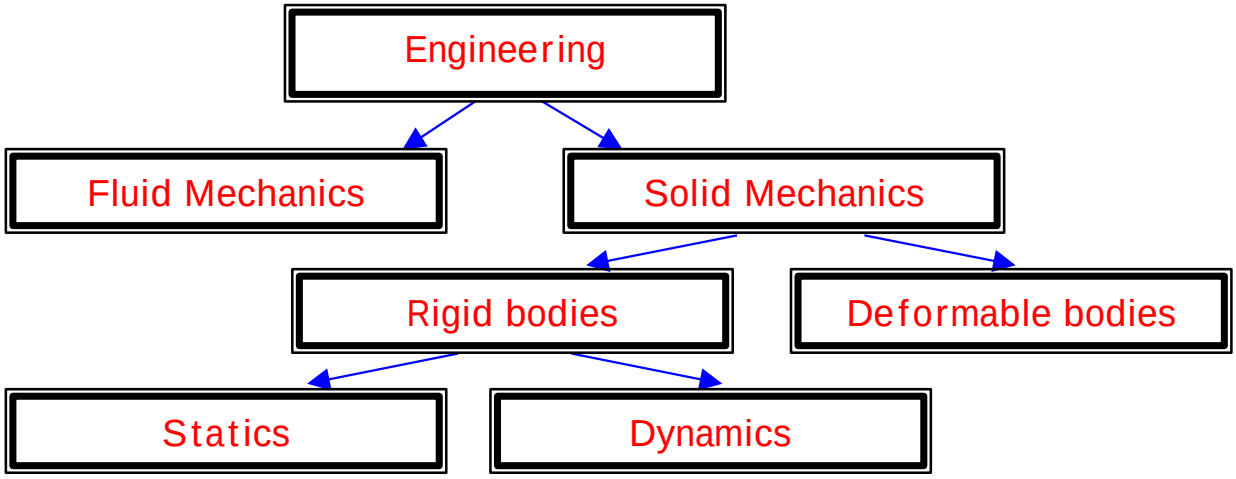
Course Objectives

Mechanics:

Branch of physical sciences concerned with the state of rest or motion of bodies subjected to forces.



By the end of this course, you should be able to . . .

- Determine the components of a force in rectangular or nonrectangular coordinates.
- Determine the resultant of a system of forces.
- Draw complete and correct free-body diagrams and write the appropriate equilibrium equations from the free-body diagram.
- Determine the support reactions on a structure.
- Determine the connection forces in trusses and in general frame structures.
- Determine the internal reactions in a beam, draw correct shear-force and bending moment diagrams, and write equations for the shear-force and bending moment as functions of position along the beam.
- Analyze systems that include frictional forces.
- Locate the centroid of an area.
- Calculate the second moment of an area, calculate the principal second moments of an area.

The suggested textbooks are

- ***Engineering Mechanics: Statics. 2nd Edition***, by W.F. Riley and L.D. Sturges. Published by John Wiley and Sons, Inc., New York. 1996.
- ***Vector Mechanics for Engineers: Statics***, Sixth Edition, by F. P. Beer and E. R. Johnson, published by McGraw-Hill.
- ***Engineering Mechanics: Statics***, 9e, Hibbeler, 2001, Prentice Hall