

You have been handed a word for which there are three other words that group with it.

Find the three people that hold the words that group with yours and sit at a table together.

For example, if your word was "North," then the other members of your group might be holding the words "East," "West," and "South."

Welcome to
Physics 183 Section 3/4
Projects and Practices in Physics

Your Instructors

<p>Section 3</p> <ul style="list-style-type: none"> • Prof. Richard Hallstein • Dr. Paul Irving 	<p>Section 4</p> <ul style="list-style-type: none"> • Prof Stuart Tessmer • Mr. Mike Obsniuk
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Learning Assistants

Katie Wampler Steven Collareno Emily Duddles,
 Alyssa Waterson Ashley O'Brien Lauren Constantini
 Brandon Roek Helena Narowski Cole Lacy Jonah Kowalczyk

You may go contact any instructor for help using the group email (pcubed@pa.msu.edu).
You must attend the section for which you are enrolled.

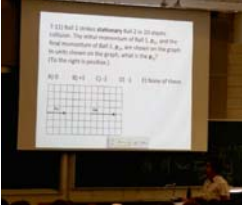
Marshmallow Challenge

- You have been handed: a box of dry spaghetti, a marshmallow, and a paper lunch bag.
- Rolls of masking tape have been placed in each corner of the room.
- Your group has 18 minutes to construct the tallest free-standing structure that will support one (1) marshmallow.
- We will tell you when there's 9, 6, 3, 2, 1, and 0.5 minutes left.

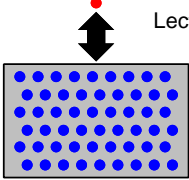
What do employers want?

<ol style="list-style-type: none"> 1. Ability to work in a team 2. Ability to make decisions and solve problems 3. Ability to plan, organize and prioritize work 4. Ability to communicate verbally with people inside and outside an organization 5. Ability to obtain and process information 	<ol style="list-style-type: none"> 6. Ability to analyze quantitative data 7. Technical knowledge related to the job 8. Proficiency with computer software programs 9. Ability to create and/or edit written reports 10. Ability to sell and influence others
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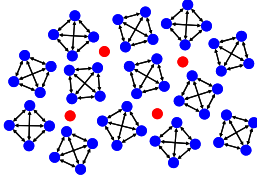
Forbes, 2013




Lecture



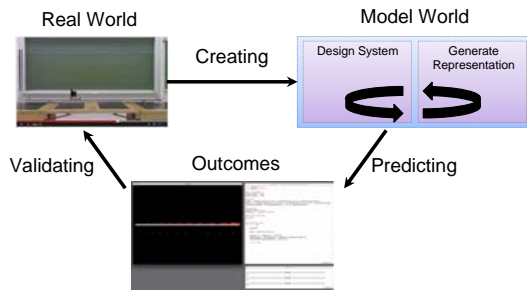
Problem-based Learning + Computation





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Supporting How You Learn To Do Science

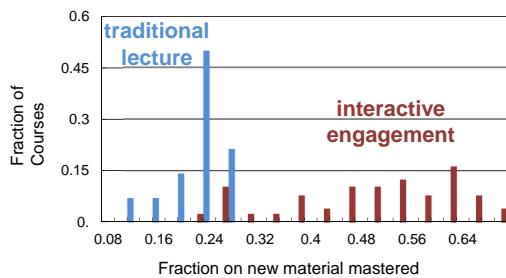


What are you going to learn in the course (in addition to physics)?

1. Ability to work in a team
2. Ability to make decisions and solve problems
3. Ability to plan, organize and prioritize work
4. Ability to communicate verbally with people inside and outside an organization
5. Ability to obtain and process information
6. Ability to analyze quantitative data
7. Technical knowledge related to the job
8. Proficiency with computer software programs
9. Ability to create and/or edit written reports
10. Ability to sell and influence others

Forbes, 2013

You will also learn physics more deeply



Hake, Am. J. Phys., 66, 64 (1998)

Although sometimes, it might not feel like it.



Projects and Practices in Physics (P³)

- Introductory Calculus-based Mechanics where (weekly) you will solve complex problems in groups of 4
- Supported by pre-class homework and course notes + the internet (and instructors)
- no need to bring your own computer
- Important concepts and sub-problems appear on post-class homework
- Individual and Collaborative Exams

Projects and Practices in Physics (P³)

Projects and Practices in Physics

- Forces cause changes in momentum
- Energy is conserved
- Torques cause changes in angular momentum
- Macroscopic phenomenon are the result of microscopic interactions

You will be as prepared for PHY 184 as students taking other sections.

