

**HOSTOS COMMUNITY COLLEGE
DEPARTMENT OF MATHEMATICS**

CMT 140 APPLIED COMPUTER AIDED DESIGN (AUTOCAD II)
CREDIT HOURS: 2.0
EQUATED HOURS: 2.0
CLASS HOURS: 4.0 (4 Lab Hours)
PREREQUISITE: CMT 110 (Engineering Graphic and Introduction to Autocad I)

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)

DESCRIPTION: This course advances skills and working knowledge of computer-aided drafting techniques. Students build on their basic knowledge of both civil engineering and construction drawing principles and standards by completing lab work through the use of residential and commercial drawings. Students will gain expertise in using advanced editing and drawing commands to develop three-dimensional (3D drawing and modeling techniques) CAD drawings.

GRADING CRITERIA:

Assignments (4 x 20%)	80%
Midterm Exam	10%
Final Exam	10%
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	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	Review of Basic CAD – Review of basic concepts, entities, hatching and gradients (Chapters 2, 3, 4 and 8)	
2	Drawing Curves – drawing and editing of polylines, splines, curved polylines and ellipses (Chapter 18)	Assignment 1
3	Blocks – understanding block definition, rotating, unblocking and redefine, editing, nesting, Wblocks (Chapter 5)	
4	Blocks and Xrefs (External Reference) – understanding xrefs, inserting xrefs, clipping xrefs and editing xrefs (Chapter 7)	Assignment 2
5	Layouts – review of layouts and advance setups (Chapter 9)	
6	Work Session – review for Midterm	
7	Midterm Exam	
8	Annotative Objects –introduction to the annotation scale control panel, and setting the annotative scale and adding text (Chapter 9)	Assignment 3
9	Attributes – creating, addition and editing attributes (Chapter 12)	
10	Plotting (Printing) Basics & field basics and Tables – basics of plotting; & adding, creating and editing tables (Chapter 8, 10 and 15)	
11	Introduction to 3D models – basic concepts for creating and modelling 3D drawings (Chapter 20)	
12	Advance 3D features – advanced drawing and editing features (Chapter 21)	Assignment 4
13	Rendering 3D drawings – visualizing 3D solids (Chapter 22)	
14	Work Session – review for Final	
15	Final Exam	

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.