COURSE: DDSN 113 Technical Drafting  
SEMESTER CREDITS: 3  
MEETING TIMES: TR 4:10-5:30pm September 1st to December 10th.  
Final Project due last day of regular class.  
FACULTY: Bradley Layton  
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OFFICE HOURS: TR 11 – 1.  

Prerequisites: There are no course requirements to participate in Technical Drafting. A background in technical drawing or engineering is not required either. As an introductory course, it will cover all aspects of technical graphics and drawing. A working knowledge or past introduction to principles of trigonometry will be extremely useful, though not necessary, to effectively understand certain aspects of technical drawing.

Course Description:
An introduction to the techniques and standard practices of communicating technical graphics through effective design. The class studies and practices drawing skills and learns the drawing standards that support the needs of the design team in advancing ideas. It also provides the foundation for successful drawing communication in the CAD environment. Topics covered include verbal communication, creative graphic expression, confidence building, teamwork, drawing media and tools, hand drawing skills, perspectives, views, sketching, standard scales, geometric construction, sections, dimensioning, and tolerances.

Course Objectives:
1. Understand the role of graphics genres in the development of creative ideas and in the communication of information.  
2. Demonstrate dexterity in the use of drawing instruments, templates etc. as reflected in neatness and accuracy while critiquing the work of others.  
3. Produce accurate drawings according to recognized standards, conventions and illustration techniques.  
4. Use graphical methods to solve basic descriptive geometry problems.  
5. Learn to select appropriate methods of graphic representation in expressing spatial ideas and concepts.  
6. Produce orthographic sketches and projections of original work with basic drawing instruments.  
7. Understand and use basic sectioning techniques.  
8. Understand and practice basic dimensioning standards and styles while critiquing the quality of their own work and that of others.  
9. Understand the role and standards of tolerances in the drawing practice.  
10. Apply technical Drafting principles to many engineering disciplines and how these have shaped the medium.
Required Materials:

Modern Graphics Communications, 4/E
Frederick E. Giesecke, Virginia Commonwealth University
Alva E. Mitchell, Texas A&M University
©2010 • Peachpit Press • Paper, 784 pp

Alvin BDK-1E Engineers Drafting Kit. Available for purchase online.

The kit includes:
- 12" engineers fully divided triangular scale
- Lettering guide pad
- 6" compass
- 6" divider
- 10" 30°/60° triangle
- 8" 45°/90° triangle
- 6" protractor
- 6 3/4" French curve
- Soft pencil eraser
- Lead holder
- Mini lead pointer
- Erasing shield
- Three pack 2.0 mm lead

Evaluation Procedures:

Assessment Grading Scale
Exercises (40%)
Quizzes (30%)
Final Project (30%)

100% - 90% A
90% - 80% B
80% - 70% C
70% - 60% D

Participation and Late Work:

Attendance is highly recommended. Assignments are to be submitted due by the assigned time on the assigned date. Late assignments receive a score of 0; late assignments will be accepted only in extraordinary circumstances, and at the instructor’s discretion. Quizzes are to be taken during the assigned times. Missed quizzes receive a score of 0; there is no makeup for missed quizzes unless previous arrangements are made. The final project, in place of a final exam, is to demonstrate the students’ capabilities in technical Drafting
ACADEMIC INTEGRITY:
All students must practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by The University. All students need to be familiar with the Student Conduct Code. The Code is available for review online at http://life.umt.edu/vpsa/student_conduct.php

DISABILITY ACCOMMODATION:
Eligible students with disabilities will receive appropriate accommodations in this course when requested in a timely way. Please contact me after class or in my office. Please be prepared to provide a letter from your DSS Coordinator. For more information, visit the Disability Services website at http://www.umt.edu/dss/ or call 406.243.2243 (voice/text).

CHANGES TO SYLLABI:
NOTE: Instructor reserves the right to modify syllabi and assignments as needed based on faculty, student, and/or environmental circumstances. If changes are made to the syllabus, amended copies will be dated and made available to the class.

Overview of Assignments:

► **Assignment 1: Creativity Sketch** Try to verbally describe this part to your partner. Have your partner make a sketch of what you are describing. Now switch roles. Have your partner make a sketch of what you are describing. Discussion: How did the sketch compare with the actual part? How easy was the part to describe verbally? How long do you think it would take to get it right? How important is graphic communication?

► **Assignment 2: Eureka!** The situation is that you just came in from doing 3 hours of yard work. You have a sore back from removing dandelions from your yard with this hand tool you bought at the hardware store. Break into groups of 3. Write a problem statement- what is the object? defect? Brainstorm solutions- list them. Each student gets one solution- sketch it out. Share the sketches and select a design. Revise the design. All team members sketch the final design. Discuss how it could be revised again (don’t redraw). Discuss getting the design to market and sales. What happens when a problem is not clearly stated? What happens when people jump to a solution? How does that impact relationships? How important is sketching in the design phase? What is the value in having a clear system to picking the best solution? What is the value in a stepwise approach to the design process?

► **Assignment 3: Alphabet of lines** Draw and label the Alphabet of Lines from Section 2.7 of Text.

► **Assignment 4: Title Block.** Draw the three title blocks from Text for A, B and C sized sheets.

► **Assignment 5: Structure Sketch.** Outcomes: Understand and know why sketching is important in Graphic Communication. Understand the relationship between seeing, imaging, and representing. Acquire the basic skills and techniques of sketching. Learn to sketch straight lines and successful circles. Understand and know why sketching is important in Graphic Communication. Understand the relationship between seeing, imaging, and representing.
Acquire the basic skills and techniques of sketching. Learn to sketch straight lines and successful circles.

**Assignment 6: Widget Sketch.** Identical Outcomes to Assignment 5.

**Assignment 7: Multiview 1**

**Assignment 8: Multiview 2:**

**Assignment 9: Multiview 3:**

**Assignment 10: Multiview 4:**

**Assignment 11: Section 1**

**Assignment 12: Section 2**

**Assignment 13: Projected Auxiliary View** Follow the directions on page 266 and 267 to create a projected auxiliary view.

**Assignment 14: Auxiliary View of Inclined Ellipse** Follow the directions on page 268 in your book to create an auxiliary view of an inclined ellipse.

Last Syllabus Update: 8/29/2016