

# Where the heck are you?

**Q:** What do you have in common with **medical students** and **law students**?

**A:**



# Where the heck are you?

**Q:** What do you have in common with **medical** students and **law** students?

**A:** You are all enrolled in a **professional** school!



# @#\$\$%\*& Professors



- Professors are a **bridge** between engineering students and the engineering profession.
- Our job is to encourage, mentor, and educate motivated students who will be an **asset** to our profession.
- Our job also is to **protect** the profession from students who will be detrimental to our profession.

Bottom line—failing students **will be failed.**

# My Scot Pollard Story



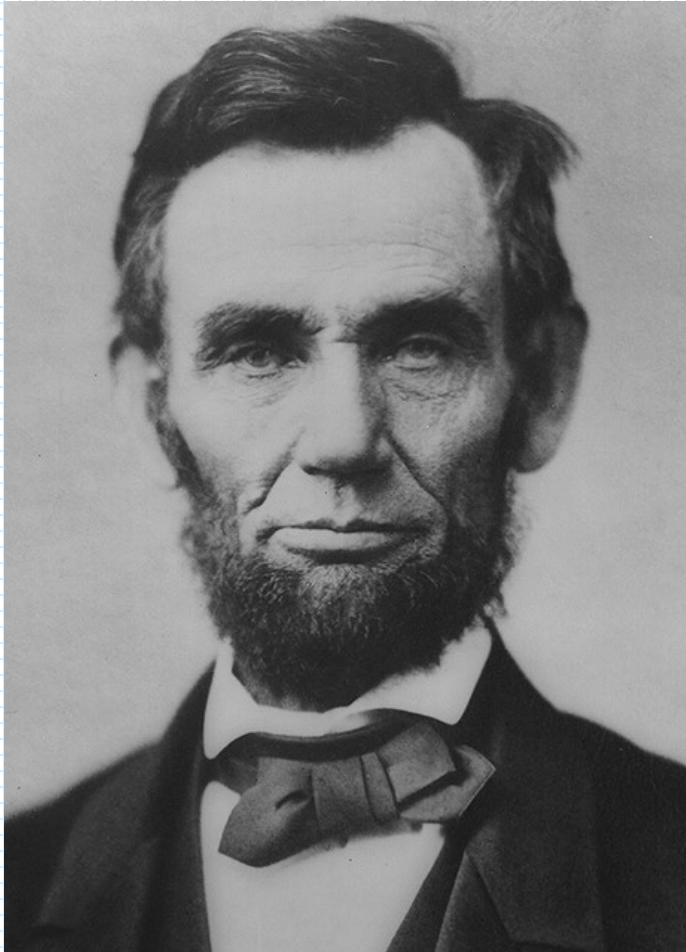


# My Scot Pollard Story



- You **all** have tremendous ability!
- But you might **not** be getting tremendous results.
- Success is often the application of good **habits** and **strategies**.
- Failure is conversely the application of **poor** ones.

# Advice from Abe



The dogmas of the  
quite past are  
inadequate to the  
stormy present.....  
.....as our case is  
new, so must we  
think anew, and act  
anew.

State of the Union, 1862

# First or Last?



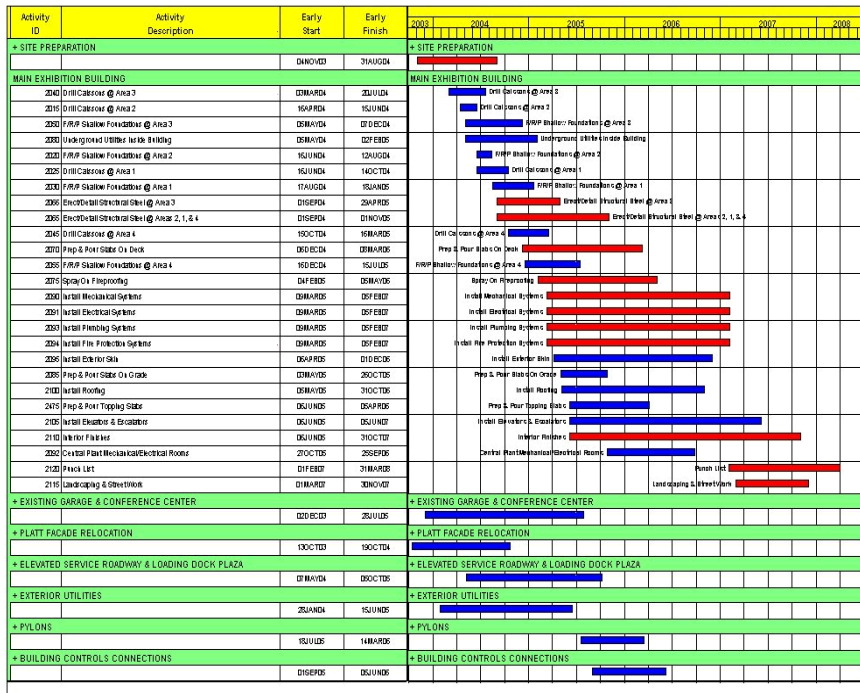
# First or Last?

