1. **Course title:**
   Engineering Graphics and Design I

2. **Prerequisite:**
   Exit or exemption from all Learning Support or ESL requirements except ENSL 0091
   MATH 1111 with a grade of “C” or better

3. **Textbook:**
      Faculty Y. D. Kim, A. Honkan, and V. Bennett (McGraw-Hill)
   2. Tutorial Guide to AutoCAD 2014, Shawna Lockhart, SDC publications

4. **Catalog Description:**
   An introduction to engineering graphics and design, this is the first of a two-course sequence,
   offering hands-on instruction in the use of an industry-leading computer-aided design software system
   to produce two-dimensional drawings. Topics include the fundamentals of engineering graphics and
   design, geometric construction, the engineering design process, and drawing composition with emphasis
   on industry practice.

5. **Course objective: (related to CAD)**
   - Explain the advantages of computer-aided design/drafting (CAD).
   - Use the menu structure and data input conventions of a CAD system to create, view, edit,
     and plot engineering drawings.
   - Use the basic two-dimensional entity draw commands.
   - Use the basic two-dimensional edit and inquiry commands.
   - Use basic display controls needed for viewing two-dimensional drawings.
   - Use layers and other supplied drawing aids.
   - Use the basic dimensioning commands.
   - Print, plot, and present engineering designs using CAD software.
   - Read and create working mechanical, architectural, schematic, and manufacturing
     drawings.
   - Use and understand the principles of orthographic projection.

*** Please see teaching guide for textbook #1
6. General notes:

   a. Students should be assigned substantial number of practice exercises in class/home assignment to achieve competency in the use of commands to create and edit two-dimensional drawings. Additional resources are available on the WEB e.g. www.mhhe.com/leach

   b. A project in the area of student’s choice or as decided by the instructor that employs at least 80-90% of all the commands of the software that were covered in the course should be assigned. The instructor must ensure the project selected by a student can be completed within reasonable period of about three class sessions.

   c. The evaluation procedure is mandatory for the grade for credit students and optional for non-credit students.

7. Course Outline:

   - Introduction to the AutoCAD® Software: Chapter 1 all sections
   - Basic Construction Techniques: Chapter 2 all sections
   - Basic Editing and Plotting Techniques: Chapter 3 all sections
   - Geometric Constructions: Chapter 4 all sections
   - Template Drawings and More Plotting: Chapter 5 all sections
   - 2D Orthographic Drawings: Chapter 7 all sections
   - Dimensioning: Chapter 8 all sections
   - Section and Auxiliary Views: chapter 9 all sections
   - Blocks, Design Center, and Tool Palettes: Chapter 10, sections on using inserting and exploding blocks and other topics time permitting.

It is recommended that students take this and or ENGR1603 course before they register for any other engineering course in engineering program.

7. Evaluation:

   The emphasis should be on measuring the level of expertise achieved in applying the software commands to successfully reproduce 2-dimensional drawings. The details of grade determination are flexible however one recommended procedure would be to weigh the four components as follows:

   The course grade is to be determined by the individual instructor by a variety of evaluation techniques consistent with the overall college policy including the class attendance. The procedure should include:
   • At least three in-class assessments (tests or quizzes) -30%
   • Two projects -30%
   • Classwork and homework - 10%-15%
   • Comprehensive final examination - 25% to 30%.

Projects should be structured in such a way that a summary of the material covered during the semester can be demonstrated. Students, with the approval from the instructor,
should select their own final drawing projects. The instructor must ensure that the project approved employs 80% to 90% of all commands of the software covered in the course.

Created Date: May 2014
Effective date: August 2014

Created by: Anant Honkan