Outcomes Based Learning Matrix

Course: ENGT 273 Statics **Department: ENGT**

Course Outcomes	Outcome Activities	Assessment Tools
Students will be able to:		
Demonstrate knowledge of the principles of Statics. (WC, QL, IL, CCT, Int L)	Through lecture and class discussions learn to apply basic Static concepts and analysis techniques for future problem solving.	Students comprehension of these topics will be assessed in homework and exams
Construct free body diagrams to analyze force distribution. (WC, QL, IL, CCT, Int L)	Through lecture learn to build free body vector diagrams to communicate force direction and magnitude.	Students comprehension of these topics will be assessed in homework and exams
Analyze the Static forces on trusses, frames, and machines. (WC, QL, IL, CCT, Int L)	Attend lectures to learn to apply the proper analytical techniques based on types of structures exposed to various static forces.	Students comprehension of these topics will be assessed in homework and exams
Understand the effect of internal forces in members. (WC, QL, IL, CCT, Int L)	Study the effects of internal forces of different materials and how they impact overall analysis when combined with external forces.	Students comprehension of these topics will be assessed in homework and exams
Calculate centroids and moments of inertia. (WC, QL, IL, CCT, Int L)	Learn through lecture the proper analytical techniques based on effects of inertia and centers of gravity.	Students comprehension of these topics will be assessed in homework and exams
Demonstrate an understanding the laws of friction as they apply to Static forces. (WC, QL, IL, CCT, Int L)	Learn how friction of various materials impacts the effect of Static forces.	Students comprehension of these topics will be assessed in homework and exams
Analyze static forces in systems using Matlab (WC, QL, IL, CCT, Int L)	Use Matlab in assignments and class examples to analyze complex, multi-force system analysis.	Matlab will be used in an extended lecture/lab environment.