- Often, students spend time on scholarly pursuits **after** time is spent on all **other** priorities.
- Successful students **first** spend the necessary time on intellectual priorities, and then make the best of the time that's left.
- If you've every had a **paying job**, you're familiar with this concept!





# 168

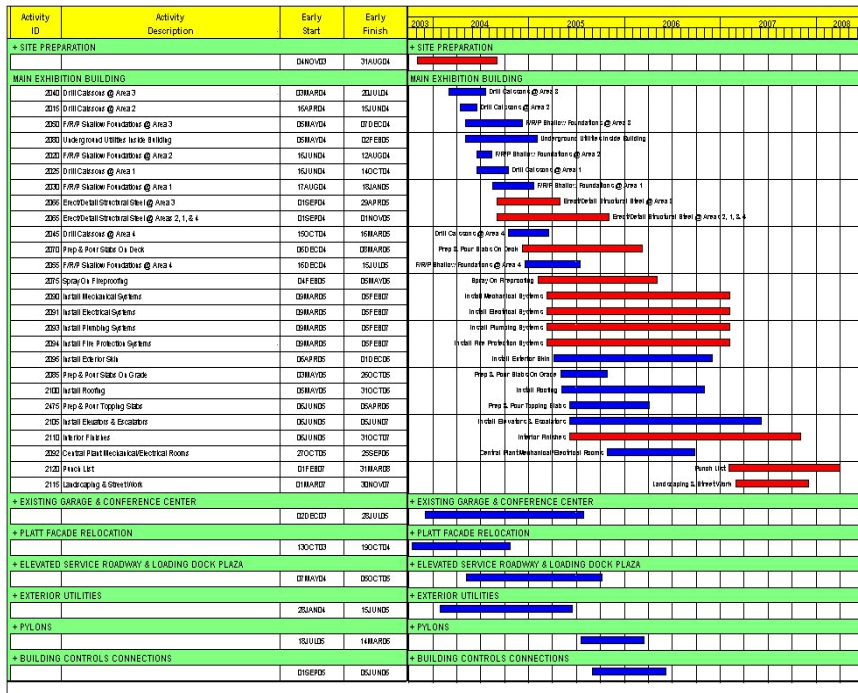


Sheet 1 of 1

**Q:** How many hours are there in single week?

**A:**

# 168



Sheet 1 of 1

**Q:** How many hours are there in single week?

**A:** 168!

- To take advantage of these hours, you must plan your work, and then work you plan.

# Racquetball as Life



# Racquetball as Life



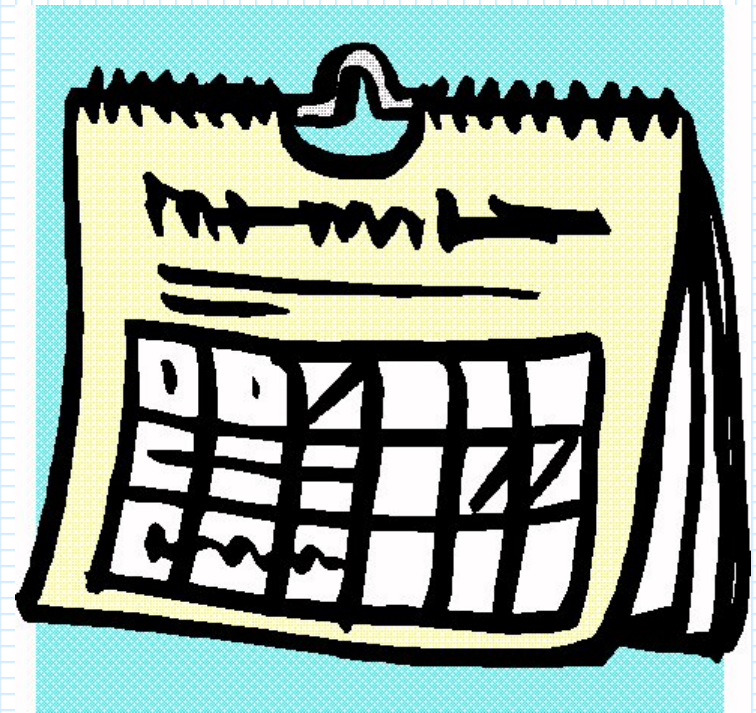
- College is a time of great **opportunity**—both intellectually and socially.
- There are enough hours in the week to do both—provided that you are always involved full-blast in “**all one thing or all the other**”.
- **Putzing** is the enemy of a happy college life!



