Spring 1-1-2020

MET 105-102: Applied Computer Aided Design

Mark Lanfrank

New Jersey Institute of Technology
Department of Engineering Technology
MET 105 Applied Computer Aided Design

COURSE NUMBER	MET 105
COURSE NAME	Applied Computer Aided Design
COURSE STRUCTURE	1-2-2 (lecture hr/wk - lab hr/wk – course credits)
COURSE COORDINATOR/ INSTRUCTOR	Dr. A. Sengupta/ Mark Lanfrank, PE
COURSE DESCRIPTION	A second course in Computer Aided Design (CAD), additional AutoCAD topics include blocks, move and copy, array, mirror, text, text styles, 3D and isometric modes. Upon successful completion of this course, students should be able to use advanced AutoCAD commands to quickly and efficiently produce 2D and 3D drawings, and also be able to modify the AutoCAD environment (e.g., menues, macros, etc.) to boost productivity.
PREREQUISITE(S)	MET 103
COREQUISITE(S)	None
REQUIRED, ELECTIVE OR SELECTED ELECTIVE	Required
REQUIRED MATERIALS	AutoCAD and Its Applications Basics 2020, 27th edition. Terence M.Shumaker, David A. and David P. Madsen, Goodheart-Willcox Publisher ISBN: 9781635638646
COMPUTER USAGE	Software: AutoCAD.
COURSE LEARNING OUTCOMES (CLO)	By the end of the course students should be able to: 1. Read a blue print. 2. Create standard orthographic views of a three dimensional object by using geometric tools. 3. Create a three dimensional object and standard orthographic views by using AutoCAD software. 4. Show dimensions and tolerances of an object by following the rules. 5. Use AutoCAD to create Sectional, Auxiliary and Detail/Break views of a three dimensional object.
CLASS TOPICS	Workspaces, Toolbars, Pallets/Drawing Templates, Command Entry, Point Coordinates Entry, Line Standards & Layers, View Tools, Text Styles/Placement Tools, Arraying & Patterning, Polyline, Spline, Dimension Styles, Tables, Section Views and Graphic Patterns, Blocks Creation and Insertion, Layout Setup

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STUDENT OUTCOMES

The Course Learning Outcomes support the achievement of the following MET Student Outcomes and TAC of ABET Criterion 9 requirements:

Student Outcome a - an ability to select and apply the knowledge, techniques, skills, and modern tools of the discipline to broadly-defined engineering technology activities.
Related CLO – 1 thru 5

Student Outcome d - an ability to design systems, components, or processes for broadly-defined engineering technology problems appropriate to program educational objectives.
Related CLO – 3 thru 5

GRADING POLICY

Note: Grading Policy may be modified by Instructor for each Section in the Course)

Projects & Homework	25 %
Tests	40 %
Final	30 %
Class Participation	5 %

Note: There are two exams during the semester. The Final Exam is comulative.

ACADEMIC INTEGRITY

NJIT has a zero-tolerance policy regarding cheating of any kind and student behavior that is disruptive to a learning environment. Any incidents will be immediately reported to the Dean of Students. In the cases the Honor Code violations are detected, the punishments range from a minimum of failure in the course plus disciplinary probation up to expulsion from NJIT with notations on students' permanent record. Avoid situations where honorable behavior could be misinterpreted. For more information on the honor code, go to http://www.njit.edu/academics/honorcode.php

STUDENT BEHAVIOR

- No eating or drinking is allowed at the lectures, recitations, workshops, and laboratories.
- Cellular phones must be turned off during the class hours – if you are expecting an emergency call, leave it on vibrate.
- No headphones can be worn in class, unless allowed by the professor. No video or audio recording of the class or material
- Unless the professor allows the use during lecture, laptops should be closed during lecture.
- During laboratory, if you are finished earlier, you must show the professor your work before you leave class
- Class time should be participative. You should try to be part of a discussion

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MODIFICATION TO COURSE The Course Outline may be modified at the discretion of the instructor or in the event of extenuating circumstances. Students will be notified in class of any changes to the Course outline.

PREPARED BY Mark Lanfrank, PE
COURSE COORDINATED BY Dr. A. Sengupta

CLASS HOURS

Tuesday 6:00 PM to 8:50 PM FENS 160

OFFICE HOURS

Wednesday 02:30 PM – 04:00 PM (by appointment only)
Tuesday 02:30 AM – 05:00 PM (by appointment only)

Or by appointment: **(973) 596-6072** or **ml56@njit.edu**

HOMEWORK & PROJECT - IMPORTANT

1. Homework sets are due one week after they are assigned. **Late Assignments will not be accepted.**
2. Projects are due on the dates indicated. No late projects will be accepted.

GRADING LEGEND

GRADE	NUMERIC RANGE
A	90 to 100
B+	85 to 89
B	80 to 84
C+	75 to 79
C	70 to 74
D	60 to 69
F	0 to 59

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MET 105 - COURSE OUTLINE

Week #	*Date*	*Topic*	*Book Chapter/ Exercises*
1	Jan. 21	Introduction to AutoCAD & its user interface Workspaces, Toolbars, Pallets/Drawing Templates	**Ch 1, 2 &3**
2	Jan. 28	Command Entry/Point Coordinates Entry, &/Help	**Ch 3 & 4** #3,#6,#11,#13& ,#5,#20,#22 – HMW#1
3	Feb. 4	Line Standards & Layers/View Tools	**Ch 5 & 6** #2,#3,#6, #8 &#5,#8#11 HMW#2
4	Feb. 11	Object Snap tools/AutoTrack/Multiview Drawings	**Ch 7 & 8** #6,#8,#9,#10 &#4,#7,#8- HMW#3
5	Feb. 18	Text Styles/Text Placement tools/Modification tools	**Ch 9, 10, 11** #6,#7,#8,#12 &#2,#10,#12 HMW#4 assignment
6	Feb. 25	Arraying & Patterning **Test #1**	**Ch 12** HMW#5 assignment
7	Mar. 3	Grips/Other selection tools/Polyline/Spline	**Ch 13, 14, 15**
8	Mar. 10	Dimension Styles/Linear, aligned, angular dims	**Ch 16 thru 20** HMW#6 assignment
9	Mar. 24	Tables, Section views and Graphic Patterns	**Ch 21, 22, & 23** HMW#7 assignment
10	Mar. 31	Blocks: Creation & insertion, Blocks with attributes **Project Due Beginning of Class**	**Ch 24, 25, 26** HMW#8 assignment
11	Apr.7	Layout setup, Plotting Layouts **Test #2**	**Ch 27, 28, 29** HMW#9 assignment
12	Apr. 14	Annotative Objects	**Ch 30, 31**
13	Apr. 21	External References	**Ch 31**- HMW#10 assignment
14	Apr.28	Introduction to 3D, UCS, Solid Primitives, Sheet sets, Miscellaneous topics	**Ch 32,33**
16	TBD	**FINAL EXAM**	