North Central State College

MASTER SYLLABUS
2019-2020

A. Academic Division: Business, Industry and Technology

B. Discipline: Mechanical Engineering

C. Course Number and Title: MECT2330 Statics

D. Course Coordinator: Mike Beebe
Assistant Dean: Toni Johnson, PhD

Instructor Information:
- Name: Click here to enter text.
- Office Location: Click here to enter text.
- Office Hours: Click here to enter text.
- Phone Number: Click here to enter text.
- E-Mail Address Click here to enter text.

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

F. Prerequisites: PHYS1110c

G. Syllabus Effective Date: Fall, 2019

H. Textbook(s) Title:

Statics and Strengths of Materials
- Author: Cheng
- Copyright Year: 1997
- Edition: Second
- ISBN #: 0028030672

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

J. Course Description: A problem course dealing with bodies at rest; it lays the necessary groundwork for further study in the design and analysis of structures and machines. Emphasis is placed upon the importance of the ability to draw free body diagrams used in solving problems. (TAG # OET007)

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. Solve for forces in all planar structures for machines at rest, or in constant motion, with due regard to friction.	Problem based quizzes, homework and exams
2. Solve for forces in selected space frames and trusses.	Problem based quizzes, homework and exams
3. Analyze and compute centroids and moment of inertia	Problem based quizzes, homework and exams

M. Topical Timeline (Subject to Change):

Wk 1-2 Introduction
- a. Introduction, Forces, Internal & External, Scalar, Vectors
- b. Concurrent, Coplanar, Nonconcurrent Forces
- c. Newton's Laws
- d. Units and Conversions & Trig Review

Wk 3-4 Resultant of Coplanar Forces
- a. Rectangular Components, Addition, Resultant and Angle
- b. Moments, Summation, Varignon's Theorem
- c. Couples, Force into a Couple System

Wk 5-7 Equilibrium of Coplanar Forces
- a. Summation of X and Y and Moments
- b. Free Body Diagrams, Supports,
- c. Types & reactions, Pulleys
- d. Concurrent Equilibrium (Force Triangle)
- e. Nonconcurrent systems (Summation method)

Wk 8-9 Analysis of Structures
- a. Methods of Joints
- b. Zero Force Members
- c. Method of Sections
- d. Frames and Machines

Wk 10-11 Static and Kinetic Friction
- a. Coefficient of Friction
- b. Static Friction
- c. Wedge and Screws
- d. Belt Friction and Rolling Resistance

Wk 12-13 Center of Gravity and Centroids
- a. Centroids
- b. Liquid Pressure

Wk 14-15 Moment of Inertia
- a. Moment of Inertia
- b. Transfer Theorem
- c. Composite Areas
- d. Built up Sections

N. Course Assignments:

Graded assignments:
1. Written assignments
2. Weekly quizzes
3. Midterm
4. Final Exam

O. 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

P. Grading and Testing Guidelines:

Click here to enter text.

Q. Examination Policy:

Click here to enter text.

R. Class Attendance and Homework Make-Up Policy:

Click here to enter text.

S. Classroom Expectations:

Click here to enter text.

T. College Procedures/Policies:

Important information regarding College Procedures and Policies can be found on the syllabus supplement located at https://sharept.ncstatecollege.edu/committees/1/curriculum/SiteAssets/SitePages/Home/SYLLABUS%20SUPPLEMENT.pdf

The information can also be found Choose an item.