# The most important week of the semester

Q: Which week of the semester is most important?

A:



# The most important week of the semester

**Q:** Which week of the semester is most important?

**A:** The first one!

- Successful students are **proactive**, whereas **reactive** students are prone to disappointment.
- Spend your **first** week preparing for the requirements of the **second**, and then you will be able to spend the second week preparing for the third!



# Expectations



# Expectations

- **Computers** can calculate the correct answer; it takes **humans** to understand why the answer is correct!
- As a **professional engineer**, you will be asked to solve problems for which there is currently **no known answer**.
- Thus, as an engineering **student**, you will be asked to answer questions for which you have **not** previously been provided with the answer!





# Symbols and Enlightenment

Consider the **symbols** to the right.

- What do they **tell** you?
- What **images** enter your mind?
- Is there **meaning** obvious?

obx

cta

gdo

# Symbols and Enlightenment

- Doh! I placed these symbols in an **incorrect order**.
- No matter, the symbols are the same; their order makes no difference in their meaning—or does it?

box

cat

dog

# The Language of Engineering

- Mathematics is likewise expressed as a series of **symbols**.
  - Like any other language, the symbol order is **not arbitrary**, but rather conveys a specific physical **meaning**.
  - The challenge of engineering is to **understand** the physical **meaning** of a mathematical statement, or to **express** a physical meaning as a mathematical **statement**.

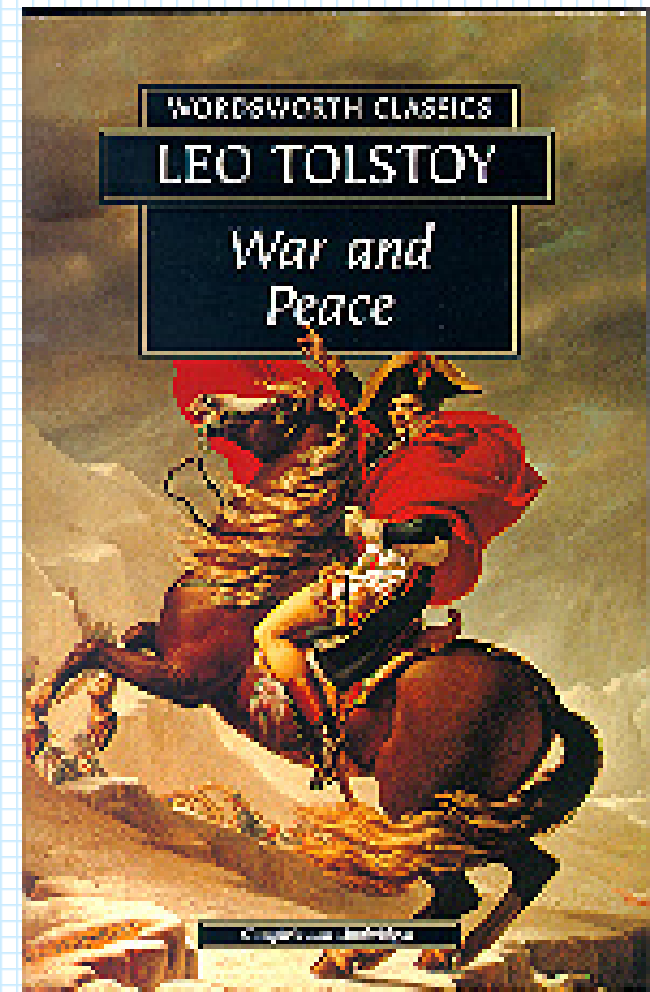
Mathematics is the unambiguous **language** of engineering and physics—**learn to speak it!**

