North South University

Department of Electrical and Computer Engineering

Course Code	**EEE 154**
Course Title	**Engineering Drawings**

Semester	**Summer 2018**

Course Description   Introduction: lettering, numbering and heading; plane geometry. Projection (Solid Geometry). Development and true shape: cube, pyramid, cone, prism; section and true shape. Isometric drawing, oblique drawing. Plan, elevation and section of engineering structures. Introduction to Computer Aided Design (CAD).

Credit	**1**

Class Meetings   Thursday 08:00 to 09:30 am (Section 07)
Thursday 09:40 to 11:10 am (Section 08)

Section   07 & 08

Course Teacher   Mujtaba Ahsan (Mun), Associate Professor
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Course Objectives   Introduce the students to the basics of engineering drawing and communication using freehand sketches and computer-aided drawing.

Learning Outcomes   Covers ABET student learning outcome (g) an ability to communicate effectively
- Demonstrate effective nonverbal communication skills using technical drawings
- Present work effectively to a range of audiences using technical drawings

Lecture Plan   (*Note that the actual lecture sequences may not follow the order shown*)

Introduction
- **Lecture 1:** What is technical drawing, what are the common terms used in technical/ engineering drawings: projections, part drawings and graphical conventions (exercise of free hand sketching)

Two Dimensional Engineering Drawing
- **Lecture 2:** Two-dimensional drawings the ability to draw shapes, use line types, colors, text etc. to create two-dimensional drawings. Output of drawing in various formats – vector and pixel graphical formats and their technical differences

- **Lecture 3:** Application of two-dimensional drawing skills to draw flowcharts to graphically organize and communicate engineering ideas for software logic, website design etc. using illustration software (Adobe Illustrator). Giving output to image files and vector files.

- **Lecture 4:** Learning to create drawing sheet and layout, various sheet sizes and technical drawing conventions, creating a standard technical drawing sheet, student's own layout and nameplate

- **Lecture 5:** Learning to draw two dimensional electrical circuit diagrams and presenting them in a standard drawing sheet with nameplate using Adobe Illustrator software

  MID TERM

- **Lecture 6:** Introduction to different drawing line types and drawings scales and dimensioning of drawings

  Three Dimensional Engineering Drawing
- **Lecture 7:** Learning to draw in 3 dimensions: part view diagrams, orthographic projections, isometric and axonometric views, top, front, back, right and left side projection drawings using a three dimensional drawing software (Google SketchUp). Creating a drawing Layout of a 3 dimensional mechanical part.

- **Lecture 8:** Creating three-dimensional objects and obtaining isometric view and projection views, including sectional views and setting them up in a drawing layout. Giving output of drawing in image and vector formats.

  QUIZ ON MECHANICAL DRAWING

- **Lecture 9:** Learning to create electrical fixture layout diagrams of a building. Demonstration of typical contents of an electrical drawing required from electrical engineering processionals for communication with building contractors, clients, architects and related bodies. Use of software AutoCAD

- **Lecture 10:** Practice simple exercise on creating electrical fixture layout and wiring diagram of a small room using AutoCAD.

Assessment   Student works will be assessed approximately based on the following scale:

Class work/performance	05%
Class attendance	10%
Quiz 01	10%
Quiz 02	10%
Mid Term	20%
Final Examination (3 hours)	45%

Grading may be done on a weighted scale.

Suggested Reading   BERTOLINE, Gary R., WIEBE, Eric N & MILLER Craig L.: *Fundamentals of Graphics Communication*. 3rd Ed. McGraw-Hill, Boston. 2002.