CHEMISTRY 102 - SYLLABUS

GENERAL CHEMISTRY II

Instructor: Dr. Joseph Caddell

Office: SCC 333 Phone: 209-575-6810

Schedule

Lecture: Monday and Wednesday 11:55 – 1:20 SCC 314

Laboratory: Friday 9:35 – 12:40 SCC 312

Discussion: Friday 12:45 – 1:45 Online (Canvas)

Final Exam

Wednesday 4/26/2017 10:30 – 12:20 SCC 314

Office Hours:

Monday 7:45 – 8:45
Tuesday 8:00 – 9:00
Wednesday 7:45 – 8:45
Thursday 8:00 – 9:00
Friday 8:30 – 9:30
Recommended Materials

Textbook – CHEMISTRY AN ATOMS FIRST APPROACH First Edition by Zumdahl and Zumdahl or similar text.

Laboratory Materials – Paper Towels, Goggles, Lab Coat

Printer paper

Grading

Midterm Exams (8) – 65% (8.125% each)

Final Exam – 15%

Labs – 20%

I will drop your lowest exam. There are 9 exams, I will only count the highest 8 scores. Of the 8 exam scores that I do count I will replace the lowest by your score on the final if your score on the final is higher than your lowest exam score and only if you take all exams. I will drop your lowest lab grade.

Grading Scheme

A = 90% - 100%

B = 80% - 89%

C = 70% - 79%

D = 60% - 69%

F = 0 – 59%
Assignments may include handouts, web assignments, textbook problems, and in class assignments. It is the student’s responsibility to make sure that they have turned in all assignments on time.

**Regardless of scores received on any other material, if a student misses 3 or more laboratory sessions that student will fail the course.**

**Attendance/Drop Policy**

Any student not attending class the first 2 weeks of school may be dropped as a no-show unless they contact me ahead of time. Do not count on me to drop you. If you plan to drop it is your responsibility to do so. If you are given an add code by me you must use it before the next lab or you will not be allowed in the class. Any student who misses an exam or laboratory without notifying me may be dropped from the course.

**Academic Dishonesty**

If you are caught cheating on any part of this course you will receive a zero (0) for the assignment you cheat on. I will also report the incident to the dean of the division as well as the dean of students. You may not make up any work you cheat on. If you are caught cheating on a midterm I will not replace that score with your score on the final exam. Cheating includes, but is not limited to copying work from anyone, falsifying a laboratory report, using a cell phone (for any purpose) during an exam, having or using any source of information not specifically allowed by me during any exam, turning in work that you did not do, looking at someone else’s paper during an exam, changing an answer on your exam after it has been turned in, or communicating in any way with anyone other than me during an exam.

**Students With Disabilities**

If you have any disability that needs accommodation you must let me know within the first week of class or when you first find out. Once you let me know I will gladly do everything I can to assist you, as long as you can still complete the requirements for the class.
Late/Missed Assignments

Make-up exams will not be given. Missed laboratories may not be made up.

Exams

Exams will be given during the first 30 minutes of class when there is an exam scheduled. If you are late you will not be given extra time to work on the exam. Make sure to be on time.

There will typically be 10 – 15 questions on an exam. They will be multiple choice, you will need 9 scantron 815-E for the exams. You will need one scantron 882-E for the final exam.

The exams will be based on the homework problems assigned and the examples I work out in class.

Discussion

Canvas has a discussion section. This is where you can ask questions about the homework, the lectures, the laboratories, or anything else. Participate in the discussions, and ask questions. This will be a valuable tool in preparing for the exams.

Lab Work

Labs may not be made up! If you miss a laboratory your score on that lab will be a zero (0). If you miss 3 or more laboratories you will receive a grade of F for the course. The pre-laboratory write-up must be done before the beginning of lab. If you come to lab without the pre-lab done you will not be allowed to do that lab and will receive a zero (0) for that lab. If you the safety talk for the lab you will not be allowed to do that lab. Lab write-ups will be turned in through Canvas. No unauthorized experiments are allowed. You must follow the safety rules (see handout) at all times. Failure to do so may result in you being asked to leave the laboratory. If this happens your grade for that lab will be a zero (0).
If the laboratory is not clean including the back counter, balances, and lids on all chemicals, at the end of the laboratory period, everyone in that laboratory will have 20 percent deducted from their grade for that experiment.

Lab Reports

The pre-lab must be typed, printed out, and brought to lab.

For each lab that we do you are required to have the entire pre-lab written before the start of lab, unless I tell you otherwise.

If you have not completed the pre-lab before lab starts you will not be allowed to do that lab.

You will fill in the data table with data and observations as you do the lab.

You will perform the calculations with the relevant data and get the resulting answers.

You will type the calculations and conclusion, also filling in the data tables (unless I say otherwise).

The labs will be submitted online, through Canvas. You will type up the lab and save it as either a Word file or a .pdf file, then submit that file on Canvas.

THE PRE-LAB MUST BE COMPLETED AND PRINTED OUT BEFORE YOU ARE ALLOWED INTO THE LAB.

