Making the Leap

Transitioning from a Community College to a University

My first year experiences

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The Meaning of Community

(It's a small world after all...)

The Marv Nelson Learning Center

Our biggest building

-And it should be-

It holds Physics, Chemistry, Biology, Geology, Nursing, Occupational Therapy, and more

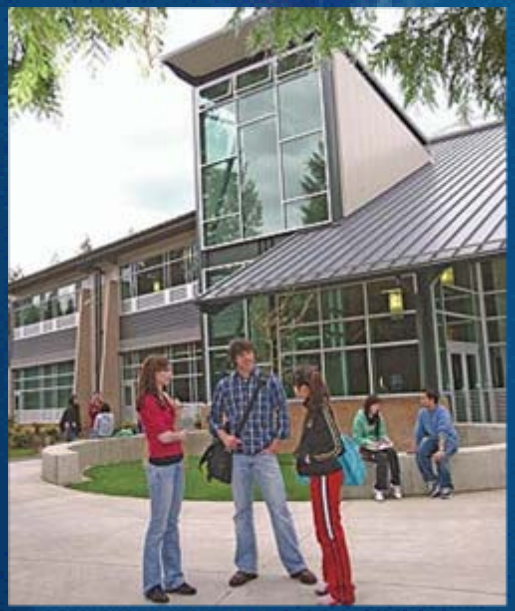
- Small departments means 30 is a large class-Your teachers and advisers will know you before you leave (and you have good access to them)
- It also means following the same people through your program of study for 2 years (at least)

The Meaning of Community (continued)

You chose it because it was close to home

- Most of your fellow students live close as well
- It's possible to hold project meetings and study sessions where most people can attend (on a regular basis, even)
- This leads to good working relationships with your fellow students

That's our only library→



Everything Computer Science fits in here ←

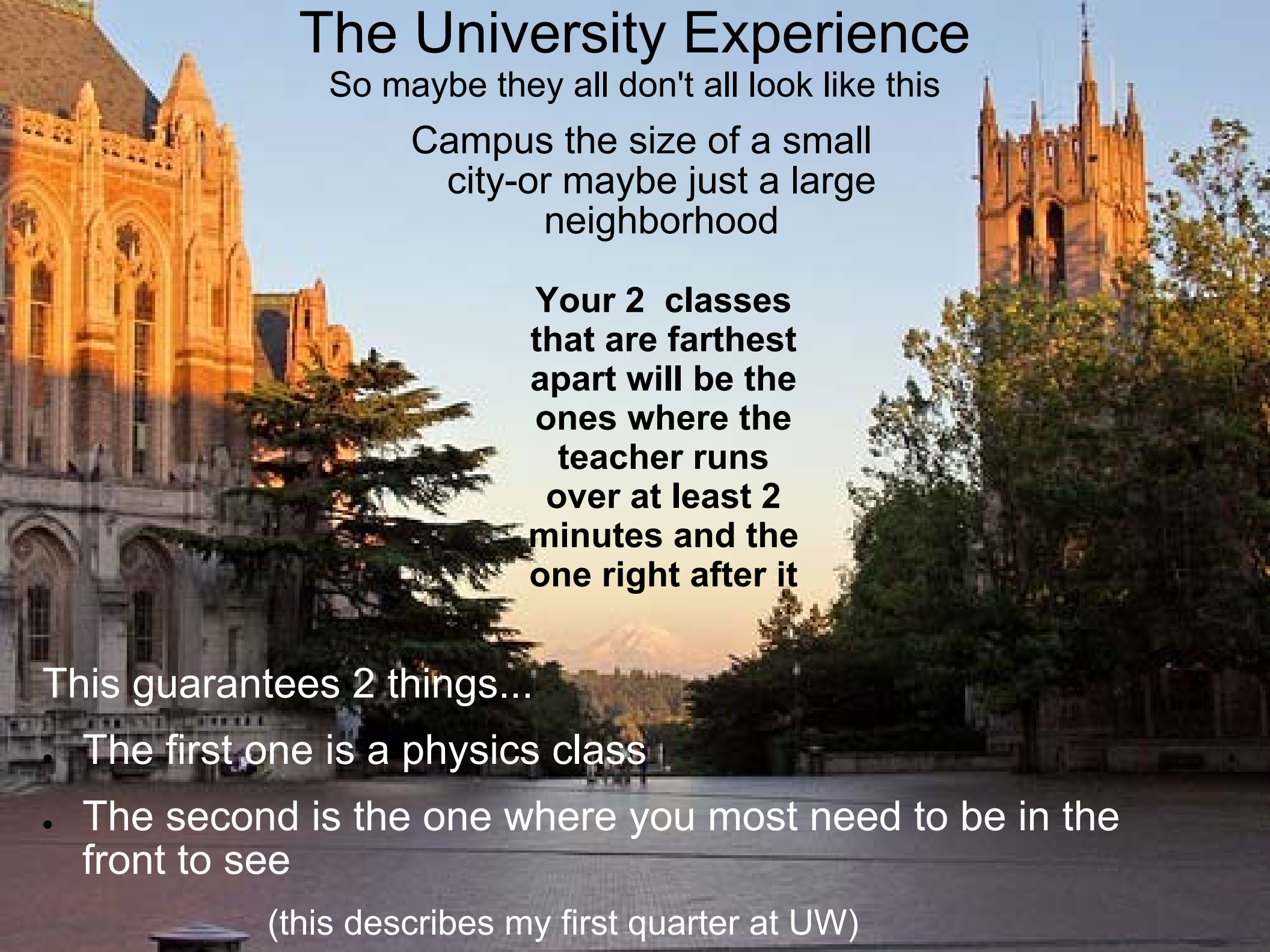
Everything Engineering, Forestry and some math fits in here ↓

