SEP 1995

Grande Prairie Regional College

Department of Science

EG 2100 Engineering Graphics 3.5(2-1-3) UT(3.5) Fall
Course Information

Calendar Description: EG 2100 Engineering Graphics 3.5(2-1-3) UT(3.5)
Sketching, drafting and interpretation of pictorials and multiviews of three-dimensional objects, visual design, introduction to scales, sectioning and dimensioning.
(CADD is required for 1/3 of the course credit.)

Instructor	Dr. Jaime P. Santiago J209, 539-2865
Lecture	MW 1:00 - 1:50 a.m. J227
Seminar	F 1:00 - 1:50 a.m. J227
Mechanical Drawing Lab AutoCAD Lab	RF 3:00 - 4:50 p.m., J203 RF 5:00 - 5:50 p.m., A313
Textbooks	**Fundamentals of Engineering Drawing, 11th Edition** by Warren J. Luzzader and Jon M. Duff (Prentice-Hall) **AUTOCAD WITH LAB APPLICATIONS** RELEASES 10, 11, AND 12 by S. R. Kyles
Laboratory Workbook	**Problems in Engineering Drawing for Design and Production 11th Edition** by Warren J. Luzzader, Jon M. Duff and Larry D. Goss

Grading:		
	Mechanical Drawing Lab Exercises	20%
	Midterm Exam (Mechanical Drawing)	14%
	Midterm Exam (AutoCAD)	6%
	Final Exam (Mechanical Drawing)	35%
	AutoCAD Quizzes	5%
	AutoCAD Assignments	5%
	AutoCAD Lab Exam	5%
	AutoCAD Project	10%

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AutoCAD Seminars and Quizzes:

AutoCAD seminars will be held every Friday morning from 11:00 - 11:50 a.m. to highlight the important points of the units assigned for that week, i.e., the students must have done the assigned units before class to be able to participate in the discussion. Students have to work on the assigned units on their own time. The computer lab will generally be available in the evenings. At the start of every seminar session students will write a 10 minute multiple choice quiz on the units assigned for that week.

AutCAD Assignments:

There will be approximately 10 sets of AutoCAD assignments in this course. Assignments will be marked in the lab during the CAD portion of every lab period. The instructor reserves the right to mark all assigned problems or only some randomly chosen problems. To test the students knowledge of DOS and AutoCAD, each student will load the AutoCAD software and load any assignment drawing requested by the instructor. The instructor may also asked the student to modify some part of the drawing to further test the student's knowledge of AutoCAD commands covered in the unit.

AutoCAD Project:

Groups of two students each will submit a project proposal before midterm exam week. The project should be an engineering application. All projects will be one of two types. Plan A projects will include a full report on a relatively simple engineering design problem complete with all necessary drawings and documentation. The problem must be an original one. In Plan B, the emphasis is on customization of AutoCAD software. The engineering design problem need not be an original one but AutoCAD must be customized for the particular engeering application area. Both project types will also include a slide show presentation. Students who combine plans A and B will receive a bonus of up to 5%. The project is due at the end of the semester. More details including limitations and formats will be provided later in the semester.

Midterm Examination:

The mechanical drawing midterm exam is tentatively scheduled for **19 October, 1995 from 3:00 p.m. to 5:50 p.m.** Arrangements will be made with the math instructor to allow all students to write the exam at the same time. AutoCAD midterm exam is scheduled for **20 October, 1994 from 11:00 a.m. to 11:50 a.m.** in the regularly assigned lecture room.

Final Examination:

Mechanical drawing final exam is 3 hours long. Dates and times will be announced later by the registrar's office. Any conflicts should be reported to the registrar. There is no written AutoCAD final exam. Instead, the students will be asked to draw and print/plot a detail drawing using AutoCAD within a 3 hour lab time limit during the last week of regular classes.

