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Spring 2-1-2018

### EGEN 201.01: Engineering Statics

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## **EGEN 201 - Statics**

Spring 2018 – The University of Montana  
Tues and Thurs 11:00 – 12:15 AM, LA 105

### **Professor:**

Aaron Thomas

Office hours: Chem 217, Mon. 1-2 PM, Wed. 11-12 AM, Thurs. 10-11 AM & by appointment

[Email:](mailto:aaron.thomas@umontana.edu) aaron.thomas@umontana.edu

Phone: 406.243.2052

### **Course Prerequisites:**

Physics I

Calculus I

### **Course Co-requisite**

Calculus 2

**Course Description:** The course covers the following topics; statics of particles: forces in plane, forces in space, equilibrium, moment of a force, moment of a couple, equivalent systems of forces on rigid bodies, equilibrium in two dimensions, equilibrium in three dimensions, distributed forces: centroids and center of gravity, analysis of structures: trusses, frames and machines, internal forces in beams and cables, friction, moments of inertia of areas, moments of inertia of masses, method of virtual work.

### **Course Objectives:**

- To provide definition of force and moment vectors and give necessary vector algebra
- To explain the concept of equilibrium of particles and rigid bodies in plane and 3D space
- To give information about support types and to give ability to calculate support reactions
- To explain the equilibrium of structures and internal forces in trusses, and frames
- To give information about distributed loads
- To provide information on moment of inertia
- To explain virtual work concept

### **Course Texts:**

*Statics – 13<sup>th</sup> edition*, R.C. Hibbeler (2013), Pearson, Boston, ISBN 0-13-291554-5

### **Required Equipment:**

- Engineering paper (yellow w/ green grid on reverse side)
- Mechanical pencil(s) and straight edge for sketching

**Course Grades:**

Course grades will be broken down generally in accordance with the stated learning objectives:

<b>Assignment</b>	<b>Percent of Grade</b>
Weekly Homework Assignments	40%
Exams (4 at 15% each)	60%
<b>Total:</b>	<b>100%</b>

**Homework Policy:**

1. The work that you submit must be done neatly on only the front pages. Only one problem per page, and all of your work must be shown in a logical manner for proper credit to be given. Please *box* your final answers.
2. You are encouraged to work in groups on your assignments, but the work you turn in must be your own.
3. Homework will be given on a weekly basis, and it is due at the *beginning* of the class period.
4. If an assignment is turned in late, the grade for the assignment will be reduced by 50% for each class period it is late.

**Emergencies and Excused Absences:**

If extenuating circumstances prevent you from attending lecture or from turning in an assignment, you must make every effort to contact me BEFOREHAND. At that time, I may be able to excuse your absence or late assignment for reasons of illness, injury, family emergency or a University-sponsored activity. Alternative due dates will be agreed upon as part of that conversation.

**University Policies:**

You are expected to be familiar with and to follow University policies. Specifically, students are expected to practice academic honesty. Academic misconduct is subject to an academic penalty by the course instructor and/or a disciplinary sanction by the University. All students need to be familiar with the [University Student Conduct Code](#). It can be easily found by Googling "U Montana Student Conduct Code", or at <http://life.umt.edu/vpsa/documents/StudentConductCode1.pdf>.