The University Experience

So maybe they all don't all look like this

Campus the size of a small city-or maybe just a large neighborhood

Your 2 classes that are farthest apart will be the ones where the teacher runs over at least 2 minutes and the one right after it



This guarantees 2 things…

- The first one is a physics class
- The second is the one where you most need to be in the front to see

(this describes my first quarter at UW)

That Big City Feel....

- Classes that fill an auditorium (for the first few weeks, anyway...)
- A library for every purpose
- Getting there is half the fun (Planes, Trains, and Auto mobiles)

Our parking lots

A) $3 plus a gallon for gas and the quest for parking

B) High speed trains and low speed buses- It's easier to do homework or read than when driving

C) Just abandon your life and move on campus

unless you have a family, which brings you back to A or B (I ended up going with B)

Your Neighborhood Department

- Departments are buildings spread out over regions

←These are just physics and chemistry ↑

Physics, Chemistry and Geology get 6 buildings
(That I know of)

Liberal Arts ↓

The new Electrical Engineering building and Comp Sci attached on the other side →

Each discipline of engineering has it's own building or complex

This is the Mechanical complex →

It's The Same Old Song and Dance

- The classes you took at your CC are equivalent to those your university counterparts did (really, it's why they transfer)
- Textbooks still cost you nearly half what you paid for tuition

"The school may seem big and scary, but your department isn't. You will see the same people over and over again, in classes, in the computer lab, in the halls, etc. It isn't hard to make friends; you're all going through the same thing."

The most important thing that is the same as at your community college is.....

You

- You're still chasing your dream

But with different partners...

Not just new teachers, but another style of teaching

- Your professor may or may not have or be chasing a Nobel prize
- They could possibly have written or collaborated on a textbook
- You learn as much from the TA (a graduate student earning their keep) as you do from the professor, AND possibly more
  (go visit them during office hours, they get bored and lonely...)

