Statics - TAM 210 & TAM 211

Wayne Chang
Spring 2019
Outline

- Course Policy
- Course Resources
- Course Elements
- Tools for Success
- Intro to Statics – Course Overview
Course Websites

Main Page - https://courses.engr.illinois.edu/tam210/index.html

TAM 210/11: Statics

Welcome to the official course website for TAM 210/11 at UIUC this Spring 2019.

NOTE: This website is always under construction!! Feel free to peruse, wander, and learn a bit about what’s coming up this Spring, but dates/times/assignments etc. are subject to change. If you have any questions, feel free to drop us a line at the discussion forum on Piazza (see link below).

As well as the pages on this website, this course uses:

- Online homework via PrairieLearn
- Discussion forum on Piazza
- Gradebook on Compass
- Computerized Testing Facility exam reservation
- Computerized Testing Facility instructions
Course Policies

POLICIES PAGE - https://courses.engr.illinois.edu/tam210/policies.html

Please read through are the course policies for this class on the course website and familiarize yourself with the policies regarding course logistics. Details specific to course content can be found on the Info page.

• Absences
• Academic integrity, harassment, and discrimination
• Computer-Based Testing Facility
• Contact and obtaining help
• Discussion
• Gradebook
• Lectures
• Special accommodations
Grade Distribution

INFO PAGE - https://courses.engr.illinois.edu/tam210/info.html

<table>
<thead>
<tr>
<th>Assignment</th>
<th>Weight (%)</th>
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<tbody>
<tr>
<td>In-lecture iClickers</td>
<td>4</td>
</tr>
<tr>
<td>Written assignments</td>
<td>8</td>
</tr>
<tr>
<td>Discussion group activity</td>
<td>8</td>
</tr>
<tr>
<td>CBTF quizzes</td>
<td>40</td>
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<tr>
<td>PrairieLearn homework</td>
<td>10</td>
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<tr>
<td>CBTF Exam</td>
<td>30</td>
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</table>

**Final grades:** The total score $s$ corresponds to final grades as follows.

<table>
<thead>
<tr>
<th>Score Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>97% ≤ $s$ &lt; 100%</td>
<td>A+</td>
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<tr>
<td>92% ≤ $s$ &lt; 97%</td>
<td>A</td>
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<tr>
<td>89% ≤ $s$ &lt; 92%</td>
<td>A-</td>
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<tr>
<td>86% ≤ $s$ &lt; 89%</td>
<td>B+</td>
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<tr>
<td>82% ≤ $s$ &lt; 86%</td>
<td>B</td>
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<tr>
<td>79% ≤ $s$ &lt; 82%</td>
<td>B-</td>
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<tr>
<td>76% ≤ $s$ &lt; 79%</td>
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<tr>
<td>72% ≤ $s$ &lt; 76%</td>
<td>C</td>
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<td>69% ≤ $s$ &lt; 72%</td>
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<td>66% ≤ $s$ &lt; 69%</td>
<td>D+</td>
</tr>
<tr>
<td>60% ≤ $s$ &lt; 66%</td>
<td>D</td>
</tr>
<tr>
<td>55% ≤ $s$ &lt; 60%</td>
<td>D-</td>
</tr>
<tr>
<td>$s$ &lt; 55%</td>
<td>F</td>
</tr>
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</table>
I-Clickers – 4%

- Used for in-class participation
- 4.5% total possible (extra credit!)
- You need to register your i-clicker on Compass 2g

“Make Clickers Work for You”
Dr. Stephanie Chasteen (CU-Boulder)

Getting the most out of lectures:
- Bring paper and pencil/pen
- Participate
  - Ask questions
  - Answer questions
  - Give feedback (too fast, too soft)
I-Clickers – 4%

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Getting the most out of lectures:
• Bring paper and pencil/pen
• Participate
  • Ask questions
  • Answer questions
  • Give feedback
    (too fast, too soft)
In this study, we examined the impact of mobile phone usage, during class lecture, on student learning. Participants in three different study groups (control, low-distraction, and high-distraction) watched a video lecture, took notes on that lecture, and took two learning assessments after watching the lecture. Students who were not using their mobile phones wrote down 62% more information in their notes, took more detailed notes, were able to recall more detailed information from the lecture, and scored a full letter grade and a half higher on a multiple choice test than those students who were actively using their mobile phones. Theoretical and pedagogical implications are discussed.

