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: MECT2440 Strength of Materials

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

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

F. Prerequisites: MECT2330

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

H. Textbook(s) Title:

Applied Statics and Strength of Materials
• Author: George F. Limbrunner and Craig T. D'Allaird
• Copyright Year: 2016
• Edition: Sixth
• ISBN #: 9780133840544

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

J. Course Description: A study of the effects of load on structures, frames, beams, columns, and mechanisms; including stress and strain in tension, compression, shear, and torsion; column buckling; torsion, axial and lateral deflections; thermal stresses and strains, and properties of materials. (TAG# OET008)

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. Analyze and compute stress and deflection in basic machine elements	Weekly quizzes and homework Midterm Week 5, final exam
2. Design bolted and welded joints per AISC codes and standards	Weekly quizzes and homework Midterm Week 5, final exam
3. Prepare and use beam diagrams	Weekly quizzes and homework Midterm Week 10, final exam
4. Compute beam stresses and deflections	Weekly quizzes and homework Midterm Week 10, final exam
5. Compute torsional loads and deflections	Weekly quizzes and homework Final exam
6. Use Mohr's Circle to determine bi-axially loaded stress elements	Weekly quizzes and homework Final exam
7. Determine shaft diameters loaded with both bending and torsional forces	Weekly quizzes and homework Final exam
8. Analyze short and slender columns	Weekly quizzes and homework Final exam

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 Division	**Discipline:**	Mechanical Engineering Technology
Course Coordinator:	Brooke Miller		
Course Number:	MECT-2440-30	**Course Title:**	Strength of Materials
Semester / Session:	Spring 2026/ Full Term	**Start / End Date:**	1/12/2026 thru 5/08/2026

Instructor Information

Name:	Hemanta Dulal	**Credentials:**	MS in Mechanical Engineering
Phone Number:	419-755-4702	**E-Mail Address:**	hdulal@ncstatecollege.edu
Office Location:	Kehoe Center Room 005	**Office Hours:**	By Appointment (MW 1:45-5:00PM)

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

Class	Week of:	Topic	Chapter/section	Homework
1	12/01/2026	Chapter 8: Normal Stress and Shear Stress *Quiz #8*	Chapter 8	Chapter 8 Homework
2	19/01/2026			
3	26/01/2026	Chapter 9: Axial Stress Application *Quiz #9*	Chapter 9	Chapter 9 Homework
4	02/02/2026			
5	09/02/2026	Chapter 10: Strain, Stress-Strain behaviour *Quiz #10*	Chapter 10	Chapter 10 Homework
6	16/02/2026			
7	23/02/2026	Chapter 11 & 12: Bending Stress & Beam Shear Stress *Quiz #11& Midterm*	Chapter 11&12	Chapter 11 Homework Midterm Exam
8	02/03/2026			
9	09/03/2026	*Spring Break – No Class*		
10	16/03/2026	Chapter 13: Plane Stress Transformation, Mohr Circle *Quiz #13*	Chapter 13	Chapter 13 Homework
11	23/03/2026			
12	30/03/2026	Chapter 14: Beam Deflection Method *Quiz #14*	Chapter 14	Chapter 14 Homework
13	13/04/2026			
14	06/04/2026	Chapter 15: Combined Loading *Quiz #15*	Chapter 15	Chapter 15 Homework
15	13/04/2026			
16	20/04/2026	Chapter 16: Column Buckling	Chapter 16	Chapter 16 Homework
17	27/04/2026	Review		Chapter 16 Homework
18		**Final Exam**	**All Chapters**	Final Exam

II. Grading and Testing Guidelines:

Final Grade Calculation

Activity	**Qty**	**Points**	**Percentage**
Quizzes	7		20%
Mid-term	1		25%
Final	1		25%

Homework	8		30%
Total			100%

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 loss of the points.
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 _____
   - Operate a business
   - Run someone else's business
   - Succeed in the proceeding courses of the business program
2. Students are responsible for _____
   a. Getting themselves to class on time every week
   b. Completing assignments on time
   c. Contacting me as needed for unforeseen circumstances, questions, etc.
   d. Communicating with me for needed accommodations prior to assignments that need accommodation being due
3. There are no face-to-face attendance requirements. It is anticipated that students will be logging into the course frequently (many times each week) and participating. As such, attendance for this course is marked using student participation.
   Your attendance may be graded and will be marked each week as:
   a. fully attended (submitting all assignments for the weekly module);
   b. partially attended (submitting some portion of assignments for the weekly module); or
   c. absent (not submitting any assignments for a weekly module).

Homework/Participation Requirements

4. Students must participate within the first week of the term in order to avoid being dropped for non-participation. This is a college-wide policy. Students must also participate in and achieve at least 67% success by the point of mid-term grade reporting to again avoid being dropped from the course for non-participation (another college-wide policy).

5. Homework can only be made up in extenuating circumstances that are approved in advance by the instructor. Assignments submitted late without instructor approval may not be graded.

6. If an assignment is approved to be submitted and graded late, a 20% minimum penalty will be applied. Only assignments submitted within one week of the due date will be considered for late grading.

7. There are no late assignments accepted after the last day of the term—NO EXCEPTIONS! Any assignments listed with due dates within finals week are final!

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 speechLinks 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.