North Central State College

MASTER SYLLABUS	2025-2026

A. Academic Division: Engineering Technology, Business & Criminal Justice Division

B. Discipline: Mechanical Engineering Technology

C. Course Number and Title: MECT1150 Fundamentals of Engineering Design

D. Assistant Dean: Brooke Miller, M.B.A.

E. Credit Hours: 2
Lecture: 1 hours
Laboratory: 3 hours

F. Prerequisites: None

G. Last Course/Curriculum Revision Date: Fall 2025 Origin date: 07/28/2011

H. Textbook(s) Title:

Autodesk Inventor 2022 with Engineering Graphics
- Author: Randy H. Shih
- Copyright Year: 2022
- Edition: 1st
- ISBN: 9781630574352

I. Workbook(s) and/or Lab Manual: None; Class Handouts will be distributed

J. Course Description: An introductory course to acquaint the student with the tools used to convey design concepts and product information in the engineering arena. 3D visualization, using sketching, drawing, solid modeling and computer aided drafting will be used. The course will also introduce the main concepts in developing an engineering design project.

K. College-Wide Learning Outcomes:

College-Wide Learning Outcome	Assessments - - How it is met & When it is met
Communication – Written	
Communication – Speech	
Intercultural Knowledge and Competence	
Critical Thinking	
Information Literacy	
Quantitative Literacy	

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Engineering Technology, Business & Criminal Justice Division	**Discipline:**	Mechanical Engineering Technology
Course Coordinator:	Brooke Miller, M.B.A.		
Course Number:	MECT1150	**Course Title:**	Fundamentals of Engineering Design
Semester / Session:	Fall 2025	**Start / End Date:**	8/11/2025 – 12/12/2025

Instructor Information

Name:	Paul Depinet	**Credentials:**	Bachelor of Science, Electrical Engineering
Phone Number:	none	**E-Mail Address:**	pdepinet@ncstatecollege.edu
Office Location:	none	**Office Hours:**	By appointment

I. Topical Timeline / Course Calendar (Subject to Change):

Weeks	Topics	Assignment	Due Date
1	Engineering as a Profession, Orthographic Projection, and Measurement	Quizzes, paper, drawing	Week 2
2	Parametric Modeling Fundamentals	Chapter 2 exercises 1 and 6	Week 3
3	Constructive Solid Geometry Concepts	Chapter 3 exercises 4 and 6	Week 4
4	Geometric Constructions	Chapter 4 exercises 4 and 5	Week 5
5	Model History Tree	Chapter 5 exercises 2 and 3	Week 6
6	Geometric Construction Tools	Chapter 6 exercises 1 and 3	Week 7
7	Orthographic Projection and Multiview Construction and Review	Chapter 7 exercises 5 and 6	Week 8
8	Midterm		Week 8
9	Dimensioning and Notes	Chapter 8 exercises 1 and 4	Week 10
10	Tolerancing and Fits	Chapter 9 exercise 2	Week 11
11	Auxiliary Views and Reference Geometry	Chapter 1 exercises 4 and 5	Week 12
12	Section Views & Symmetrical Features in Designs	Chapter 12 exercise 5	Week 13
13	Assembly Modeling and Working Drawings	Chapter 14 exercise 1	Week 14
14	Introduction to Stress Analysis	Chapter 15 exercises 1 and 2	Week 15
15	Review for Final Exam	Study	
16	Final Exam		Week 16

II. Grading and Testing Guidelines:

Final Grade Calculation

Activity	Percentage
Attendance	10
Exercises and Quizzes	50
Midterm Exam	20
Final Exam	20

1. Textbook, lecture slides, and notes may be used for tests and quizzes unless otherwise directed

2. Collaboration with other students
   a. Is *not* permitted for online quizzes and tests
   b. Is encouraged for doing Inventor drawings. HOWEVER each student must do and submit their own work. Copying files for submission will not be permitted.
3. Due Dates, Late deduction, and Availability:
   a. Students are strongly encouraged to keep up and not get behind.
      - Dues dates are posted for each assignment. Usually they are due before class the following week.
      - A 5% per week deduction will be taken for late submissions unless prior permission is given by the instructor.
      - Assignments will no longer be available approximately 2 weeks after they are due unless permission for later submission is given by the instructor. Exact availability dates are included with each assignment in Canvas.
        a) Please contact the instructor as soon as possible if circumstances arise that might lead to late work.

