

Badwater
Ultramarathon R

Welcome to Biology 221

Dr. Greg Russell
Fall 2009



Kiehl's
SINCE 1851

My Background



My Background



How do you find your syllabus?

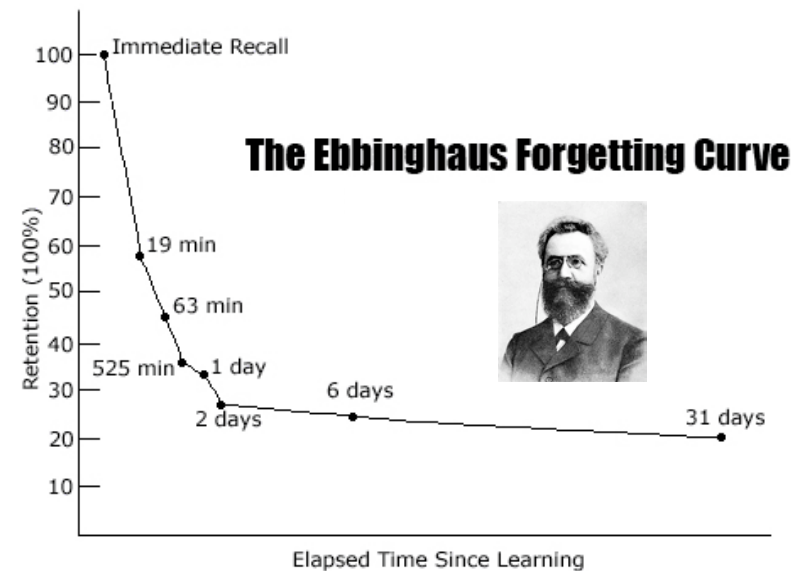
There are two ways:

1. Visit my OCC website (no password required)
2. Access it via MyOCC (password required)

Your signed syllabus agreement is due by **Monday, September 7**
and is worth **5 points**

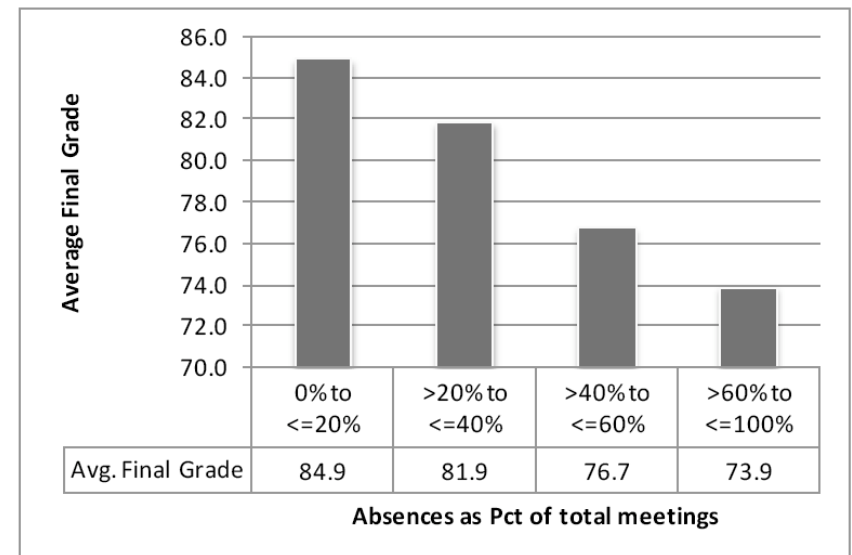
Success in Biology 221: what does it take?

- Read the book *before* coming to class
- Pretend like I don't give you the notes
- *Rewrite* your notes after class



Success in Biology 221: what does it take?

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- *Rewrite* your notes after class
- Ask questions when you don't understand something
- Come to my office hours
- This *should* be a no-brainer, but **come to class!**



In Lab...

Much of the same is true. However:

- Take advantage of all your time in lab; you need it
- Work on your lab reports at home
- Form study groups

What is Physiology?

How the body and its parts function

We can have many subdivisions of physiology:

*Neuro*physiology
Cardiac physiology
Ecological physiology
Evolutionary physiology

What is anatomy?

The study of the **structure** and **shape** of the body and its parts and their relationship to one another

We can study either **gross** or **microscopic** anatomy

What's form without function?

Having a thorough knowledge of how things are put together helps us to understand how they work.

This is true for everything from mechanics to our own bodies.



Our general 'themes'

1. The coupling of form with function
2. Emergent properties (emergence)



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4. Homeostasis
5. Proximate-ultimate causation

The case of the RMS Titanic

On the night of 14 April 1912, during the ship's maiden voyage, Titanic hit an iceberg and sank two hours and forty minutes later, early on 15 April 1912.

The **What was the ultimate reason the Titanic sank?**
1,5 **What was the proximate reason?**
de

disasters in history. The high casualty rate was due in part to the fact that, although complying with the regulations of the time, the ship did not carry enough lifeboats for everyone aboard. The ship had a total lifeboat capacity of 1,178 people, although her capacity was 3,547.

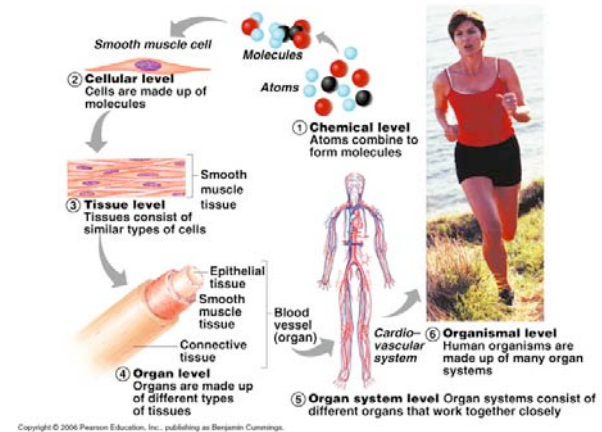


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2. Emergent properties (emergence)
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6. Human evolutionary history

What approach are we going to take?

- Many of the things we study may not make “sense” to you.
- They are not what an engineer would call ‘well-designed’
- From an evolutionary point of view, we are simply a compromise. The result of natural selection is adequacy, not perfection.
- In other words, not all possibilities are open to animals, and they sometimes have to make the best of bad situations.



Badwater Ultramarathon

What approach are we going to take?

We are also going to follow an athlete through the Badwater Ultramarathon

- Badwater in Death Valley (-282 feet)
- 135 miles
- held in **July** (when Death Valley temperatures are 115-125 degrees)
- run **NON-STOP!**

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