1. *Course number and name*
   ENGR 101: Engineering Graphics Lab

2. *Credits and contact hours*
   1 credit hour; one 2-hour-45-minute lab session/week

3. *Instructor's or course coordinator's name*
   Instructor: Amir Tabrizi, Lecturer

   Course coordinator: Zhaoshuo Jiang, Professor of Civil Engineering

4. *Text book, title, author, and year*
   Gary R. Bertoline, *Introduction to Graphics Communications for Engineers*, 4th Edition. McGraw–Hill, 2002.
   Mark Dix. *Introduction to AutoCAD*, 2nd Edition. Prentice Hall, 2000–2005. (optional)

   a. *other supplemental materials*
      James D. Bethune. *Engineering Graphics with AutoCAD 2017*. Peachpit Press, 2016.
      Mark N. Horenstein. *Design Concepts for Engineers, 5th Edition*. Pearson, 2015. (Optional References).

5. *Specific course information*
   a. *brief description of the content of the course (catalog description)*
      Engineering drawing as means of communication. Principals of engineering graphics. Free hand sketching, and introduction to AutoCAD and AutoCAD commands. Engineering drawing with AutoCAD; orthographic projection; lines and dimensioning; reading blueprints; normal, inclined and cylindrical surfaces; sectional views

   b. *prerequisites or co-requisites*
      ENGR 100: Introduction to Engineering (may be taken concurrently

   c. *indicate whether a required, elective, or selected elective course in the program*
      Required for Civil Engineering and Mechanical Engineering

6. *Specific goals for the course*
   a. *specific outcomes of instruction, ex. The student will be able to explain the significance of current research about a particular topic.*
      - Students will have a basic knowledge of orthographic projections and sectional views.
      - Students will have a basic knowledge of isometric projection.
      - Students will use AutoCAD software to generate drawings.
      - Students will learn drafting geometry, dimensions, engineering graphics, tolerances, and the interpretation of blueprints.

b. explicitly indicate which of the student outcomes listed in Criterion 3 or any other outcomes are addressed by the course.
Course addresses ABET Student Outcome(s): k.

7. Brief list of topics to be covered

- Principles of Engineering Graphics
- Free–hand lettering
- Free–hand sketching
- Orthographic projection
- Normal surfaces
- Inclined surfaces
- Cylindrical surfaces
- Sectional views
- Lines and dimensions
- Tolerances
- CAD drawings
- Drafting geometry with CAD software
- Isometric drawings using CAD software
- Interpreting blueprints