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. J. Sodhi/ Ramy Shamroukh
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	Technical Drawing 101 with AutoCAD 2025. Ashleigh Fuller, Antonio Ramirez, Douglas Smith, SDC Publications ISBN: 978-1-63057-656-1
COMPUTER USAGE	Software: AutoCAD.
COURSE LEARNING OUTCOMES (CO)	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

STUDENT OUTCOMES   The Course Learning Outcomes support the achievement of the following MET Student Outcomes:

Student Outcome (1) an ability to apply knowledge, techniques, skills and modern tools of mathematics, science, engineering, and technology to solve broadly-defined engineering problems appropriate to the discipline;
Related CO – 1 thru 5

Student Outcome (2) - an ability to design systems, components, or processes meeting specified needs for broadly-defined engineering problems appropriate to the discipline;
Related CO – 3 thru 5

GRADING POLICY

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

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

ACADEMIC INTEGRITY   "Academic Integrity is the cornerstone of higher education and is central to the ideals of this course and the university. Cheating is strictly prohibited and devalues the degree that you are working on. As a member of the NJIT community, it is your responsibility to protect your educational investment by knowing and following the academic code of integrity policy that is found at: NJIT Academic Integrity Code.

Please note that it is my professional obligation and responsibility to report any academic misconduct to the Dean of Students Office. Any student found in violation of the code by cheating, plagiarizing or using any online software inappropriately will result in disciplinary action. This may include a failing grade of F, and/or suspension or dismissal from the university. If you have any questions about the code of Academic Integrity, please contact the Dean of Students Office at dos@njit.edu."

GENERATIVE AI   Student use of artificial intelligence (AI) is permitted in this course for certain assignments and activities. It is not permitted to be used in the assignments noted by the instructor, as doing so would undermine student learning and achievement of course learning outcomes. Additionally, if and when students use AI in this course, the AI must be cited as is shown within the NJIT Library AI citation page for AI. If you have any questions or concerns about AI technology use in this

class, please reach out to your instructor prior to submitting any assignments.

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

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
Ramy Shamroukh / Dr. J. Sodhi

COURSE COORDINATED BY
Dr. J. Sodhi

CLASS HOURS
Thursday   6:00 PM to 8:50 PM   GITC 2400

OFFICE HOURS
By appointment:
E-mail ramy.shamroukh@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

NJIT ONLINE INFORMATION

The instructor will discuss these requirements on the first day of the course and/or post on their Learning Management System (LMS). Please become familiar
- Canvas: https://canvas.njit.edu/
- Zoom: https://njit-edu.zoom.us/
- Online Proctoring: https://ist.njit.edu/online-course-exam-proctoring

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MET 105 - COURSE OUTLINE

Week #	Date	Topic	Book Chapter/ Exercises
1	Jan 23	Review of Multiview Drawing (Chapter 2)	**Ch 2** HMW #1
2	Jan 30	Introduction to AutoCAD & its user interface Workspaces, Toolbars, Pallets/Drawing Templates (Chapter 4)	**Ch 4** Exercise 4-1 HMW#2
3	Feb 6	Draw, Modify, Text, and Settings Tools (Chapter 4)	**Ch 4** Exercise 4-2 HMW#3
4	Feb 13	Object Snaps, Plotting, and Drawing Projects (Chapter 4)	**Ch 4** HMW#4
5	Feb 20	Dimensioning Mechanical Drawings, Tolerance Basics (Chapter 5)	**Ch 5** HMW#5 assignment
6	Feb 27	Dimensioning With AutoCAD (Chapter 5) **Test #1**	**Ch 5** HMW#6 assignment
7	Mar 6	Dimensioning Architectural Drawings (Chapter 6)	**Ch 6** HMW#7 assignment
8	Mar 13	Isometric Drawings (Chapter 7)	**Ch 7** HMW#8 assignment
9	Mar 27	Sections (Chapter 8)	**Ch 8** HMW#9 assignment
10	Apr 10 (No Class on Apr 3 – Wellness Day)	Blocks (Chapter 9) **Capstone Project**	**Ch 9** HMW#10 assignment
11	Apr 17	**Test #2**	HMW#11 assignment
12	Apr 24	3D Modeling Basics (Chapter 10)	**Ch 10** HMW#12 assignment
13	May 1	Auxillary Views (Appendix E)	**Appendix E** HMW#13 assignment
14	May 6 (Tuesday on Thursday schedule)	GD&T Basics (Appendix D) Capstone Project Due	**Appendix D**
15	TBD	**FINAL EXAM**	