The Pre-Lab Section must include (in this exact order):

The Title is the exact name of the experiment as shown on the syllabus.

The Purpose is where you state the question or questions that the laboratory experiment is trying to answer. One sentence for each question is normally sufficient.
The Procedure In your own words write a procedure, in outline or flow-chart form only, that you will follow during the lab. The standard is that any other student in the class should be able to follow your procedure and successfully complete the experiment.

Data Table Set up a table (including a box around it) that has a blank plus units for every piece of raw data you will collect in the lab. Do not include the results of any calculations.

THE REST OF THE LAB REPORT INCLUDES:

Calculations: This is where you show all calculations. YOU MUST SHOW ALL WORK, INCLUDING UNITS AND SIGNIFICANT FIGURES to receive credit.

The Conclusion is a paragraph where you give the answer to the question or questions that were asked in the purpose section. Use your data to support your conclusion. If there was an unknown make sure to include the unknown number here as well as in the data table.

Cell Phones

No cell phones are allowed out during exams. Violation of this rule will be deemed cheating, no exceptions.

Success in Chemistry

Here is a link to an article in Time magazine about how to become an expert at anything. This is exactly what you should be doing this semester! To summarize the article:

1.) Make a long-term commitment to it. If you come into this class with the attitude that you just want to get through it, you are much less likely to do that than if you come here with the attitude that this is part of your life-long career. Even when putting the same amount of time in, those who make a long-term commitment are 400% more likely to succeed!
2.) Start with what’s important. Do an 80-20 analysis and ask yourself, “Which 20% of these things I need to learn will get me 80% of the results that I want?” This means focus on the homework!

3.) Train like you fight. Okay, so on your path to expertise you casually review your notes again and everything feels really familiar. You’re really learning this stuff.

**No, actually. No, you’re not...**

Work out those homework problems, with units and everything! Write it down. Do it again. Repeat!

4.) Difficulty is desirable. Reviewing material is one of the most popular forms of learning. Guess what? It’s also one of the least effective.

Researchers call this “the fluency illusion.” Just because it’s easy to remember right now doesn’t mean it will stay that way. “Desirable difficulty” means that the harder you work trying to retrieve something from memory, the better you learn.

Don’t merely reread stuff. Practice like a medical student and quiz yourself with flashcards.

From *Make It Stick – The Science of Successful Learning*

"Learning is deeper and more durable when it’s effortful. Learning that’s easy is like writing in sand, here today and gone tomorrow. We are poor judges of when we are learning well and when we’re not. When the going is harder and slower and it doesn’t feel productive, we are drawn to strategies that feel more fruitful, unaware that the gains from these strategies are often temporary. Rereading text and massed practice of a skill or new knowledge are by far the preferred study strategies of learners of all stripes, but they’re also among the least productive."

From *The Talent Code*

"You need to struggle. We learn when we’re in our discomfort zone. When you’re struggling, that’s when you’re getting smarter. The more time you spend there, the faster
you learn. It’s better to spend a very, very high quality ten minutes, or even ten seconds, than it is to spend a mediocre hour."

5.) Study Less. Test More!

According to Dan Coyle

"Our brains evolved to learn by doing things, not by hearing about them. This is one of the reasons that, for a lot of skills, it’s much better to spend about two thirds of your time testing yourself on it rather than absorbing it. There’s a rule of two thirds. If you want to, say, memorize a passage, it’s better to spend 30 percent of your time reading it, and the other 70 percent of your time testing yourself on that knowledge."

We usually study for a test. That’s a mistake. You want to be testing yourself long before the main event. Because testing is actually a type of studying. In fact, testing is actually a better form of studying than studying.

From How We Learn

"Studying a prose passage for five or ten minutes, then turning the page over to recite what you can without looking, isn’t only practice. It’s a test, and Gates had shown that that self-exam had a profound effect on final performance. That is to say: Testing is studying, of a different and powerful kind."

COURSE DESCRIPTION

Continuation of CHEM 101 emphasizing kinetics, solutions, equilibrium, acids and bases, electrochemistry, thermodynamics, nuclear chemistry, coordination chemistry and descriptive chemistry. Field trips are not required. Not repeatable. (A-F or P/NP) Transfer: (CSU, UC) (CC:CHEM 2B & 2BL) (C-ID: CHEM 120S) General Education: (MJC-GE: A requested ) (CSU-GE: B1, B3 requested ) (IGETC: 5A, 5C requested )
CHEM 102 LEARNING OBJECTIVES

Course Learning Outcomes

Upon satisfactory completion of this course, the student should be prepared to:

Solve abstract and complex chemical problems using General Chemistry ideas (rate laws, equilibrium, thermodynamics and/or electrochemistry) and theories.

1. Identify and use chemical laboratory equipment and instrumentation to quantitatively and/or qualitatively determine an unknown.

2. Describe key events in the development of chemistry (rate laws, equilibrium, thermodynamics and/or electrochemistry) and recognize that science is an evolving body of knowledge.