

## COE 2001-Statics (2-0-2)

### Catalog Description

Forces and moments; equilibrium in two and three dimensions; multi-force members; equilibrium, centroids and friction

**Prerequisites:** MATH 1502 or MATH 1512 or (MATH 15X2 and MATH 1522) and PHYS 2211

### Educational Objectives

This course is intended to introduce undergraduates to the fundamentals of engineering problem solving, with emphasis on problem identification, formulation and solution. Students will apply skills in mathematics and physics to solve engineering mechanics problems. Students will demonstrate an ability to apply fundamental concepts learned in calculus and physics to set up and solve engineering mechanics problems such as equilibrium problems in two and three dimensions.

<b>Introduction</b>	<b>1 hr</b>
<b>Forces and Particle Equilibrium</b> Components of a Force Lines of Action	<b>2 hrs</b>
<b>Moment of a Force, and of a couple; Resultants</b> Cross Products Moments, Couples, Moments about a line Equivalent systems	<b>6 hrs</b>
<b>Analysis of General Equilibrium Problems</b> Free-body Diagrams Fundamental Applications of Equilibrium Equations Interacting Bodies or Parts of a Structure	<b>6 hrs</b>
<b>Structural Applications and Distributed Loads</b> Plane trusses Space trusses Systems containing multiforce members	<b>10 hrs</b>
<b>Centroids and Center of Gravity</b> Centroids Method of Composite Parts	<b>1 hr</b>
<b>Friction</b>	<b>2 hrs</b>
<b>Exams:</b>	<b>2 hrs</b>
<b>Total:</b>	<b>30 hrs</b>