**Chemistry in the Natural World**

Term 5 2018/2019

|  |
| --- |
| Andrea Pionek  apionek@cornellcollege.edu  Russell Science Center 402 x4308  286-8161 (No calls after 8 PM. Email ok.) |

Office hours are 11:00-11:30 AM on non-exam days, whenever my door is open and I am in my office, or by appointment. If you need to meet after 3 PM, please schedule an appointment.

**Course goals**

In this block we will study how chemistry impacts everyday life and current issues in our society. To do this, we need to discuss several concepts that have widespread application in chemistry: matter; chemical bonding and structure; water; acids and bases; and energy. We will then apply these concepts to see how they influence our everyday life in areas such as the chemistry of life, food, and the home. In addition, we will discuss issues and problems we face as a society. These include acid rain, the decisions to use nuclear and solar energy, and the protection of water and air quality. We will see that chemistry plays a central role here.

**Texts and other materials**

Required:

Chemistry in Focus: A Molecular View of Our World 7th ed. Tro, Nivaldo

A scientific calculator (able to do exponential notation) – bring daily

3-ring binder

OWLv2: Online Web-based Learning System – see your text book for info. (Optional)

**Meeting times, format, and expectations**

We will meet each day from 9:00-11:00 AM and from 12:30-3:00 PM. Labs will be done where they fit with lecture so please come dressed for lab every day. Class will be a mixture of lecture, discussion, group work, problem solving, and laboratory work. Active participation in class is expected, and you will get more from the class if you are involved.

|  |  |  |
| --- | --- | --- |
| **Point Distribution** | Quantity | Points |
| Laboratory, Group Activities | Lots! Weighted to 250 | 250 |
| Quizzes | 3 @ 50 points each | 150 |
| Unit Exams | 2 @ 100 points each | 200 |
| Exam & quiz reworks | 5 @ ? points each | 50 |
| Final Exam | 1 | 200 |
| Homework | Daily – a good idea | 50 |
| Presentation | 1 | 100 |
| Total |  | 1,000 |

Grading Cut-offs

875 points A-

750 points B-

600 points C-

500 points D-

The point distribution for the course is given above along with grading cut-offs. Due to the difficulty of the exams, not the student performance, the cut-offs may be lowered but they will not be raised.

**Laboratory Experiments**

In addition to the weighting shown above, you must pass the lab portion of the course to pass the course. You may see lab material being covered on the exams and quizzes.

**Quizzes**

These will be 30-45 minute in-class problems to work for credit. They may also be given online to be completed outside of class time. Make-up quizzes will not normally be given. If you arrive late for class and the quiz has already been handed out, you will only be allowed to work on it for the time allotted and will not be given extra time. If you arrive late to class and the first quiz has already been turned in, you will not be allowed to make up the quiz, but you may have a copy of it to study from. Quizzes may be open-note or open homework so staying on pace with the homework is a good idea.

**Exam Rules:** No cell phones or listening devices, no calculator backs, no caps.

**Unit exams**

These will cover a specific portion of the course. Unless arrangements are made 24 hours in advance, students must take the exam at the scheduled time. Make-up exams will not be offered. If the student has an unsatisfactory performance on an exam (less than 50%), arrangements must be made to discuss the problem with the instructor within one day of the exam’s return.

**Exam and quiz reworks**

I will collect and grade exam problems that you missed. These need to be fully written out on separate paper and stapled to the top of your exam. For short answer problems, T/F, or FIB, include an explanation. Do not write on your corrected exam. It is very beneficial for you to do these reworks immediately, and the due dates for the exam reworks will reflect this. In addition, this should serve as extra incentive to study well for exams; the less you miss on the exam the fewer reworks you need to do.

**Final exam**

The final exam will be comprehensive, but the material in the latter portion of the course (since Exam 2) will be weighted more heavily to provide balance to all material covered.

**Homework and Journals**

You will need to keep a journal for this course separate from class notes that will contain all of your worked problems from the chapters, worksheets, extra credit. The journals will be turned in at each exam. You may also be allowed to use your journal on some of the quizzes so you will want to keep it well organized and up to date. Students often find the journals quite helpful in preparing for the exams.

**SUGGESTED FORMAT:**

* Keep your journal in a **three-ring binder**. This will allow you to add pages as needed.
* Everything in the journal must be your own work. You are welcome to use any paper that you choose including the backs of scratch paper from the recycle bin.
* You may use pencil or pen (or word processor with spell checker for the chapter summaries) but you may not erase or use white-out. The idea here is that your mistakes (you will make a lot of them) are an important part of the learning process. When an error is made you should simply cross it out lightly and start again. It is critical to the learning process to be able to go back and understand why you made a mistake; otherwise you will keep making the same mistake. It is also important that once you have solved a problem that you go back and rewrite it in a neat, concise, and easy to follow form. Keeping your scratch work will help make you a better problem solver and rewriting the problems neatly will make you a better test-taker.
* Have separate sections for each chapter. Separate the sections with **dividers or tabs**.
* Each section should include:
  + the worked problems
  + worksheets done in class or as homework
  + Extra Credit: anything extra that you include in your journal will be considered for extra credit. These include chapter summaries in your own words, extra problems - evens, outside research, web sites that you used for additional tutoring, useful analogies, anything else that helps you organize and learn the material, or just the most beautiful work that I have ever seen.

**NEATNESS COUNTS, CREATIVITY IS WORTH EXTRA!**

**Group activities**

If you participate fully in class and in small group work you will receive these points.

**Attendance, Attitude, Effort**

I expect prompt attendance at all class sessions, but I will not explicitly take attendance most days. The points in this entire subsection are nothing more than an effort grade.

**Reading**

Read the text **more than once.** Ideally, you would read the appropriate sections of the text in advance, we will discuss the material in class, and then you would reread the same sections again. Plan to spend a substantial amount of time reading and working problems. (The e-book has a ‘reader’ function that may help engage another of your senses to aid in retention.)

**Presentation**

After Exam 2 you will present topics from the second part of the text. You will have a fairly large amount of flexibility here. More details will be handed out soon, and we will discuss this aspect of the course in depth at that time. No late assignments accepted.

**Miscellaneous**

Tutors are available; please see me for more information.

Students wishing to drop on the 15th day must have faithfully attended and participated in class. This includes turning in labs, taking quizzes, and exams, and turning in relatively complete journals.

Any student with a disability, medical condition, or other situation which could affect your learning (e.g., serious family trouble) is urged to contact me soon, ideally the first or second day.

Working on problems and labs together is appropriate. However, academic and scientific misconduct will be dealt with harshly. Examples include, but are not limited to, ‘collaborating’ on exams or quizzes, illegal material stored in your calculator, submitting another’s work as your own (including copying from a current or former student’s lab handouts, photocopying others’ work, quoting the text without proper citations), and falsification of lab data. **Any** question about what is (or is not) appropriate in academia or science should be directed to me. If there is any doubt at all then please ask.