III. Examination Policy:

1. The reasons for which a student will be excused from taking an examination _____
   a. Hospitalization (with documented verification)
   b. Death in the immediate family (with documented verification)
   c. Personal illness or illness in immediate family - (doctor's excuse required).
2. A student who misses an examination for any reason is responsible for _____
   a. Notify the instructor of the reason for missing an examination.
   b. Arranging with the instructor to makeup the examination.
3. No makeup opportunity will be given for absences of unscheduled quizzes.

IV. Class Attendance and Homework Make-Up Policy:

1. Class attendance is necessary to acquire the knowledge required to _____
   a. Understand the material.
   b. Acquire the hands on experience with using Inventor.
2. Students are responsible for _____
   c. Notifying the instructor when missing class.
   d. Arranging with the instructor if assistance is needed with completing exercises
   e. Notifying the instructor if any assigned work will not be completed on time. See "Due Dates, Late deduction, and Availability" for more information.

V. Classroom Expectations:

1. Listen, pay attention, and ask questions.
2. Actively participate in doing the Inventor Exercises and asking for help as needed.
3. Always be professional and respectful of everyone.

L. Course Outcomes and Assessment Methods:

Upon successful completion of this course, the student shall:

Outcomes	Assessments – How it is met & When it is met
1. Make orthographic sketches from isometric drawings of simple machined objects.	Drawing assignments & exams Week 5, midterm exam
2. Create multi-view drawings of simple machined objects.	Drawing assignments & exams Week 7, midterm exam
3. Successfully use Architect and Engineering Scales	Drawing assignments & exams Week 2, midterm exam
4. Display knowledge of standard engineering symbols and lettering, numbering and dimensioning, including Bills of Materials.	Drawing assignments, Week 9 Final project
5. Identify and apply standard engineering symbols (GDT)	Drawing assignments, Week 9
6. Use 3D modeling software to develop 3D models and assemblies of standard machined parts based on dimensions taken from standard isometric or orthographic drawings.	Drawing assignments & exams Weekly, midterm and final exam
7. Create properly dimensioned orthographic drawings from 3D models using 3D software.	Computer assignments & exams Weekly, midterm and final exam
8. Draw, dimension and print basic machined parts.	Computer assignments & exams Week 4, midterm and final exam
9. Describe and discuss the role of engineers in industry.	Written assignment Week 10
10. Describe the general design process used in engineering projects.	Written assignment Week 12

M. Recommended Grading Scale:

NUMERIC	GRADE	POINTS	DEFINITION
93–100	A	4.00	Superior
90–92	A-	3.67	Superior
87–89	B+	3.33	Above Average
83–86	B	3.00	Above Average
80–82	B-	2.67	Above Average
77–79	C+	2.33	Average
73–76	C	2.00	Average
70-72	C-	1.67	Below Average
67–69	D+	1.33	Below Average
63-66	D	1.00	Below Average
60-62	D-	0.67	Poor
00-59	F	0.00	Failure

N. College Procedures/Policies:

North Central State College believes that every student is a valued and equal member of the community.* Every student brings different experiences to the College, and all are important in enriching academic life and developing greater understanding and appreciation of one another. Therefore, NC State College creates an inclusive culture in which students feel comfortable sharing their experiences. Discrimination and prejudice have no place on the campus, and the College takes any complaint in this regard seriously. Students encountering aspects of the instruction that result in barriers to their sense of being included and respected should contact the instructor, assistant dean, or dean without fear of reprisal.

* *Inclusive of race, color, religion, gender, gender identity or expression, national origin (ancestry), military status (past, present or future), disability, age (40 years or older), status as a parent during pregnancy and immediately after the birth of a child, status as a parent of a young child, status as a foster parent, genetic information, or sexual orientation*

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at https://ncstatecollege.edu/documents/President/PoliciesProcedures/PolicyManual/Final%20PDFs/14-081b.pdf