Keywords: Texting; Student Learning; Texting in the Classroom; Technology; Mobile Phone
Discussion group activity – 8%

• Work in groups of 3-4 students

• Groups will be determined by CATME

• Goals:
  • Gain experience in team-work
  • Apply engineering concepts learned in lecture to real-world problems or hands-on activities

• Be prompt: if you are more than 5 minutes late, you will receive a 0 😞

• You need to attend the discussion in which you are registered, otherwise, your assignment will not be graded
Written Assignments – 8%

• Student will submit an **individual written report using compass**
• Goal:
  • **Practice the communication of engineering concepts in writing**
  • More info during discussion section this week (Week 1)
Online Homework (PL) – 10%

- Instant feedback
- Infinite number of attempts
- Multiple attempts may be required for full credit

PrairieLearn
An online system for problem-driven learning.

[University of Illinois login] [Google login]
Quizzes – 40%
Exam – 30%

- Assess your understanding of the material in real time
- Check schedule webpage for dates (available over multiple days)
- Sign up for a quiz time online via CBTF website
- Slots fill up fast (CBTF is shared by many course), so sign up early!
- No personal calculators
- Quiz re-tries available to improve quiz grades
- Conflict/make-up quiz will be the re-try quiz

Quiz Grade Formula: \[ \max([\text{First Try}, \frac{1}{3} \times (\text{First Try}) + \frac{2}{3} \times (\text{Quiz Retry})]) \]
Grade Dispute

**Grades:** on Compass2g

- Any errors in grade reporting on Compass **must be reported within 2 weeks** of the due date or by the last day of class, whichever is earlier.
- Missing grade for discussion section, contact one of the TAs in your section (personally or via Piazza).
- Missing grade from online homework, an exam, or i>clicker, contact the course staff team (via Piazza).
TAM 210/211 Staff Team

PEOPLE PAGE - https://courses.engr.illinois.edu/tam210/people.html
Support for Students

- Office hours (429 Grainger) throughout the week
  - Check the Course Info webpage for details
- MATLAB clinic
  - Wednesday – Friday (1/16-18), 6-8PM, MEL
  (Check Piazza for location announcement)
- Course website has a MATLAB help document
- Piazza (everyday, reasonable working hours)
Course Communications

Piazza: https://piazza.com/class/jqhku2y12yq63b

ALL communication in the course will be via piazza

• Open discussion of questions from class: if there’s something you don’t understand, chances are other people don’t, and someone else may have the answer.

• Regularly checked by instructors, TAs and CAs.
# Course Schedule

**SCHEDULE PAGE** - https://courses.engr.illinois.edu/tam210/sched.html

<table>
<thead>
<tr>
<th>Week</th>
<th>Day</th>
<th>Date</th>
<th>Class</th>
<th>Reference Material</th>
<th>CBTF Quiz (Subject to Changes)</th>
<th>Discussion Sections</th>
<th>Homework Due</th>
<th>Written Assignment</th>
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<td>1</td>
<td>M</td>
<td>Jan 14</td>
<td>Lecture 1</td>
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Paths to Success
A Big Obstacle: Procrastination

How I get “motivated” to study?
From Alex Vermeer, “How to Generally Reduce Procrastination”

\[ \text{Motivation} = \frac{\text{Expectancy} \times \text{Value}}{\text{Impulsiveness} \times \text{Delay}} \]

Expectancy: perceived odds of getting the reward; how much success/failure is expected.
Value: the pleasantness of doing the task, and the size of the reward.
Impulsiveness: the tendency to get distracted by more urgent or interesting things, and the tendency to lose focus on the current task.
Delay: the time between the present and the task’s reward.
Helping You Battle Procrastination

- Same quiz/exam format as homework (PrairieLearn)
- Low-stake assessment

\[
Motivation = \frac{Expectancy \times Value}{Impulsiveness \times Delay}
\]

