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: MECT1910 Introduction to Design Project

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

E. Credit Hours: 1
Laboratory: 3 hours

F. Prerequisites: ENGR1010

G. Last Course/Curriculum Revision Date: Fall 2025 Origin date: 09/26/2018

H. Textbook(s) Title: None

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

J. Course Description: Students will participate in a mechanical design as assigned.

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	

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. Utilize engineering software to develop a project design.	Week 3 Project Proposal, Week 8 Progress Report, Final Report
2. Utilize engineering manuals to compile relevant data and formulae.	Week 3 Project Proposal, Week 8 Progress Report, Final Report
3. Collaborate with team members in problem solving and design.	Week 3 Project Proposal, Week 8 Progress Report, Final Report
4. Effectively communicate with team members, business partners, and during final presentation.	Final Report and Presentation, Week 15

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

North Central State College

SYLLABUS ADDENDUM

Academic Division:	Engineering Technology, Business & Criminal Justice	**Discipline:**	Engineering Technology
Course Coordinator:	Alex West		
Course Number:	MECT-1910-CN1	**Course Title:**	Introduction to Project Design
Semester / Session:	Spring 2026	**Start / End Date:**	1/12/2026 thru 5/8/2026

Instructor Information

Name:	Fisher Kalb	**Credentials:**	BASMET
Phone Number:	N/A	**E-Mail Address:**	fkalb@ncstatecollege.edu
Office Location:	Room 012	**Office Hours:**	Mondays: 12:30 P.M. to 4:30 P.M. and Wednesdays: 12:30 P.M. to 5:30 P.M.

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

Weeks	Topics	Assignment	Due Date
1	Introduction		
	CO2 Car Project Criteria	CO2 Car Design Proposal	Week 3
		CO2 Car Presentation	Week 6
		CO2 Car Report	Week 7
2	Project Management	CO2 Car Gantt Chart	Week 3
	Soft Skills		
		Week 2 Report	Week 3
3	Inventor Review	CO2 Car Parts Drawings for CO2 Car Parts CO2 Car Assembly CO2 Car Assembly Drawing	Week 6
	Geometric Dimensioning and Tolerancing	Dimension Fundamentals and GD&T Quiz	Week 4
		Week 3 Report	Week 4
4	Bill of Materials	CO2 Car Bill of Materials	Week 6
		BOM Quiz	Week 5
		BOM and MRP Quiz	Week 5
		Week 4 Report	Week 5
5	Measuring Tools	Measuring Tools and Tool Safety Quiz	Week 6
	Tool Safety		
		Week 5 Report	Week 6
6	Presentation Week		
	Mousetrap Car Project Criteria	Mousetrap Car Design Proposal	Week 8
		Mousetrap Car Presentation	Week 15
		Mousetrap Car Report	Week 16
7		STAFF IN-SERVICE DAY	
8	Measuring Tools and Tool Safety Review		
		Mousetrap Car Gantt Chart	Week 10
		Week 8 Report	Week 9
9		SPRING BREAK	

Weeks	Topics	Assignment	Due Date
10	Inventor and Geometric Dimensioning and Tolerancing Review		
		Week 10 Report	Week 11
11	Bill of Materials Review	Mousetrap Car Bill of Materials	Week 15
		Week 11 Report	Week 12
12	Begin Mousetrap Car Assembly		
		Week 12 Report	Week 13
13	Mousetrap Car Event Next Week		
		Week 13 Report	Week 14
14	MOUSETRAP CAR EVENT	MOUSETRAP CAR EVENT	Week 14
		Week 14 Report	Week 15
15	Presentation Week		
16	Presentation Week		

II. Grading and Testing Guidelines:

Final Grade Calculation

Activity	Qty	Points	Percentage
Quizzes and Attendance	5	N/A	10%
Project Drawings and BOM	10	N/A	35%
Project Plans and Progress Reports	12	N/A	15%
Project Reports	2	100	20%
Project Presentations	2	24	20%

1. **Introduction**
   a. Introduction to the course

2. **CO2 Car Project Criteria**
   a. Sketch/Proposal
   b. Gantt Chart
   c. Design
      - Modeled Parts
      - Part Drawings and Dimensions
      - Modeled Assembly
      - Assembly Drawing
      - Bill of Materials

   d. Weekly Reports
   e. Project Report
      - Title Page
      - Table of Contents
      - Objectives
      - Introduction
      - Design Methodology
      - Test and Evaluation
      - Analysis of Results
      - Conclusion
      - References

f. Project Presentation
- Title Slide
- Objectives
- Design Methodology
- Test and Evaluation
- Analysis of Results
- Conclusions
- Reference

