HOSTOS COMMUNITY COLLEGE
DEPARTMENT OF MATHEMATICS AND COMPUTER SCIENCE

CMT 110	ENGINEERING GRAPHICS & INTRODUCTION TO AUTOCAD I
CREDIT HOURS:	2.0
EQUATED HOURS:	2.0
CLASS HOURS:	3.0 (1 Class Hour, 2 Lab Hours)
PREREQUISITE:	ESL 86-88 or ESL 91 or higher, or ENG 100 or higher and MAT150 or MAT150 SI or higher

REQUIRED TEXT(S): AutoCAD 2019 and *AutoCAD LT 2019 Essentials:* Autodesk Official Press, Onslott, Wiley 2018. (ISBN: 978-1-119-49503-1)

REFERENCE(S):

1. *Mastering AutoCAD Civil 3D 2015*, by Cyndy Davenport, Ishka Voiculescu, Autodesk Official Press 2014. (ISBN 978-1-118-86209-4)
2. *Architectural Graphic Standards: Student Ed.*, by Charles George Ramsey, Harold Reeve Sleeper, 11th Edition, 2008. (ISBN: 978-0-470-08546-2)

DESCRIPTION: Introduction to the fundamental principles of drawing required in the construction field. Students will be introduced to presenting designs using engineering graphics in CAD (Computer Aided Design). Exposure to lab work will enable students to execute setting units and scaling in engineering graphics, tolerance limits, layering and to gain efficiency in working with editing tools. Students will be expected to gain expertise in in rendering two-dimensional CAD drawings.

GRADING CRITERIA:

Assignments (7 x 10%)	70%
Project	20%
Final Exam	10%
	100%

GRADES: A, A$^-$, B$^+$, B, B$^-$, C$^+$, C, D, I, F.

Program Criteria

ABET, Inc. is the nationally recognized accrediting body for engineering technology programs. The Department has adopted the most current ABET Program Criteria. Graduates of a construction degree programs typically specify project methods and materials, perform cost estimates and analyses, and manage construction activities. The curriculum provides instruction in the following areas:

- utilization of techniques that are appropriate to administer and evaluate construction contracts, documents, and codes;
- estimation of costs, estimation of quantities, and evaluation of materials for construction projects;
- utilization of measuring methods, hardware, and software that are appropriate for field, laboratory, and office processes related to construction; and

- application of fundamental computational methods and elementary analytical techniques in sub-disciplines related to construction engineering.

Student Learning Outcomes

The Department has adopted the most current ABET student outcomes criteria. Student performance in this course will be assessed based on the following learned capabilities:

- an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve well-defined engineering problems appropriate to the discipline (Criterion 3.A.1.); and
- an ability to apply written, oral, and graphical communication in well-defined technical and non-technical environments; and an ability to identify and use appropriate technical literature (Criterion 3.A.3.).

COURSE OUTLINE

Week	Topic	Assignment
1	**Introduction to Drafting** – Introduction of Construction drawing basics and history of manual drafting	
2	**Introduction to Drafting Basics** – lettering basics and drafting equipment, and basic geometric constructions. Prepare a drawing designed to teach students proper architecture lettering and linework.	Assignment 1
3	**Introduction to Drafting Basics** – basic geometric constructions, orthographic projection, scale drawings and dimensioning. Prepare a drawing designed to teach students skills in proper drafting techniques and equipment used.	Assignment 2
4	**Introduction to AutoCAD** – What is CAD, fundamental CAD concepts, and first look at AutoCAD (Chapter 1)	
5	**Quick Start Tutorial** – Creating a new drawing, model space and layout space, communicating with AutoCAD (the command line and dynamic input), navigating and drawing, object properties and layers, dimensioning (Chapter 2 and 3)	
6	**Controlling the Drawing Display** – continuation of setting up a drawing and understanding of viewports scaling and freezing layers. (Chapter 2 and 3)	
7	**Basic Drawing Commands –** drawing lines, polylines, arcs, and shapes	Assignment 3
8	**Working drawings** – Introduction to preparing a site plan for a residential project. During the preparation of the each week's 'working drawing' session, students are introduced to additional AutoCAD commands and features.	
9	**Working Drawings (Site Plan)** – Drawing of site plan for residential project.	
10	**Working Drawings (Floor Plan)** – Drawing of residential floor plan.	Assignment 4
11	**Working Drawings (Elevations)** – Drawing of exterior and interior elevations of residential structure.	Assignment 5
12	**Working Drawings (Cross sections)** – Drawing of two cross sections of residential structure.	Assignment 6

Week	Topic	Assignment
13	**Working Drawings (Wall Sections)** – Drawing of detail wall sections of residential structure.	Assignment 7
14	**Final Project** – Student will field measure an existing building/structure (TBD)	Final Project
15	**Final Exam and Final Project Submission**	

Note that this syllabus is a suggested timeline only. Instructors are responsible for covering all of the material in the syllabus, but they may do so at their own pace.