

CHEM 1212

Fall 2020

(MW 2:00 – 3:15 pm)

Instructor

Dr. Spencer Slattery

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Office Hours: M,W (9:30 – 1:00 pm; 3:30 – 5:00 pm)

Lecture: Monday, Wednesday (2:00– 3:15 pm)

Location: TLC Bldg (Room 1301)

Purpose

This is the second course in a two-semester sequence covering the fundamental principles and applications of chemistry for science majors. The course satisfies Core Requirement in Area D. Topics to be covered include properties/behavior of matter, chemical kinetics and reaction mechanisms, chemical equilibria, thermochemistry and the Laws of Thermodynamics, and electrochemistry. This course promotes active student learning as well as logical thinking and analytical reasoning in problem solving. Chemistry encompasses a wide array of phenomena such as photosynthesis, combustion of fuels, and biochemical processes. Understanding concepts of structure, energetics, kinetics and equilibria that govern the behavior of matter are a central theme in Chemistry 1211 and 1212.

Required Materials

- *Chemistry: Structure & Properties*, by Nivaldo Tro, 2nd edition
- Access to **CourseDen** is required to access class notes
- A non-programmable calculator is **required** for the final exam.
- Mastering in Chemistry on-line Homework Problems

Learning Outcomes

Each student will acquire a basic understanding of the following topics: the phases of matter, transitions between phases, properties of solutions (colligative properties), chemical kinetics, reaction mechanisms, chemical equilibria, thermodynamics, and electrochemical (redox) processes.

The course has **two** components **1) “lecture”, and 2) workshop**. As a result, I expect that you will spend more time outside of class working on course material than in “standard” courses. This will be necessary to perform well in the class. Again, group study is a method we want to promote strongly in helping you

Principles of Chemistry II



Workshop questions?

See your WS leader *first*, then Dusty Otwell

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succeed in this course. Peer to peer teaching and learning is a very effective way to study the material. We hope that this course will ultimately result in an enjoyable learning experience.

Prerequisites and expectation

Good algebra skills and a working knowledge of high school chemistry are assumed. Precalculus (MATH1113) and Principles of Chemistry I (CHEM1211) are required prerequisites with a minimum grade of C.

Course Policies and Guidelines

- The official communication method between the instructor and students will be through *the westga.edu email*.
- Course materials including the syllabus, class-notes, and sample exam questions are available through CourseDen.
- The class meets on Monday and Wednesday 2:00 – 3:15 pm.
 - ***Please come to class on time, return promptly, and do not leave early.***
- You are expected to behave professionally in this course, which means considering the effect that your behavior will have on other people involved in the course.
- Turn off cellular phones, and do not use them in class.
- Distracting use of personal laptops is not permitted in the classroom.
- Eating or drinking in the classroom/laboratory will **not** be allowed.
- **No** make-up quizzes or exams will be given. In case of an illness or a dire emergency, the instructor must be contacted prior to the examination in-person, via phone or email. Accommodations for missed exams, quizzes and assignments will be handled between the student and the instructor and depending on the severity of the situation.
- Strategies to **succeed** in this class
 - Come to class, quit unnecessary socializing (text messaging, talking) during class.
 - Read the textbook, take good notes, participate in productive collaboration with peers, review notes, practice problems and actively participate in workshop.
 - Visit me during my posted office hours or find a FREE tutor or supplemental instructor at the Excel Center.

E-mail Policy

Please use your “myUWG” or “CourseDen” e-mail account for all written communication. E-mails from other service providers (aol, gmail, hotmail, yahoo) will be ignored.

Homework

My initial advice for excelling in this course is: *take your homework seriously*. The best way to get good at something (e.g. problem solving) is by ***practice***. Homework assignments will be given online and counted towards your homework grade.

Please go to the site:

<https://www.pearsonmylabandmastering.com/northamerica/>

Course Name: CHEM 1212 (2:00 – 3:15 pm)

Your course ID is: slattery84731

In addition, problems from your textbook will be assigned, but not graded.

Examinations

There will be four examinations and a comprehensive final examination during the semester. Each examination will be closed book and without notes. You will need to bring a calculator to the tests. If necessary, I will provide the scantron sheets, periodic charts and conversion tables during the tests. In order to get full credit on tests, quizzes and other assignments, you must **SHOW ALL WORK AND CALCULATIONS**. Points will be deducted if you have correct responses with incomplete calculations, units, and/or explanations.

The standardized examination from the American Chemical Society will serve as the final examination. It consists of multiple-choice questions, and is prepared by the American Chemical Society. **Use of graphing calculators will NOT be allowed for the ACS exam.** Currently, regular scientific calculators **are** acceptable. **DO NOT MARK IN THE EXAM BOOK!** If there is a conflict with the final exam time, you must provide me with written authorization from the Dean of Arts & Sciences to move your final exam time.

The dates for the in class exams are:

| | |
|----------------|----------------------------|
| Exam 1: | Jan. 29 (Wednesday) |
| Exam 2: | Feb. 24 (Monday) |
| Exam 3: | Apr. 1 (Wednesday) |
| Exam 4: | Apr. 27 (Monday) |

COMPREHENSIVE 1211 AND 1212 FINAL: MONDAY, MAY 4TH @ 2:00 – 4:00 P.M

Workshop Chemistry

In addition to regularly scheduled lecture (and laboratory sessions), you will be *REQUIRED* to attend a 1.5 hour long workshop to discuss chemistry problems and improve your understanding of the material. Your workshop will be led by an upper-level student leader who will facilitate activities that provide practice and build confidence in your ability to solve chemistry problems. Workbooks for the workshop will be distributed in class and must be brought to workshops every week.