Department structure, policies, and philosophy are geared towards different goals

- Most are research oriented, with graduate students leading the research
- Advising is geared toward matching your skills and goals with the needs of your chosen profession

"...you may not be an A student anymore. Even if you are, you probably won't feel like one most of the time. The professors go out of their way to make the tests (and often the assignments) very difficult to ensure a good distribution of scores. You may feel like you are going to fail a lot of the time, but if you are working hard that isn't likely. "

And a new floor

You have to learn your way around again

A lot farther from home, unless you live on campus

It may be difficult at first to find time to work with your fellow students-

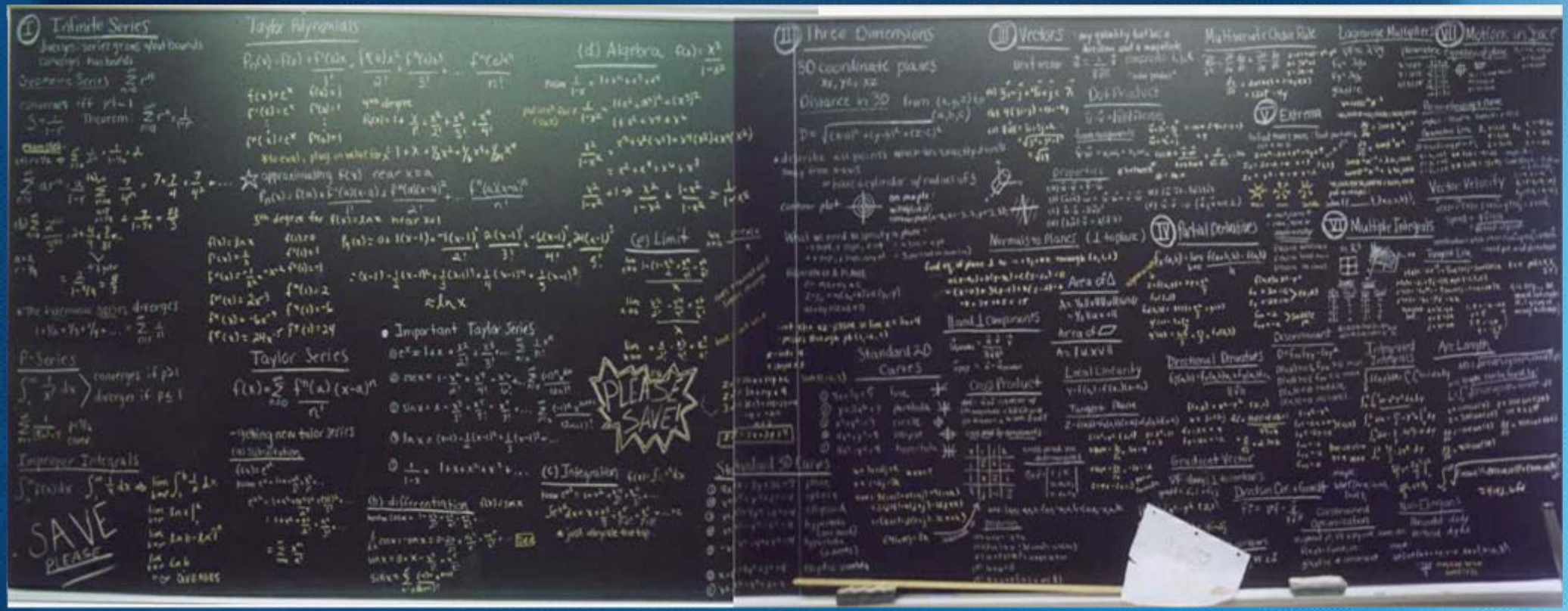
Seeing the same people every day will make it easier

If your program of study has lots of labs, (EE, CS, CSE), it's a great place to start because you can always find someone there

Academically speaking

Head first into the hard stuff

Enough with the basics, let the games begin...



