1. Course: ENCP 200 - Statics
2. Credits and Contact Hours: 3 credits, 3 lecture hours per week
3. Instructor: Varies
4. Example Textbook: Hibbeler, Engineering Mechanics: Statics, 14th ed., Prentice Hall, 2017, ISBN-13: 978-0134160689
5. Course Information
   1. Catalog Description: Introduction to the principles of mechanics. Equilibrium of particles and rigid bodies. Distributed forces, centroids, and centers of gravity. Moments of inertia of areas. Analysis of simple structures and machines. A study of various types of friction.
   2. Prerequisites: MATH 141
   3. Substitute for ECIV 200 or EMCH 200
6. Course Goals
   1. Learning Outcomes. Students will be able to:
      1. Describe positions, forces, and moments in terms of vectors and vector components in two and three dimensions.
      2. Formulate statics problems by selecting appropriate coordinate systems, constructing free body diagrams with applied forces and support constraints, and developing static equilibrium equations.
      3. Use the methods of vector addition, vector subtraction, and the dot and cross products to solve problems of equilibrium for particles and rigid bodies, including reaction forces and equivalent force systems.
      4. Develop shear and bending moment diagrams and analyze the internal forces of structures.
      5. Evaluate member forces in trusses, frames, and machines.
      6. Analyze the effect of dry friction in equilibrium situations.
      7. Calculate centroids and moments of inertia of geometric figures in two- and three-dimensional space.
   2. Learning Outcomes (LOs) relation to ABET EAC Criterion 3 Student Outcomes

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| ABET EAC Criterion 3 Student Outcomes | LO1 | LO2 | L03 | L04 | LO5 | LO6 | LO7 |
| an ability to identify, formulate, and solve complex engineering problems by applying principles of engineering, science, and mathematics. | X | X | X | X | X | X | X |

1. Topics Covered

* Units
* Position, Force and Moment Vectors
* Vector Addition, Multiplication, Dot and Cross Products
* Equilibrium of a Particle
* Moments and Couples
* Simplified Force-Couple Systems
* Distributed Loads
* Equilibrium in 2-D
* Equilibrium in 3-D
* Method of Joints
* Method of Sections
* Trusses, Frames and Machines
* Internal Loads in Members
* Shear and Moment Diagrams
* Static Friction
* Centroids and Centers of Mass
* Area and Mass Moments of Inertia

1. Document History

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