The American University in Cairo
MENG 215 - Mechanical Engineering Drawing (1 cr.)
Course Syllabus
Fall 2003

Instructor: Dr. Hesham Hegazi
Office: New Falaki Building, room 517 (FLAC 517)
Phone: 797-5546
Email: hhegazi@aucegypt.edu
Class Hours: Sunday 12:00-2:55 pm and Sunday 3:00-5:55pm

References:
1- Lecture Notes
6- Any book under the title of Mechanical Drawing or Engineering Drawing and Design.

Course description:
One three hour lab period. Perquisites: ENGR 115. Offered in fall and spring.
This course covers the following topics in mechanical engineering drawing: Computer-Aided Drafting, mechanical details and assembly drawings, working drawings, geometrical tolerances, welding symbols and details, introduction to 3D modeling and introduction to civil and architectural drawings.

Prerequisites:
Students entering this course should understand and be able to:
- Visualize and produce pictorial drawings and orthographic views.
- Make the proper sectional views and adding dimensions.
- Produce Computer-Aided Drawings and good quality free hand sketches.
Meeting these prerequisites is demonstrated by having successfully completed the ENGR115 course.

Expected Outcomes:
After completing this course, students should be able to:
1. Produce quality Computer-Aided assembly drawings.
2. Produce quality free-hand sketches of assembly drawings.
3. Produce quality working drawings.
4. Produce steel construction drawings.
5. Represent the details and function of the fundamental mechanical elements and components such as:
a- Fasteners (Bolts, nuts and bolted joints)
b- Shafts
c- Keys, feathers and couplings
d- Pulleys and gears
e- Welded joints
f- Simple workshop tools like a machine vise

**Computer Usage:**
Students should use **AutoCAD 2000** to produce orthographic projection and sectional views of the assembled mechanical components as well as working drawings and simple 3D models.

**Lab Topics:**
1. Introduction, review on Orthographic Projection and Sectioning (1 Week)
2. Mechanical details and Conventions (1 Week)
3. Assembly drawings (6 Weeks)
4. Working Drawings (2 Weeks)
5. Steel Construction (2 Weeks)
6. 3D modeling (1 Week)

**Lab Project:**
Students should select a simple machine or mechanical system, and submit an assembly drawing and detailed working drawings of its parts using Computer-Aided Drafting package.

**Grading Policy:**
Grade 1: Lab assignment and homework 40%
   1.1 Assignment 1 and 2 on Projection, Sectioning and Fasteners
   1.2 Assignment 3 to 8 on assembly drawing
   1.3 Assignment 9, 10 on working drawing
   1.4 Assignment 11, 12 on steel construction
   1.5 Assignment 13 on 3D modeling
Grade 2: Lab project 10%
Grade 3: Test #1 15%
Grade 4: Text #2 15%
Grade 5: Final Exam 20%
## Course Schedule

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<td>Introduction to course, review on Projection, Sectioning, and AutoCAD 2000</td>
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<td>Sept 14</td>
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<td>3</td>
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<td>Assembly Drawing, Fasteners</td>
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<td>Sept 28</td>
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<td>Oct. 12</td>
<td>Assembly Drawing, Fits and Tolerances</td>
<td>1&lt;sup&gt;st&lt;/sup&gt; Mid-Term Exam.</td>
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<td>Oct. 26</td>
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<td>9</td>
<td>Nov. 2</td>
<td>Assembly Drawing, types of bearings</td>
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<td>Nov. 9</td>
<td>Working Drawing, Shafts, belts</td>
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