Pre-class Reading & Homework

- Course Notes and Videos (No Book Necessary!)
- pcubed@pa.msu.edu
Read, watch videos, and take your own notes
Ask questions! Get help when you need it
- Pre-class Homework
 - <http://www.webassign.net/>
due Mondays at 11:59pm (exception: set 1 is due Thursday, Jan 14 at noon)
short conceptual homework assignments
Don't guess! Get help when you need it

Creating a Class WebAssign Account:

- Self enroll using class key: **msu 2996 4987**
- <https://www.webassign.net/v4cgi/selfenroll/classkey.html>

WebAssign

Enroll with Class Key

Enter the Class Key that you received from your instructor. You will only need to complete this once. After you have created your account, you can log in on the main page.

Class Key:

Class Keys generally start with an institution code, followed by two sets of four digits.

SUBMIT

Creating a Class WebAssign Account(2):

- You'll get this class:

WebAssign

Enroll with Class Key

Your Class Key has been recognized.

Verify Class Information

Course: PHY 183 --- Section 003 & 004

Instructor: Marcos Caballero
Michigan State University

YES, THIS IS MY CLASS No, this is not my class

- select yes
- Then select, I need to create a WebAssign account.
- Unless, you already have a WebAssign account and know all of your information, then you can select this option

Creating a Class WebAssign Account(3):

- Fill in your info:

Class Information

Course: PHY 183 - Section 003 & 004

Instructor: Marcos Caballero

Michigan State University

Required fields are marked with an asterisk (*).

Log In Information

Preferred Username *

Institution

Password *

Re-Enter Password *

Student Information

First Name *

Last Name *

Email Address *

Student ID Number

CREATE MY ACCOUNT

Creating a Class WebAssign Account(4):

- You're all set!

WebAssign

Enroll with Class Key

Account Created

Your account has been created.

Review your information below. You will need it for logging into WebAssign

Username: rich

Institution: msu

Password: (hidden)

LOG IN NOW

WebAssign -- Homework

- Pre-class set 1, post-class set 1 and Physics survey now available

WebAssign

Home | My Assignments | Grades | Communication | Calendar | My Account

Home

My Assignments (7)

Name	Due
Pre-Class Homework 1	Jan 14, 2016 12:00 PM EST
Post-Class Homework 1	Jan 12, 2016 11:59 PM EST
Details about Physics Survey	Jan 17, 2016 11:59 PM EST

My Class Insights

Make the most of your study time

- ✓ Sign the names you need to study
- ✓ See which topics you know
- ✓ Ask your peers

View My Class Insights

Grades

My Current Assignments

Rich Halliday
PHY 183, Section 003 & 004, Spring 2016
Instructor: Marcos Caballero
Michigan State University

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Notifications | Help | My Options

Class Meetings


- Working in groups of 4 to solve complex physics problems.
- We will facilitate your work: ask questions, prompt discussions, et cetera
- Typically, you will solve a problem on Tuesday, then solve a new problem on Thursday, which extends Tuesday's.
- The complex problems contain the core learning goals of the week.
- We will ask follow on questions when you have designed your solution to test your understanding.

Class Meetings

- Your in-class work will be assessed by us on a 100 point scale:
 - How well do you help your group to ensure that all members develop an understanding of the physics (Group Understanding)?
 - How well do you help your group manage itself in terms of the discussion and use of ideas (Group Focus)?
 - How well do you develop your own understanding of the physics (Individual Understanding)?
- These 3 scores will be averaged together using weight factors that play to your strengths.
- You will be given feedback from us each week along with your grade.

Far more details are in the
"How will group work be assessed/graded?" document

Supporting Your Success

Facts	Lacking	Organize your whiteboard work
Approximations & Assumptions	Representations	
		Read and interpret new programs

Post-class homework

- <http://www.webassign.net/> - due Sundays at 11:59pm; short homework assignments that emphasize core concepts and sub-problems.
- This homework will be available all week, so you can work on it anytime.
- We are taking great care to make sure your out-of-class work is no more than other 183 students!

Three Evening Exams and a Final

- Individual Portion
 - Open-ended, hand-graded exams that you will complete by yourself
 - Similar to pre-class and post-class homework
- Collaborative Portion
 - Open-ended, hand-graded exams that you will complete in your group
 - Much simpler versions of your in-class work
- Mock exams are available at least a week before the exam online via WEBASSIGN

Exams are 6:00-8:30pm Feb. 10th, Mar. 16th, & Apr. 13th

Grading Information

- | | |
|--|------|
| • Pre-class HW: | 10% |
| • In-class group work (drop lowest 2): | 20% |
| • Post-class HW: | 20% |
| • 3 evening exams (ind. 75%, group 25%): | 30% |
| • Final exam (ind. 75%, group 25%): | 20% |
| • Total: | 100% |

