

Course Title: EGT 136: Mechanics

Course Leader: Adam C. Bridendolph

Expected Learning Outcomes for Course:

Upon successful completion of this course, students will be able to:

1. Solve triangles.
2. Solve two and three simultaneous equations.
3. Add two-dimensional vectors.
4. Find force resultants in two dimensions.
5. Solve for external reactions using equilibrium.
6. Find forces in trusses.
7. Solve for forces on two-dimensional frames.
8. Analyze friction problems including dry, belt, and screw friction.
9. Solve problems with concurrent spatial force systems.
10. Find the centroid of a body.
11. Find the center of gravity of a body.
12. Find the area moment of inertia.

Assessment:

(How do students demonstrate achievement of these outcomes?)

Four exams, homework assignments

Validation:

(What methods are used to validate your assessment?)

Feedback from internship employers.

Results:

(What does the data show?)

Students struggle with applying mathematical concepts to solve real-world engineering problems. Some students also struggle with truss design problems. Some of the feedback has been great from employers looking for more students

Follow-up:

(How have you used the data to improve student learning?)

More time is spent reviewing mathematical concepts and units in the beginning of the course. More emphasis and time is placed on the design of trusses

Budget Justification:

(What resources are necessary to improve student learning?)

Structural stress analyzer (tensile tester) resources so students can build and test prototype truss bridges and test tensile strength of materials