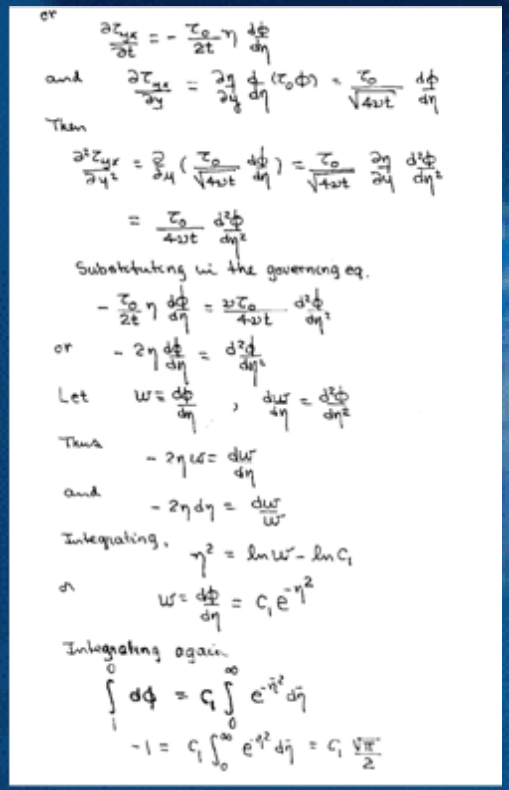
The Basics ↑

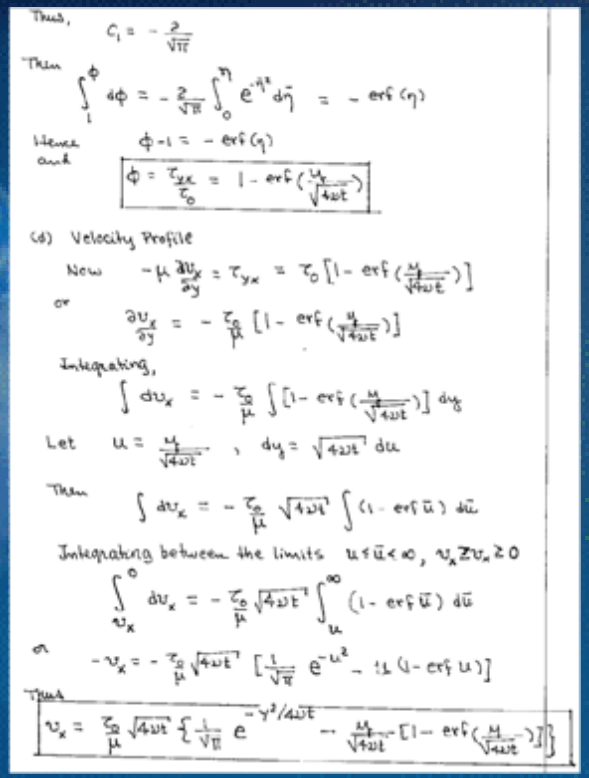
They keep telling you you're going to use this stuff...

"...and then your graded on it, AND THEN you learn some real shortcuts that made the previous stuff moot...Laplace transforms replaces differential equations in circuit analysis (SOOOO much easier)"

The Games

Quick, without reaching for your textbooks, how many symbols or equations do you recognize?





Fluid Dynamics ↑

O.K., so maybe you're not a ChemE major, but you will be stepping it up several levels at once in your chosen field…

Chemical Thermo-dynamics

→

→

2. For the Acetone (1) / Water (2) system, the Wilson parameters are: $a_{12} = 291.27$ and $a_{21} = 1{,}448.01$ cal/mol. The liquid phase molar volumes at 25°C are: $v_1 = 74.05$ and $v_2 = 18.07$ cm³/mol. Using the Wilson equations to describe the solution non-ideality, evaluate the following:

i) BUBL P and y_i at $T = 333.2$K, $x_1 = 0.3$.

