BOROUGH OF MANHATTAN COMMUNITY COLLEGE
City University of New York

Department of Science

Title of Course: Engineering Graphics - AutoCAD
ESC 131 Section 114
SPRING 2017
Credits 2

Class hours 1
Lab hours 3
Instructor Information
Name: Kibrewossen Tesfagiorgis, PhD, PE
Office: Tu 12-1; Th 2-3 & Fr 3-4 PM
Room: N686
Email: ktesfagiorgis@bmcc.cuny.edu

ESC131 Engineering Graphics – AutoCAD

Course Description
This course provides the students with a basic working knowledge of Computer Aided Drafting. Through the use of engineering drawings, students develop skills in the use of mainstream computer assisted drawing software like AutoCAD for Civil Engineering. Methods and procedures are developed for solving practical drafting problems encountered in construction projects using Computer Aided Drafting methods. Students will learn the sequence of commands and/or steps required to start, create, save and plot CAD drawings. Skills are also developed in the reading and interpretation of typical working drawings from construction projects.

Basic Skills Prerequisites: MAT 056

Required Textbook: Mastering AutoCAD 2015 and AutoCAD LT 2015: Autodesk Official Press, George Omura with Brian C. Benton

Other resources: AutoCAD 2008 for Architecture, Alan Jefferis, Michael Jones and Tereasa Jefferis, Autodesk Press, Autodesk Press Manual

Evaluation & Requirements of Students:
The student is evaluated on the basis of his or her performance on a series of homework drawings worth a total of 75% of the final grade. The student is required to turn in homework drawings for each drawing performed. The homework is due one week following the performance of the experiment. Midterm (10%) and final exams (15%) account for the remaining 25% of the final grade.

Course student learning outcomes:

Measures	Learning Outcomes
1. Graded AutoCAD homework drawings and exams	• Design two dimensional drawings employing geometrical knowledge and AutoCAD tools.
2. Graded AutoCAD homework drawings and midterm exam.	• Prepare a complete floor plan using AutoCAD
3. Graded AutoCAD homework drawings and final exam	• Create a basic civil engineering working drawing suitable for fieldwork using AutoCAD

Below is the college's general education learning outcomes, the outcomes that are checked in the left-hand column indicate goals that will be covered and assessed in this course. (Check at least one.)

	General Education Learning Outcomes	Measurements (means of assessment)
☐	**Communication Skills-** Students will be able to write, read, listen and speak critically and effectively.	
X	**Quantitative Reasoning-** Students will be able to use quantitative skills and the concepts and methods of mathematics to solve problems.	Graded homework and exams will measure how students apply mathematics to design two dimensional drawings.
☐	**Scientific Reasoning-** Students will be able to apply the concepts and methods of the natural sciences.	
☐	**Social and Behavioral Sciences-** Students will be able to apply the concepts and methods of the social sciences.	
☐	**Arts & Humanities-** Students will be able to develop knowledge and understanding of the arts and literature through critiques of works of art, music, theatre or literature.	
☐	**Information & Technology Literacy-** Students will be able to collect, evaluate and interpret information and effectively use information technologies.	
☐	**Values-** Students will be able to make informed choices based on an understanding of personal values, human diversity, multicultural awareness and social responsibility.	

ESC 131 Lecture Topics:

Week	Topic	Reading	Homework
1	Introduction to Operating Systems, AutoCAD Interface, Menus, Command Window, Text Window, Cursor Menu, Toolbars, Saving files, Units, Coordinates Drawing Scale, Model Space, Drawing Setup	Chapters 1,2,3	Dwg. #1
2	Commands: Lines, Circle, Donuts, Offset, Move, Erase, Trim, Extend, View (zoom)	Chapters 2,3,4,6,8	Dwg. #2
3	Commands: Mirror, Array, Measure, Rotate, Divide, Lengthen, Point Style. Introduction to orthogonal and section views.	Chapter 10	Dwg. #3
4	Commands: Chamfer, Fillet, Arc, Stretch, Modify, Break, Scale	Chapters 9, 10	Dwg. #4
5	Layers, Line types, Introduction to Plotting	Chapters 5, 13	Dwg. #5
6	Dimensions. Application to floor plans	Chapter 17	Dwg. #6
7	Review for Mid Term. Mid Term exam		Dwg. #7
8	Dimensions, object snaps, grips and Viewports.	Chapters 7,17,18	Dwg. #8
9	Text	Chapter 15	Dwg. #9
10	Text, leaders. Application to structural detailing and framing drawings.	Chapter 16	Dwg. #10
11	Polylines	Chapter 11	Dwg. #11
12	Hatching. Application to beams, columns, and foundations.	Chapter 14, 18	Dwg. #12
13	Blocks. Adding borders and title blocks on a floor plan	Chapter 18	Dwg. #13
14	Wblocks		
15	Final Exam		

College Attendance Policy

At BMCC, the maximum number of absences is limited to one more hour than the number of hours a class meets in one week. For example, you may be enrolled in a three-hour class. In that class, you would be allowed 4 hours of absence (not 4 days). In the case of excessive absences, the instructor has the option to lower the grade or assign an F or WU grade.

Academic Adjustments for Students with Disabilities

Students with disabilities who require reasonable accommodations or academic adjustments for this course must contact the Office of Services for Students with Disabilities. BMCC is committed to providing equal access to all programs and curricula to all students.

BMCC Policy on Plagiarism and Academic Integrity Statement

Plagiarism is the presentation of someone else's ideas, words or artistic, scientific, or technical work as one's own creation. Using the idea or work of another is permissible only when the original author is identified. Paraphrasing and summarizing, as well as direct quotations, require citations to the original source. Plagiarism may be intentional or unintentional. Lack of dishonest intent does not necessarily absolve a student of responsibility for plagiarism.

Students who are unsure how and when to provide documentation are advised to consult with their instructors. The library has guides designed to help students to appropriately identify a cited work. The full policy can be found on BMCC's website, **www.bmcc.cuny.edu.** For further information on integrity and behavior, please consult the college bulletin (also available online).