1. *Course number and name*

**ENGR 101: Engineering Graphics Lab**

1. *Credits, contact hours, and categorization of credits in Table 5-1*

1 credit hour; one 2-hour-45-minute lab session/week; engineering topic.

1. *Instructor’s or course coordinator’s name*

Instructor: Mera Horne/Yuanhong Chen, Lecturer

Course coordinator: Zhaoshuo Jiang, Professor of Civil Engineering

1. *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)

1. *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).

1. *Specific course information*
2. *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

1. *prerequisites or co-requisites*

ENGR 100: Introduction to Engineering (may be taken concurrently

1. *indicate whether a required, elective, or selected elective course in the program*

Required for Civil Engineering and Mechanical Engineering

1. *Specific goals for the course*
2. *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.

1. *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): 2.

1. *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