

Faculty Course Self-Assessment



Instructor: _____ Saeid Motavalli _____
Course: _____ CMGT 310 _____
Term: _____ Fall 2023 _____
Enrollment: _____ 25 _____

Text:

Course Summary: Study of particles and rigid bodies in equilibrium: Applications to two dimensional and three dimensional structural systems using ordinary and vector algebra. Topics include free-body diagrams, force vectors, equilibrium of particles, force system resultants, equilibrium of rigid bodies, structural analysis, and friction.

Students should demonstrate the ability to:

- 1- Develop knowledge of vector mathematics and application to engineering mechanics.
- 2- Perform force analysis for external reactions computation.
- 3- Draw free-body diagrams and apply the concepts of particle and rigid-body equilibrium.
- 4- Analyze and design structural members subjected to tension, compression, torsion, bending and combined stresses.

Program Outcomes

CMGT 310 – Statics and Strength of Materials Spring 2023

Course Learning Outcomes:

- An ability to identify, formulate, and solve broadly defined technical or scientific problems by applying knowledge of mathematics and science and/or technical topics to areas relevant to the discipline.
- An ability to develop and conduct experiments or test hypotheses, analyze and interpret data and use scientific judgment to draw conclusions.

Summary of Student course performance:

The assessment tool was Exam 1. This exam focused mainly on force vectors and their separation into x and y components. It also includes a resultant force problem. Exam 1 was chosen as the tool to assess the outcome as it blends mechanics and vectorial algebra. We considered that this outcome is met when at least 70% of students achieve at least of 70% on this quiz.

In 2023 73% of students had a score of 70% or above on test 1. This improvement was possible by investing more time at the beginning of the class to reinforce the students' understanding of vectors. The instructor continued to emphasize how the components of different types of vectors are obtained.

Student comments: Student comments were generally positive. They request more explanations on problems that are reviewed in class.

Summary of student comments and course evaluations:

Summary of Faculty experience & observations:

Students are having trouble with three dimensional analysis of forces. I am experimenting with using various visual tools to explain three dimensional problems with physical demonstration of the systems.

SUMMARY OF ACHIEVEMENT OF COURSE OUTCOMES

RECOMMENDED CHANGES

Recommended changes based on student course performance: use visual tools to explain tree dimensional problems

Recommended changes based on student evaluations and comments: none

Recommended changes based on faculty experience & observations: Same as above

Other comments and recommended changes:

Summary of Recommended Changes

Change	No change	Change	No change
<input type="checkbox"/>	<input type="checkbox"/> Prerequisites	<input checked="" type="checkbox"/>	<input type="checkbox"/> Course equipment/apparatus
<input type="checkbox"/>	<input type="checkbox"/> Syllabus	<input type="checkbox"/>	<input type="checkbox"/> Course field trips/site visits
<input type="checkbox"/>	<input type="checkbox"/> Text	<input type="checkbox"/>	<input type="checkbox"/> Guest speakers
<input type="checkbox"/>	<input type="checkbox"/> Homework	<input type="checkbox"/>	<input type="checkbox"/> Pacing and relative emphasis
<input type="checkbox"/>	<input type="checkbox"/> Laboratories	<input type="checkbox"/>	<input type="checkbox"/> Course materials/handouts
<input type="checkbox"/>	<input type="checkbox"/> In class exercises	<input type="checkbox"/>	<input type="checkbox"/> Blackboard & lecture notes
<input type="checkbox"/>	<input type="checkbox"/> Exams	<input type="checkbox"/>	<input type="checkbox"/> Grading
<input type="checkbox"/>	<input type="checkbox"/> Projects		

Other

<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____
<input type="checkbox"/>	<input type="checkbox"/>	_____