BUBL P $= \gamma_1 x_1 P_1^s + \gamma_2 x_2 P_2^s$

from Antoine equas. (at $t = 60$°C $= 333.16$K) and Appendix of the text:

$$P_1^s = \exp\left[10.0311 - \frac{2940.46}{333.16 - 35.93}\right] = 1.148 \text{ bar}$$

$$P_2^s = \exp\left[11.6834 - \frac{3816.44}{333.16 - 46.13}\right] = 0.1993 \text{ bar}$$

from Wilson equas., at $x_1 = 0.3$:

$$\ln\gamma_1 = -\ln(0.3 + 0.7\Lambda_{12}) + 0.7\left(\frac{\Lambda_{12}}{0.3 + 0.7\Lambda_{12}} - \frac{\Lambda_{21}}{0.7 + 0.3\Lambda_{21}}\right)$$

$$\ln\gamma_2 = -\ln(0.7 + 0.3\Lambda_{21}) - 0.3\left(\frac{\Lambda_{12}}{0.3 + 0.7\Lambda_{12}} - \frac{\Lambda_{21}}{0.7 + 0.3\Lambda_{21}}\right)$$

with

$$\Lambda_{12} = \frac{v_2}{v_1}\exp\frac{-a_{12}}{RT} = \frac{18.07}{74.05}\exp\frac{-291.27}{(1.987)(333.16)} = 0.15715$$

$$\Lambda_{21} = \frac{v_1}{v_2}\exp\frac{-a_{21}}{RT} = \frac{74.05}{18.07}\exp\frac{-1448.01}{(1.987)(333.16)} = 0.45985$$

Then

$$\ln\gamma_1 = -\ln[0.3 + 0.7(0.15715)] + 0.7\left(\frac{0.15715}{0.3 + 0.7(0.15715)} - \frac{0.45985}{0.7 + 0.3(0.45985)}\right) = 0.77574; \quad \gamma_1 = 2.1722$$

$$\ln\gamma_2 = -\ln[0.7 + 0.3(0.45985)] - 0.3\left(\frac{0.15715}{0.3 + 0.7(0.15715)} - \frac{0.45985}{0.7 + 0.3(0.45985)}\right) = 0.22644; \quad \gamma_2 = 1.2541$$

and,

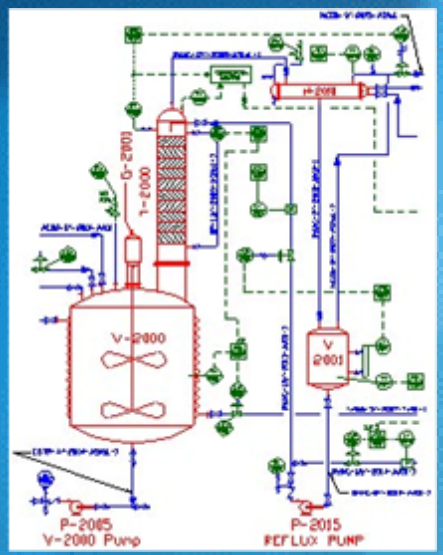
BUBL P $= 2.1722(0.3)(1.148) + 1.2541(0.7)(0.1993) =$ **0.923 bar**, and

$$y_1 = \frac{\gamma_1 x_1 P_1^s}{P} = \frac{2.1722(0.3)(1.148)}{(0.923)} = \mathbf{0.810}.$$

↑ ↑ ↑ ↑ ↑ ↑

You get to use these

To design this →



The Payoff

Research opportunities on the forefront of science

Internships at companies with leading edge research and development

Much of the current advancement of scientific knowledge is done in Universities-

Companies wanting to hire graduates will look for experience in these areas

How to be ready?

No one is ever really ready for a big change, so

How to make the transition as smooth as possible

Expect to give up more of your personal life to achieve the same amount of work, sometimes that work could eat up a lot of time but be worth very little...

- it will take longer to find regular study partners , and you will do more on your own

Fill up your transfer credits-

- If you possibly can, don't leave a series unfinished
- Apply as many transferable electives as you can- you'll need the time saved for your core classes

Before: Get involved outside of class

- Become accustomed to finding ways to supplement your education in any way you can

Research opportunities are hard to find at two year colleges. If you find one, take it- otherwise

Create them for yourself and fellow students by joining clubs and entering competitions

- The motivation and inspiration brought about by connecting your studies with the real world will keep you going during the rough times (and there will be some)
- Finding research opportunities at the university will be easier

After: Keep Your Focus

- All of the additional challenges you face once you are at the university can be seen as either distracting and discouraging, or practice in overcoming obstacles

- Be prepared to analyze your commitment to your chosen field, recognize what it will require of you, and convince yourself this is (or isn't) what you still want to do.