Regularly scheduled:
- i-Clicker
- Homework
- Written Assignment
- Discussion Section
- Quizzes

Participation/effort grades
(a) an ability to apply knowledge of mathematics, science, and engineering
(b) an ability to design and conduct experiments, as well as to analyze and interpret data
(c) an ability to design a system, component, or process to meet desired needs within realistic constraints such as economic, environmental, social, political, ethical, health and safety, manufacturability, and sustainability
(d) an ability to function on multidisciplinary teams
(e) an ability to identify, formulate, and solve engineering problems
(f) an understanding of professional and ethical responsibility
(g) an ability to communicate effectively
(h) the broad education necessary to understand the impact of engineering solutions in a global, economic, environmental, and societal context
(i) a recognition of the need for, and an ability to engage in life-long learning
(j) a knowledge of contemporary issues
(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice.
Student Outcomes for TAM 210/211

ABET
(a) an ability to apply knowledge of mathematics, science, and engineering
   - Avoid example problems memorization
   - No PrairieLearn homework/quiz/exam solutions posted

(d) an ability to function on multidisciplinary teams
   - Comprehensive Assessment of Team Member Effectiveness (CATME) to promote smarter team work (https://info.catme.org)

(g) an ability to communicate effectively
   - Written assignment and corresponding peer evaluations

(k) an ability to use the techniques, skills, and modern engineering tools necessary for engineering practice
   - Use of computational program (MATLAB)
Getting Motivated

How to Get Motivated

A Guide for Defeating Procrastination

The Procrastination Equation

The Procrastination Equation—discussed in detail by Pers Steel in his book by the same name—accounts for every major scientific finding on procrastination and draws upon the best current theories of motivation. It looks like this:

Motivation = Expectancy x Value
Impulsiveness x Delay

Expectancy refers to the perceived value of getting a reward and whether we expect success or failure. Value refers to the pleasantness of doing a task, and the size of the reward. Impulsiveness refers to the tendency to get distracted or lose focus on a task. Delay refers to the time between the present and a task's reward or completion.

How to Get Motivated

The solution is simple. To increase motivation and decrease procrastination you must:

- Increase our Expectancy of success and the certainty of being rewarded.
- Increase the Value and pleasantness of doing a task.
- Decrease our Impulsiveness by removing distractions and maintaining focus.
- Decrease the Delay of the reward by having more immediate, urgent deadlines.
FAQ

• I spend a lot of hours studying but I’m still failing the class, what do I do?  
  Answer: Try working through lecture examples on your own before homework. 
  Avoid getting answers right away when you get stuck.  
  Practice solving more problems from reserved textbooks in library.

• I swear I know what I’m doing, it’s not fair to not get any credit for my work 
  in a quiz/exam. I paid a lot of money to get the grades that I deserve.  
  Answer: All students are evaluated the same way through standardized 
  assessments, and all test questions are designed to test specific 
  concepts. Being able to arrive at the correct final answer with 
  opportunities for multiple attempts is part of the expectation.

• I’m a TAM 210 students, will the zeros I see on Compass for TAM 211 
  assignments affect my grades?  
  Answer: Worry not! Even though 210 and 211 students share the same 
  Compass space, only 210 assignments will be used for 210 grade 
  calculation.
FAQ

• **Will the quiz/exam/class be “curved”?**
  Answer: The quiz/exam/course grades are standardized with very little variations from semester to semester, no “curve” is necessary.

• **But the class average is 60%, does this mean everyone is failing?**
  Answer: With full points received for non-assessment assignments, 60% assessment average gives
  \[
  100\% \times (30 \text{ points}) + 60\% \times (70 \text{ points}) = 72 \text{ final points} \quad \text{(Grade: C)}
  \]
  Historically, about 60% of the students get B- or better.

• **My final grade is 0.1% from the next grade, is there anything I can do to make up those points?**
  Answer: There are no end-of-semester grade adjustment. As stated in the course website: “a score of 78.9% is a C+, while 79.0% is a B-.”
  Note to self now: Don’t lose points on the little things early on.
Ground Rule – Respect