OBJECTIVES:**

Engineering graphics is a comprehensive introduction to the graphic language utilized in today's industry and industrial technology education. Students are given in-depth coverage of drafting theories, symbols, and ANSI standards, which are reinforced and put into practice by having each student complete a number of challenging drawing problems. All of the content is especially relevant to basic computer-aided drafting (CAD) applications since most CAD software programs assume background knowledge of drafting techniques. Areas covered include technical sketching, lettering, drafting equipment, geometric construction, orthographic projection, pictorial projection, sectional views, auxiliary views, dimensioning basics, and an introduction to CAD. Approximately three-fourths of the course utilizes sketching and drawing instruments and one-fourth utilizes CAD.

**COURSE FORMAT:**

This course will be a combination of lecture, demonstrations, student inquiry, and in-class problem solving. The students will be required to complete a series of drawing exercises/projects that will reflect their knowledge of the state objectives. Drawing techniques will involve board and CAD applications.

## **COURSE CONTENT:**

Unit I - Freehand Sketching / Lettering, Exercises as assigned.

- A. Freehand Lettering
- B. Lettering Techniques
- C. Sketching Line Types and Weights
- D. Freehand and CAD Lettering

Unit II - Drafting Instruments and Equipment, Exercises as assigned.

- A. Drafting Equipment
- B. Use and Care of Equipment
- C. Scales
- D. Drafting Media and Standard Sizes

Unit III - Introduction to CAD, Exercises as assigned.

- A. Basic CAD Commands
- B. Border
- C. Text

Unit IV - Geometric Construction, Exercises as assigned.

- A. Geometric Forms
- B. Construction Principles
- C. CAD Applications

Unit V - Multi-view Projection, Exercises as assigned.

- A. Sketching
- B. Surface, Edge, and Line Descriptions
- C. Orthographic Projection
- D. Visualization
- E. Cylinders and Ellipses
- F. Conventional Shapes and Notations
- G. CAD Applications

Unit VI - Pictorial Projection, Exercises as assigned.

- A. Types of Pictorial Drawings
- B. Isometric Drawings
- C. Oblique Drawings

Unit VII - Sectional Views, Exercises as assigned.

- A. Types of Sectional Views
- B. Cutting Planes and Section Lining
- C. CAD Applications

Unit VIII - Auxiliary Views, Exercises as assigned.

- A. Definition and Utilization of Auxiliary Views
- B. Layout of Primary Auxiliary Views
- C. Potting Irregular Curved Surfaces
- D. CAD Applications

Unit IX - Dimensioning Basics, Exercises as assigned.

- A. Line types
- B. Techniques

- C. Do's and Don'ts
- D. Size and Location Dimensions
- E. CAD Applications

**COURSE EVALUATION:**

Each student should be prepared for class/lab by having carefully read and studied all assigned textbook readings and/or handouts. Each project is to be done on an individual basis. You should expect to spend a minimum of three to four hours per week in lab.

Each student is expected to individually complete all drawing exercises for each of the units in this course. Penalties will be assessed for work, which is turned in late. Each student will also complete unit tests plus a comprehensive final exam. The final grade for the course will be averaged as follows:

Drawing assignments 50%  
 Unit Exams and Final Exam 40%  
 Quick Quizzes 10%

**TEST/EXAMS/QUIZS:**

A. Exams - 4 major exams will be given during the semester. Most tests will consist of multiple choice, true-false, completion, matching and/or sketching problem solving.

Exam 1	Unit I, II,
Exam 2	Unit III, IV
Exam 3	Unit V, VI
Final Exam	Comprehensive

B. Lab Worksheets – You will be required to complete approximately forty (40) individual lab sketches or drawings. Each assignment will have a due date and should be completed during your scheduled lab period. Late work will be penalized 10 points for each day it's late. Work more than one week late will receive a zero.

C. Quizzes – You will have a short quiz (15 minutes maximum) on those weeks when a unit exam is not scheduled. The quiz will consist of 10-15 true-false or multiple choice questions over current reading and/or lab assignments. There will be no makeup if you miss a quick quiz.

