

## **CHEMISTRY 143 SYLLABUS**

### **INTRODUCTORY CHEMISTRY**

Instructor: Dr. Joseph Caddell  
Phone: 209-575-6810

Office: SCC 333

### **Schedule**

Lecture: Online

### **AND**

Laboratory: T 1:30 - 4:35 SCC 312

Final Exam: **Tuesday 12/13/2016 1:30 - 2:25** SCC 312

Office Hours: Wednesday 7:40-9:10, Thursday 7:40-9:10, Friday 7:35-9:35

### **Recommended Materials**

**Textbook** - CATALYST the Pearson Custom Library for Chemistry CHEMISTRY 143 Modesto Junior College or a similar text.

**Laboratory Materials** - Paper Towels, Goggles, Lab Coat

### **Grading**

Midterm Exams (4) - 60% (15% each)

Online Quizzes - 5%

Final Exam - 20%

Lab - 15%

I will replace your lowest exam score, if and only if you take all midterms, by your percentage score on the final exam if it is higher than your lowest exam score. Otherwise **no grades will be dropped**.

I will drop your 5 lowest quiz scores and your lowest lab score.

### **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.

Anyone who misses three (3) or more labs will receive an "F" for the course, regardless of scores on exams and quizzes.

### **Attendance/Drop Policy**

Any student that misses any class meeting before the census date (usually about 2 weeks from the start of class) without letting me know ahead of time may be dropped as a no-show. However, 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 class meeting 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/quizzes will not be given. Your score on the final exam may be substituted for your lowest exam score or an excused absence from an exam. An excused absence from an exam is an absence that the student has cleared with the instructor **before** the exam date. This will only happen if the excuse is a very good, documented excuse.

### **Lab Work**

**There are no make up labs. If you miss a lab your score for that lab is a zero.** Anyone who misses three (3) or more labs will receive an "F" for the course, regardless of scores on exams and homework.. I will drop your one lowest lab score. If you are more than 5 minutes late for a lab you will not be allowed to do that lab. Lab write-ups are due at the end of the lab unless it is an especially long lab, in which case I will let you know when the lab is due. If this happens, my initials are required on your work before you leave the lab. 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 told to leave the laboratory. If this happens your grade for that lab will be a zero.

**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.**

## **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**

Chem 143 Introductory College Chemistry 5 Units 54 Lecture hours, 54 Lab hours, 18 Discussion hours

Prerequisite: Satisfactory completion of MATH 70 or qualification by the MJC assessment process.

Recommended for Success: Satisfactory completion of MATH 90.

Designed to meet the requirements for certain nursing, dental hygiene, physical therapy, agriculture and forestry programs. Principles of general, inorganic chemistry with an introduction to organic chemistry. Uses the factor-label method of problem solving.

Credit not granted to students who have completed CHEM 142.

(A-F or P/NP) Lecture/Lab/Discussion. Transfer:(CSU, UC) General Education: (MJC-GE: A) (CSU-GE: B1, B3) (IGETC: 5A, 5C)

## **CHEM 143 COURSE LEARNING OUTCOMES**

1.Solve abstract and complex chemical problems using general chemistry principles and theories. Where applicable the student will be able to:

- 1.Determine appropriate chemical reactions required to solve the problem
- 2.Implement dimensional analysis for quantitative problems.
- 3.Determine significant figures in final results for quantitative problems.

2.Identify and use chemical laboratory equipment and instrumentation. The student will be able to use chemical laboratory equipment and instrumentation properly

3.Understand the key events in the development of chemistry and recognize that science is an evolving body of the knowledge. The student will be able to:

- 1.Understand key events and scientific analysis in the development of atomic theory periodicity.
- 2.Determine applications of chemical principles.

## **Lecture Schedule**

<b>Date</b>	<b>Material Covered</b>
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<b>8/30/16</b>	<b>Numbers and Measurements</b>
<b>9/6/16</b>	<b>Matter and Energy</b>
<b>9/13/16</b>	<b>Elements and the Atom</b>
<b>9/20/16</b>	<b>EXAM 1</b>
<b>9/27/16</b>	<b>Nuclear Chemistry</b>
<b>10/4/16</b>	<b>Nomenclature</b>
<b>10/11/16</b>	<b>Bonding Compounds and Structures</b>
<b>10/18/16</b>	<b>EXAM 2</b>
<b>10/25/16</b>	<b>Chemical Reactions and Equations</b>
<b>11/1/16</b>	<b>Gases</b>
<b>11/8/16</b>	<b>Solutions</b>
<b>11/15/16</b>	<b>EXAM 3</b>
<b>11/22/16</b>	<b>Kinetic &amp; Equilibrium</b>
<b>11/29/16</b>	<b>Acids &amp; Bases</b>
<b>12/6/16</b>	<b>EXAM 4</b>
<b>12/13/16</b>	<b>Comprehensive Final Exam (ACS)</b>

# Tentative Laboratory Schedule

<b>Date</b>	<b>Laboratory</b>
8/30/16	Introduction/Safety
9/6/16	Check-in/Tools of the Trade
9/13/16	Density & Graphs
9/20/16	<b>EXAM #1</b>
9/27/16	Specific Heat Capacity
10/4/16	Distillation and Mass Percent Sodium Chloride
10/11/16	Determining the Formula of an Unknown Hydrate
10/18/16	<b>EXAM #2</b>
10/25/16	Chemical Reactions
11/1/16	Synthesis of Zinc Iodide
11/8/16	Molar Mass of a Carbonate Using the Ideal Gas Law
11/15/16	<b>EXAM #3</b>
11/22/16	Paper Chromatography and Steam Distillation
11/29/16	Titration Acid/Check-out
12/6/16	<b>EXAM #4</b>
12/13/16	<b>Comprehensive Final Exam (ACS)</b>