This is not easy stuff, you don't need the burden of second guessing- You do need to make sure you're doing what you want with your life, and whether it's worth the time and energy in the long run

(This describes my second quarter at the UW)

Remember why you're here

Your inspiration…

Fig. A2 Essential Equations
a) Nuclear & Atomic Environment

1
$$g_i = \frac{\tilde{q}_i}{\tilde{m}_i}\tilde{E}_c = \beta_i^2 \frac{e}{u}\tilde{E}_i$$

2
$$g_i = \frac{v_i^2}{\phi_i}\cdot\frac{1Hz}{\nu} = \frac{v_i^2}{\phi_i\,\nu^*}$$

3
$$\lambda_{Vacuum} = \frac{h}{uc} = \pi\phi_c = 1{,}331\cdot 10^{-15}\ \mathrm{m}$$

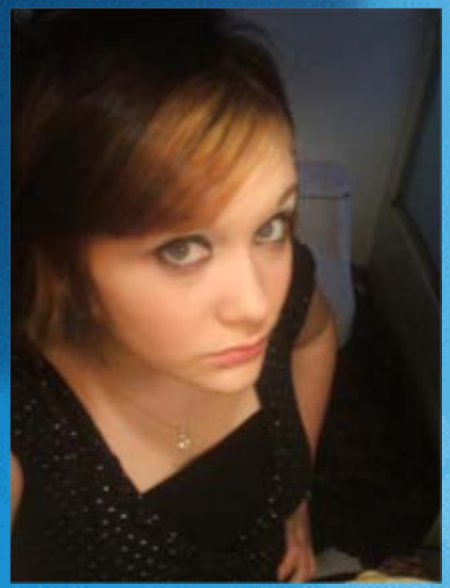
4
$$\sigma_{v_i} = \frac{\sigma_i}{\sigma_E} = \frac{\tilde{E}_i}{\tilde{E}_E} = \frac{\phi_E}{\phi_i}$$
$$\tilde{m}_i = \sigma_i \cdot u;\ \tilde{q}_i = \beta_i^2\sigma_i^2 e;\ \tilde{Q}_i = \sigma_i^2 e$$

5
$$\tilde{m}_i = \frac{h}{\tilde{c}_i^2}\nu = \frac{h\nu}{\tilde{\lambda}^2\tilde{\nu}^2} = \frac{h\nu}{c^2}\tilde{n}_i^2 = \frac{h\nu}{c^2}\sigma_i$$

6
$$h\cdot 1Hz = e\cdot\tilde{u}$$
$$\tilde{u} = 4{,}135701327\cdot 10^{-15}\ \mathrm{V}$$

Your Motivation…

I want to understand this



And this
(my teenage daughter)

The Most Asked Question

- On a recent visit to our old campus, a friend and I asked our former classmates “What would you most like to ask a first year University transfer student?”
  - They were mostly versions of the same question

“Does the Community college experience prepare you for life at the university”

-Academically

-Emotionally

-Mentally

The only answer

- The school does not reach out and do anything to you. It is a network of latent opportunities waiting for you to create the experiences that will shape your future
- “Though sometimes opportunities will just waltz right up to you”, you still need to be able to recognize them for what they are (not everyone sees the same thing in the same way...)

- The answer depends entirely on what kind of experience you create for yourself

Conclusion

You can anticipate what will be different, but you can't know how until you've lived it- all transitions have a learning curve and the best you can do is be flexible and persistent

The best way to prepare for the transition to a university is to create the best community college experience you can

Some paths are harder than others

Life is not conservative…

Where you end up and how much work and energy you spend to get there is the most path Dependant thing you will ever do…