**ASSIGNMENTS:** See the attached sheet listing tentative assignments and due dates. (also available on Blackboard)

**ATTENDANCE POLICY:**

1. Every student is expected to be present and *on time* for every class. You are tardy whether you come in late or leave early. Roll will take at the beginning of each class or lab session; if you are not in your seat, you will be counted absent (three tardies will be counted as one absent). *Accumulate six (6) hours and your grade will drop by a letter, nine (9) hours and it drops by two (2) letters.* In case you are absent, whether excused or unexcused, you are still responsible for the material covered.

**Material and instructions will be disseminated one time only.** If you are absent or late, the responsibility for obtaining handouts and information is incumbent on you. You would be wise to establish relationships with fellow students for assuring that you remain well-informed and that you are adequately prepared for exams.

2. Each student should be prepared for class/lab by having carefully read and studied all assigned textbook readings and/or handouts. Each project is to be done on an individual basis.

You should expect to spend a minimum of three to four hours per week in lab. Drawings / Assignments turned in late will be penalized ten points per day late. Work will NOT be accepted for credit beyond one week of the due date. Absences do not exempt you from the responsibility of turning material in on time and they do not extend the due date of the assignment schedule.

3. There will not be repeat exams, quizzes, or makeup assignments except for extenuating circumstances (documented illness, family crisis, etc) or by mutual agreement between the instructor and the student.

4. If you have perfect attendance during this course you will have the option to be exempt from taking your final exam. (Documented absences will not count against you.)

#### **ACADEMIC HONESTY:**

The University expects all students to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain complete honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action.

If students are found to be cheating or guilty of plagiarism (including copying a drawing): First time offense will result in the test or assignment being counted as a zero (this applies to the person who copied and the person who willingly allowed or supplied the data to be copied). If the student repeats the violation, the course grade will be assigned as 'F'.

#### **CLASSROOM RULES AND CONDUCT:**

The lab assistant and instructor will enforce laboratory safety rules for any safety violations. Each safety violation will cause the current lab assignment grade to be dropped by one (1) grade letter for each occurrence. Students who are especially disruptive may be reported to the Dean of Students for disciplinary action in accordance with university policy.

The following are the safety rules:

Cellular telephones and pagers must be turned off before class begins. (If your cell phone rings during class or lab time it will be confiscated for 24 hours.)

Eating, drinking and tobacco products are not allowed.

Talking at inappropriate times, sleeping, horseplay, pranks or other acts of mischief are prohibited.

No equipment may be removed from the laboratory.

#### **STUDENT ABSENCES ON RELIGIOUS HOLY DAYS POLICY:**

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). This request must be made in the first fifteen days of the semester or the first seven days of a summer session in which the absence(s) will occur. The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed.

**DISABLED STUDENT POLICY:**

It is the policy of Sam Houston State University that no otherwise qualified disabled individual shall, solely by reason of his/her handicap, be excluded from the participation in, be denied the benefits of, or be subjected to discrimination under any academic or Student Life program or activity. Disabled students may request help with academically related problems stemming from individual disabilities from their instructors, school/department chair, or by contacting the Chair of the Committee for Continuing Assistance for Disabled Students and Director of the Counseling Center, Lee Drain Annex, or by calling (936) 294-1720.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Counseling Center and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. **NOTE: no accommodation can be made until you register with the Counseling Center**

**No assignments or work sheets will be accepted after December 05, 2005**

**"The above schedule, policies, and assignments in this course are subject to change in the event of extenuating circumstances or by mutual agreement between the instructor and the students.**