Essential Equipment:

0.5 mm and 0.3 mm mechanical drafting pencils
pencil lead refills: 0.3 mm (2H and 4H); 0.5 mm (F or HB and 2H)
Or drawing pencils (F, 2H, 4H) and pencil sharpener
eraser (e.g., MARS plastic)
scales: engineers (decimal inch) scale
metric scale (may be fan type or triangular)
45° triangle (6" or 8")
30°- 60° triangle (6" or 8")
protractor

compass
masking tape
3.5" HD (1.44 MB) floppy diskettes

Recommended Optional Equipment

erasing shield
divider
Ames lettering guide
dusting brush

Textbook Reading: Fundamentals of Engineering Drawing

Week	Subject	Chapter	Sections
1	Introduction, Drawing Instruments, Alphabet of Lines, Linewidths, Parallel, Perpendicular and Inclined Lines	1 2	All sections 2.1 - 2.13
2	Engineers, metric and architect's scales, Vertical and Inclined Lettering	2	2.24 - 2.25 2.34 - 2.42
3	Multiview Sketching	4 5 6	4.1 - 4.6 5.1 - 5.7, 5.9 - 5.14 6.5 - 6.16
4	Orthographic Projection	5	5.15 - 5.40
5	Engineering Geometry	3	3.1 - 3.40
6	Sectional Views	7	All sections
7	Auxiliary Views, Bearing, Slope, % Grade, Cut and Fill, Strike and Dip	8	All sections plus supplementary handouts
8	Descriptive Geometry	9	9.1 - 9.30
9	Isometric and Oblique Projection	11	11.1 - 11.22
10	Dimensionsing, Limits and Tolerances	13	13.1 - 13.25
11	Development and Intersections	10	All sections
12	Threads, ISO and ANSI standards	14	14.1 - 14.17
13	Design Process Detail drawing, assembly drawing	12 16	12.1- 12.20 16.1 - 16.20
14	Graphs and Charts Charting using MS Excel Software	19	19.1 - 19.20

Mechanical Drawing Lab Schedule

Week	Date	Exercise No.	Subject
1	Sep 7/8		Introduction to labs. Introduction to DOS and AutoCAD software.
2	Sep 14/15	3(Parts 1 & 3) 4(Parts 1 & 3) 6(Parts 1 & 2) 7(Parts 1 & 2)	Inclined Lettering Vertical Lettering Metric Scale Decimal Inch Scale
3	Sep 21/22	15 and 17	Multiview Sketching
4	Sep 28/29	20(Parts 1, 2 and 3) 21(Parts 1, 2 and 3)	3-view orthographic with missing line 3-view orthographic with missing view
5	Oct 5/6	10	Geometric Construction
6	Oct 12/13	31, 33 and 34(Section A-A only)	Sectional Views
7	**Oct 19 (Thursday)**	**Midterm Exam**	**Exam for whole class. All material up to sectional views.**
8	Oct 26/27	27, 29	Auxiliary Views
9	Nov 2/3	67, 68	Descriptive Geometry
10	Nov 9/10	57, 58	Isometric and Oblique Pictorials
12	Nov 16/17	35, 36	Dimensioning
13	Nov 23/24	62, 65	Development and Intersection
14	Nov 30/Dec 1	**AutoCAD Lab Exam**	**AutoCAD Lab Exam**

AutoCAD Assignments

Week	Chapter	Date Due	Problems
2	1 - 3	Sep 14/15	M1, C2 , A3 do not dimension any drawing
3	4 - 6	Sep 21/22	E4, A5, C6
4	7 - 9	Sep 28/29	M7 (ignore rocker arm), M8 (Title Block only, assume A size paper), C9
5	10, 11, 13, 14	Oct 5/6	E10 (Step 1 only), Printer plot E10, E13(generate new title block), E14
6	15, 16, 19, 20	Oct 12/13	M15, E16, M19(Macro 1), Chapter 20 Exercise (skip step 4)
7	**No CAD assignment**	Oct 19/20	**Midterm Exam Week**
8	21, 22, 23	Oct 26/27	E21, C23
9	25, 26, 27	Nov 2/3	Chapter 25 No. 1, 18, A26, A27 (upper cabinets and range hood only)
10	28, 29, 30	Nov 9/10	A28, A29 (show 1 room only), A30 (no carpeting)
11	31, 32, 33	Nov 16/17	A31, C32
12	34, 35, 36	Nov 23/24	C34, calculate mass and centroid of C34
13		Nov 30/Dec 1	**AutoCAD lab exam**