

Spring 1-1-2020

## **MET 105-002: Applied Computer Aided Design**

Wenjuan Zhu

Follow this and additional works at: <https://digitalcommons.njit.edu/saet-syllabi>

---

### **Recommended Citation**

Zhu, Wenjuan, "MET 105-002: Applied Computer Aided Design" (2020). *School of Applied Engineering and Technology Syllabi*. 86.

<https://digitalcommons.njit.edu/saet-syllabi/86>

This Syllabus is brought to you for free and open access by the NJIT Syllabi at Digital Commons @ NJIT. It has been accepted for inclusion in School of Applied Engineering and Technology Syllabi by an authorized administrator of Digital Commons @ NJIT. For more information, please contact [digitalcommons@njit.edu](mailto:digitalcommons@njit.edu).

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

<b>COURSE NUMBER</b>	MET 105
<b>COURSE NAME</b>	Applied Computer Aided Design
<b>COURSE STRUCTURE</b>	1-2-2 (lecture hr/wk - lab hr/wk – course credits)
<b>COURSE COORDINATOR/ INSTRUCTOR</b>	Dr. A. Sengupta/Dr. W. Zhu
<b>COURSE DESCRIPTION</b>	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., menus, macros, etc.) to boost productivity.
<b>PREREQUISITE(S)</b>	MET 103
<b>COREQUISITE(S)</b>	None
<b>REQUIRED, ELECTIVE OR SELECTED ELECTIVE</b>	Required
<b>REQUIRED MATERIALS</b>	AutoCAD and Its Applications Basics 2020, 27th edition. Terence M. Shumaker, David A. and David P. Madsen, Goodheart-Willcox Publisher ISBN: 9781635638646
<b>COMPUTER USAGE</b>	Software: AutoCAD.
<b>COURSE LEARNING OUTCOMES (CLO)</b>	By the end of the course students should be able to: <ol style="list-style-type: none"><li>1. Read a blue print.</li><li>2. Create standard orthographic views of a three dimensional object by using geometric tools.</li><li>3. Create a three dimensional object and standard orthographic views by using AutoCAD software.</li><li>4. Show dimensions and tolerances of an object by following the rules.</li><li>5. Use AutoCAD to create Sectional, Auxiliary and Detail/Break views of a three dimensional object.</li></ol>
<b>CLASS TOPICS</b>	Workspaces, Toolbars, Palettes/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

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

**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 Outcome0020d** - 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**

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

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

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

**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.
- 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

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

**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**                              Dr. W. Zhu  
**COURSE COORDINATED BY**              Dr. A. Sengupta

**CLASS HOURS**

Friday                      8:30 AM to 11:20 AM              MALL PC37

**OFFICE HOURS**

By appointment: wenjuan.zhu@njit.edu

**HOMEWORK & PROJECT - IMPORTANT**

1. Homework sets are due one week after they are assigned. Late penalty is minus 25% each week. Assignments more than two weeks late will not be accepted.
2. Projects are due on the dates indicated. No late projects will be accepted.

**GRADING LEGEND**

<b>GRADE</b>	<b>NUMERIC RANGE</b>
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

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

**MET 105 - COURSE OUTLINE**

<u>Week #</u>	<u>Date</u>	<u>Topic</u>	<u>Book Chapter/ Exercises</u>
1	Jan. 24	Introduction to AutoCAD & its user interface Workspaces, Toolbars, Palettes/Drawing Templates	<b>Ch 1, 2&amp;3</b> HMW#1
2	Jan. 31	Command Entry/Point Coordinates Entry, &/Help	<b>Ch 3 &amp; 4</b> HMW#2
3	Feb. 7	Line Standards & Layers/View Tools	<b>Ch 5 &amp; 6</b> HMW#3
4	Feb. 14	Object Snap tools/AutoTrack/Multiview Drawings	<b>Ch 7 &amp; 8</b> HMW#4
5	Feb. 21	Text Styles/Text Placement tools/Modification tools	<b>Ch 9, 10, 11</b> HMW#5 assignment
6	Feb. 28	Arraying & Patterning <b>Test #1</b>	<b>Ch 12</b> HMW#6 assignment
7	Mar. 6	Grips/Other selection tools/Polyline/Spline	<b>Ch 13, 14, 15</b> HMW#7 assignment
8	Mar. 13	Dimension Styles/Linear, aligned, angular dims	<b>Ch 16 thru 20</b> HMW#8 assignment
<b>SPRING BREAK 3/15-3/22</b>			
9	Mar. 27	Tables, Section views and Graphic Patterns <b>Project</b>	<b>Ch 21, 22, 23</b> HMW#9 assignment
10	Apr. 3	Blocks: Creation & insertion, Blocks with attributes	<b>Ch 24, 25, 26</b> HMW#10 assignment
<b>April 10 University Closed</b>			
11	Apr.17	Additional Dynamic Block Tools <b>Test #2</b>	<b>Ch 27</b> HMW#11 assignment
12	Apr. 24	Layout setup, Plotting Layouts	<b>Ch 28, 29</b> HMW#12 assignment
13	May 1	Annotative Objects , External References	<b>Ch 30, 31,</b> HMW#13 assignment
14	May 5 Tuesday	Introduction to 3D, UCS, Solid Primitives, Sheet sets, Miscellaneous topics	<b>Ch 32,33</b>
15	TBD	<b>FINAL EXAM</b>	