Fall 2005

**IT 161 Engineering Drawing  
Tentative Assignment Sheet  
Fall 2005**

<b>Exams</b>		<b>Due Date</b>
Exam 1	Unit I, II,	
Exam 2	Unit III, IV	
Exam 3	Unit V, VI	
Final Exam	Comprehensive	as per university test schedule
 <b>UNIT I - Lettering / Sketching</b>		
Text reference: Chapter 3, 5		
Exercises: 1, 2	Sketching	Sept. 12
3,	Lettering	Sept. 12
 <b>UNIT II - Drafting Instruments and Equipment</b>		
Text reference: Chapter 3		
Exercises 4, 5, 6	Scales	Sept. 19
7	Hand Drawing	Sept. 19
 <b>UNIT III - Geometric Construction</b>		
Text reference: Chapter 4		
Exercises: 8	Geometric Exer.	Sept. 26
 <b>UNIT IV - Introduction to Computer Graphics</b>		
Text reference: Chapter 2 and Handouts		
Exercises: 9		Oct. 3
10		Oct. 3
 <b>UNIT V - Multiview Projection</b>		
Text reference: Chapter 5		
Exercises: 11, 12	Multiview Sketch	Oct. 10
13, 14	Multiview Drawing	Oct. 10
15, 16	Multiview Sketch	Oct. 17
17, 18	Multiview Drawing	Oct. 17
19	Multiview CAD	Oct. 17
20, 21	Multiview Sketch	Oct. 24
22	Multiview Drawing	Oct. 24
23	Multiview CAD	Oct. 24
24	Multiview Sketch	Oct. 31
25	Multiview Drawing	Oct. 31
26	Multiview CAD	Oct. 31
 <b>UNIT VI - Pictorial Projection</b>		
Text reference: Chapter 6		
Exercises: 27, 28	Oblique - Isometric	Nov. 7

**UNIT VII - Sectional Views**

Text reference: Chapter 7

Exercises: 29, 30, 31	Section Drawing	Nov. 14
32, 33	Section CAD	Nov. 21

**UNIT VIII - Auxiliary Views**

Text reference: Chapter 8

Exercises: 34, 35, 36	Auxiliary Views	Dec. 5
-----------------------	-----------------	--------

**UNIT IX - Dimensioning**

Text reference: Chapter 9

Exercises will be combined with Unit V

Changes to the above due dates may be necessary. Such changes will only be made by the instructor, not by the student.

**Notes:**

Lab Worksheets – You will be required to complete approximately thirty-five (35) individual lab drawings. Each assignment will have a due date and should be completed during your scheduled lab period. Late work will be penalized 10 points for each day it's late. Work more than one week late will receive a zero.

*Material and instructions will be disseminated one time only.* You are responsible for all material presented in class, even if you miss a class or lab. If you are absent or late, the responsibility for obtaining handouts and information is incumbent on you. You would be wise to establish relationships with fellow students for assuring that you remain well-informed and that you are adequately prepared for class or lab.

**NO WORK WILL BE ACCEPTED AFTER 5:00 PM ON DECEMBER 05, 2005**

I.T. 161 Engineering Graphics  
Equipment and Supplies

**Disk:**

One Memory Stick or 100/250 MB zip disk

**Notebook:**

To hold drawings, a 1" - 3-ring notebook is suitable

**MATERIALS LIST**

Each student will need to obtain a drafting kit which consists of the following items:

- 1 5" divider
- 1 6" bow compass
- 1 45/90 Triangle
- 1 30/60 Triangle
- 1 Dust brush
- 1 Irregular curve
- 1 Ames Lettering Guide
- 1 12" Architectural Scale
- 1 12" Engineering Scale
- 1 12" Metric Scale
- 1 Roll of Drafting/Masking Tape
- 2 Pencils (0.5 mm and 0.7mm thin lead w/ HB lead)
- 1 Eraser (soft pink)
- 1 Eraser Shield
- 1 Small Circle Template – 1/8" to 1 1/2"
- 1 Soft Carrying Case

You may purchase these items at many campus bookstores, office supply stores, art supply stores, and engineering/survey/blueprint supply stores. SHSU makes no specific recommendations as to store or brand names. It will be less expensive to buy the items as a 'kit' rather than individual pieces.