3. **Project Management**
   a. Describes Project Management
   b. Describes Gantt Chart

4. **Soft Skills**
   a. Describes the Methods to Effectively Communicate with Team Members, Business Partners, and Others

5. **Inventor Review**
   a. Reviews the Functions of Inventor Software

6. **Geometric Dimensioning and Tolerancing**
   a. Describes the Principals of Geometric Dimensioning and Tolerancing

7. **Bill of Materials**
   a. Describes Single and Multi-Layer Bills of Materials

8. **Measuring Tools**
   a. Describes the Way to Read Calipers and Other Measuring Tools

9. **Tool Safety**
   a. Describes Proper Usage and Personal Protective Equipment of Several Tools

10. **Presentation Week**
    a. Students Present the CO2 Car Project

11. **Mousetrap Car Project Criteria**
    a. Sketch/Proposal
    b. Gantt Chart
    c. Design
       - Modeled Parts
       - Part Drawings and Dimensions
       - Modeled Assembly
       - Assembly Drawing
       - Bill of Materials

    d. Weekly Reports
    e. Construction
    f. Mousetrap Car Event
    g. Project Report
       - Title Page
       - Table of Contents
       - Objectives
       - Introduction
       - Design Methodology
       - Test and Evaluation
       - Analysis of Results
       - Conclusion
       - References

h. Project Presentation
- Title Slide
- Objectives
- Design Methodology
- Test and Evaluation
- Analysis of Results
- Conclusions
- Reference

12. **Measuring Tools and Tool Safety Review**
    a. Reiterates Proper Usage and Personal Protective Equipment of Several Tools
13. **Inventor and Geometric Dimensioning and Tolerancing Review**
    a. Reiterates the Principals of Geometric Dimensioning and Tolerancing
14. **Bill of Materials Review**
    a. Reiterates the Details of the Bill of Materials
15. **Begin Mousetrap Car Assembly**
    a. Students are Advised to Begin the Assembly of the Mousetrap Car
16. **Mousetrap Car Event Next Week**
    a. Students are Notified that The Mousetrap Car Event is Next Week
17. **MOUSETRAP CAR EVENT**
    a. The Mousetrap Car Event Takes Place
18. **Presentation Week**
    a. Students Present the Mousetrap Car Project
19. **Presentation Week**
    a. Remaining Students Present the Mousetrap Car Project

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. Contacting the instructor prior to the exam time
   b. Working with instructor on how and when the exam will be made-up.

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. Complete weekly assignments

2. Students are responsible for _____
   a. Attending and participating in their classes.
   b. All assignments issued

V. Classroom Expectations:

As a NC State Student, be it it online or hybrid, your conduct in this course is subject to the NC State Student Code of Conduct. (Links to an external site.)

As a future professional in your field, **you will be expected to conduct yourself as a professional in this course in ALL work and communications** - be it assignments, discussion forums, Canvas Inbox, emails etc.

This includes but is not limited to:

- **Being respectful of classmates' opinions, work and comments**
  Good test = Is this something I would/should say to a co-worker in person?
- **Being respectful in communications with the instructor**
  Good test = Is this something I would/should say to my boss in the workplace?
- **Being respectful of diversity**
  Good test = Is this a comment/joke that is at some other groups, ethnicity, political etc. expense?
  Note: Offensive "jokes", slurs or hate speech (Links to an external site.) will NOT be tolerated
- **Using Non-Profane, Appropriate Language**
  Good test = Is this language you would use in the workplace or in front of your grandmother?
- **Using proper. NON-"Text speak" Language to make Yourself Easily Understood**
  Good test = Could my older boss understand what I have written?

Failure to conduct yourself as a professional and meet standards above in this course will result in the following consequences in this course:

- **1st Instance** = Written warning from the instructor documenting issue
  (No points deductions)
- **2nd offense = Mandatory m**eeting with the instructor and or Department Chair or Division Dean
  (Related assignment/Participation subject to Point Deductions)
- **3rd offense:** College Disciplinary procedures filed with the NC State Judicial Committee as a violation of the Student Code of Conduct.
  (Course Grade subject to F)

Extreme or repeated unprofessional behavior will result in initiating college disciplinary procedures as outlined in the NC State Student Code of Conduct. (Links to an external site.) NCSC Disciplinary hearings can result in a variety of consequences, including and up to suspension or being expelled from the college.