Workshop Grades

You are not judged on actual right answers, but the effort you put into the workshop. The workshop portion of your grade will be based on: **1) Attendance.** Do not arrive late; do not leave early. **2) Participation** in group efforts to solve problems. **3) Preparation.** Practice problems assigned from the textbook by your instructor should have been solved, or at least attempted, before the relevant workshop. Workshop leaders will randomly choose problems from the list to assign points for this part of the workshop.

Academic Honesty Policy

We take academic honesty very seriously. Plagiarism of any sort will not be tolerated. Plagiarism is the use of someone else's ideas or words as your own. This definition includes copying another student's exam or assignment, as well as using material from a book or Internet site without acknowledging the source. For example, copying results from an online example paper is wrong. If you plagiarize any part of an assignment for this course, you will receive a zero for the entire assignment, and disciplinary action will be taken. If an individual is caught cheating a second time during the semester, he/she will receive a grade of F for the entire course.

Semester Grades

All exam, quiz and lab activity grades will be based on your ability to **DEMONSTRATE** full understanding of the material. Full credit will only be given if you **SHOW ALL OF YOUR WORK**, not just for obtaining the correct answer. I will configure D2L to show your current grade standing based on material completed.

Your grade will be calculated based on the following components:

$$\text{Course \%} = 0.64 \times (\text{Regular Exam Avg}) + 0.16 \times (\text{Final Exam Score}) + 0.15 \times (\text{Workshop Avg}) + 0.05 \times (\text{On-Line Homework})$$

| | |
|--------------------|-------|
| In-class exams (4) | = 64% |
| Final Exam | = 16% |
| Workshop | = 15% |
| On-line Homework | = 5% |



Final letter grades will be assigned based on the following performance brackets:

[90.0% and up = A] [80.0 – 89.9% = B] [70.0 – 79.9% = C] [60.0 – 69.9% = D] < 60% = F]

University Policies

Please refer to the following for academic support, the honor code, email policy, credit hour policy and HB 280 (Campus Carry Policy):

<https://www.westga.edu/administration/vpaa/common-language-course-syllabi.php>

How to Study Chemistry

You should start by familiarizing yourself with the textbook. Read the author's preface to see what is included in the text and what other resources are available for help. Look at the appendices to see what information is contained there for later use.

You should prepare for lecture by skimming ahead in your textbook. You may not understand all of the material, but it will familiarize you with new terms and equations and by doing this lecture will become much more beneficial.

As soon as possible after lecture you should review your lecture notes and the textbook. Then begin working the in-chapter problems. Only continue when you completely understand the problems. Chemistry builds on itself and if you do not understand a topic now it will only make later topics more difficult. In addition, this chemistry course sets the foundation for later chemistry courses, if you do not learn the material now it will make later courses much more difficult.

When you have completed the chapter proceed to work the end of chapter problems immediately. These problems are an excellent barometer to determine whether you understand the material. Treat the on-line homework problems as if they are test questions and do not look elsewhere for help. If you can work the problems without looking anywhere else for help then you know and understand the material. If you cannot do the problem without help then you need to stop doing homework and reread the pertinent area of the textbook and lecture notes until you are ready to try the problem again. **DO NOT** look in the solutions manual until you have finished the problem. You will learn more by sticking with a problem to finally solve it then by looking in the solutions manual. Chemistry is best learned by doing, so work as many problems as you can.

You must keep up. This course will move quickly and if you are not studying daily then you will find it to be quite difficult. While it will be necessary to memorize some information like equations and formulas, memorization without understanding is useless. You must learn how and when to use equations to be successful. Also, because of the volume of information you will see you will not find success by

“cramming.” If you do not start studying until the week of the test, then you will not be successful. You may also find study groups to be helpful. When you teach and explain topics to your fellow students you will find that you learn those topics even better. Finally, do not hesitate to use office hours. These hours are set aside for you, so take full advantage.

Tentative Schedule for CHEM 1212

Spring 2020

Tro 2nd Edition Book

**Note: Last Day to Withdraw with a grade of W is February 28, (Friday).*

| Date | Monday | Wednesday |
|---------------------|---|-------------------------|
| Jan. 6 - 8 | Ch 11 | Ch 11 |
| Jan. 13 - 15 | Ch 11 | Ch 13 |
| Jan. 20 – 22 | <i>MLK Holiday</i> | Ch. 13 |
| Jan. 27 - 29 | Ch. 13 | Test 1 (Jan. 29) |
| Feb. 3 – 5 | Ch. 14 | Ch 14 |
| Feb. 10 – 12 | Ch 14 | Ch. 15 |
| Feb. 17 – 19 | Ch 15 | Ch. 15 |
| *Feb. 24 – 26 | Test 2 (Feb. 24) | Ch. 15 - 16 |
| Mar. 2 – 4 | Ch 16 | Ch 16 |
| Mar. 9 - 11 | Ch 16 | Ch 17 |
| Mar. 16 – 18 | <i>Spring Break (March 16–20)</i> | |
| Mar. 23 – 25 | Ch 17 | Ch 17 |
| Mar. 30 - Apr. 1 | Ch 17 | Test 3 (Apr. 1) |
| Apr. 6 – 8 | Ch 18 | Ch 18 |
| Apr. 13 – 15 | Ch 18 | Ch 19 |
| Apr. 20 – 22 | Ch 19 | Ch 19 |
| Apr. 27 - 29 | Test 4 (Apr. 27) | No Class |
| May 4 - 6 | Final Exam; May 4 2:00 – 4:00 pm | |