1. CEE 2110 – Engineering Mechanics - Statics

2. Course credit hours: 3
   Contact hours per week: 3
   Credit category: Engineering Topics

3. Course coordinator: Y. Jane Liu

4. Textbook: Hibbeler, R.C., *Engineering Mechanics – Statics (latest edition)*, Prentice Hall Publishing Co.

5. Course information:

2020 Catalog description	Vector algebra, resultants, equilibrium, friction, centroids, moment of inertia, trusses, machines and frames, beam shear and moments
Prerequisite(s)	C or better in MATH 1920
Prerequisite(s) or Concurrent Enrollment	PHYS 2110
Course type	Required

6. Course instructional outcomes:

Course Outcome No.	Course Outcome (CO)	ABET Student Outcome
CO1	Perform vector mathematics and apply this knowledge to problems involving forces on objects	1
CO2	Describe mathematically "real world" objects using free body diagrams	1
CO3	Apply the equations of equilibrium to objects (i.e., summation of forces and moments)	1
CO4	Model determinate objects as a system of applied forces and support reactions and use the equations of equilibrium to determine the unknown reactions	1
CO5	Determine the location of the centroid of an object	1
CO6	Determine the moment of inertia of an object about various axes	1
CO7	Determine the axial forces in determinate trusses	1
CO8	Determine shear force and bending moment at various locations along the length of beams resisting transverse loads	1

ABET criterion 3 Student Outcomes addressed by this course:

SO No.	Student Outcome (SO)
3.1	An ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics

7. Course topics:
    1. Vector Algebra (17%)
    2. Equilibrium and free body diagrams (10 %)
    3. Moments and Couples (15 %)
    4. Equivalent force systems (8 %)
    5. Trusses (12 %)
    6. Frames and machines (5 %)
    7. Centroids (8 %)
    8. Shear and moment in beams (12 %)
    9. Moment of inertia (8 %)
    10. Friction (5 %)

    Program criteria (curriculum) addressed by this course:
    1. Apply knowledge of mathematics through differential equations, calculus-based physics, chemistry, and at least one additional area of basic science
    2. Analyze and solve problems in at least four technical areas appropriate to civil engineering

8. Additional topics, assignments, or requirements for dual-level (4000/5000) course: N/A

9. Date: 02/10/2020