$$\oint_C \mathbf{H}(\bar{r}) \cdot d\bar{\ell} = I$$

$$\oiint_S \mathbf{D}(\bar{r}) \cdot d\bar{s} = Q$$

$$\nabla^2 V(\bar{r}) = -\frac{\rho_v(\bar{r})}{\epsilon_0}$$

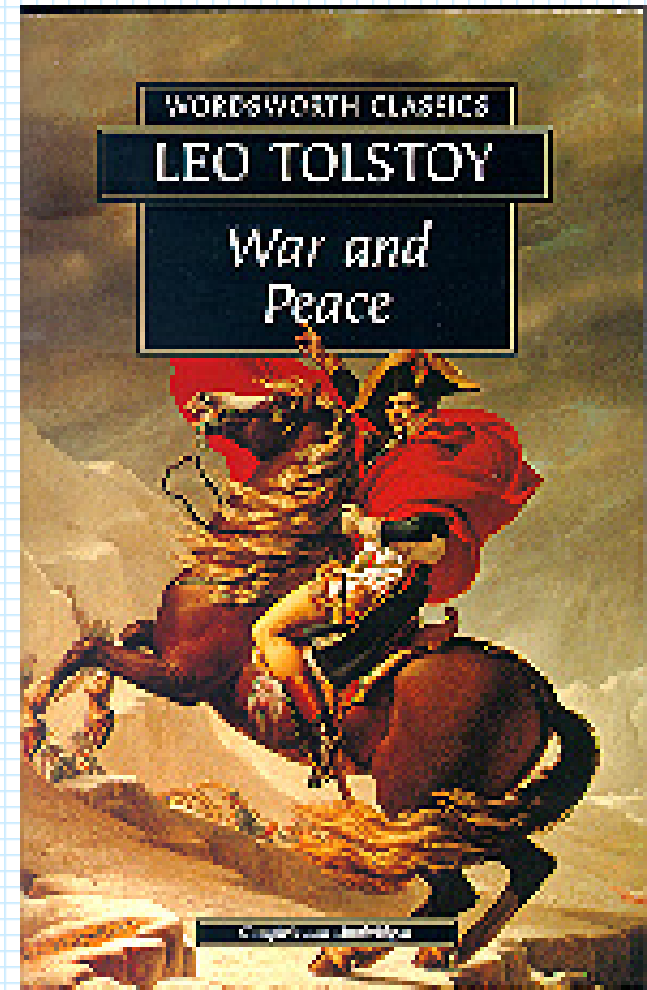
# A narrative, not a reference





# A narrative, not a reference

- Your textbook and notes provide a **continuous narrative**.
  - **First:** The **first** sentence of the **first** paragraph of the **first** page of the **first** section of the **first** chapter.
  - **Second:** The **second** sentence of the **first** paragraph of the **first** page of the **first** section of the **first** chapter.
  - **Last:** The **last** sentence of the **last** paragraph of the **last** page of the **last** section of the **last** chapter.
- Your textbook and notes are **not** the Encyclopedia Britanica, nor the Oxford English Dictionary, nor a software manual.



No easier than a jigsaw



# No easier than a jigsaw

- Your professor can show you each individual piece of the puzzle, but **you** must put these pieces together.
- The pieces **cannot** be put together all at once.
- The big picture is revealed only after an application of a large dollop of **persistence, patience, precision and professionalism** (the 4 killer p's)!



# Efficiency



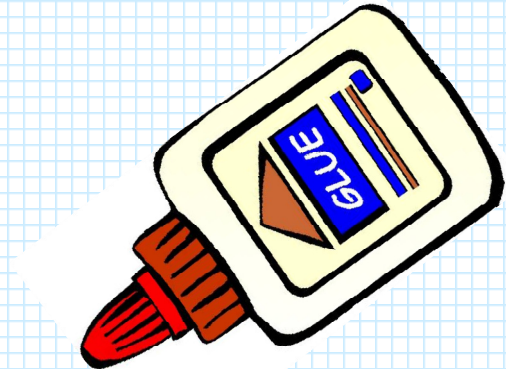


# Efficiency

- Efficient and effective learning requires **assistance**.
- If you are struggling to understand, go **get help**.
- **Office hour** attendance can be highly productive—provided that you arrive **knowledgeable of your ignorance!**



# Prepare your brain cells



# Prepare your brain cells

- Come to class each day **prepared to learn.**
  - Read all material relevant to the last lecture.
  - **Review** the material about to be covered in the next lecture.
- I will make a **whole** lot more **sense** if you do!

