

**CHEMISTRY 1411 (4:3:3)**

**GENERAL CHEMISTRY I**

**INSTRUCTIONAL AREA: CHEMISTRY**

**DEPARTMENT: SCIENCE**

**DIVISION: ARTS AND SCIENCES**

**SOUTH PLAINS COLLEGE**

**FALL SEMESTER 2017**

**PROFESSOR WERENKO**

## **LECTURE OUTLINE**

### ***Block 1 (Lecture Exam 1)***

Chapter 2: Atoms, Elements, and Compounds

Chapter 3: Stoichiometry

### ***Block 2 (Lecture Exam 2)***

Chapter 4: Solution Chemistry

Chapter 5: Gases

### ***Block 3 (Lecture Exam 3)***

Chapter 6: Thermochemistry

Chapter 7: Atomic Structure

### ***Block 4 (Final Exam)***

Chapter 8: Atomic Structure and the Periodic Table

Chapter 9: Chemical Bonding I – Ionic and Covalent

Chapter 10: Chemical Bonding II – Molecular Geometry

## **LAB OUTLINE**

### ***Block 1 (Lab Exam 1)***

Exp 2: Measurements (based on material found in Chapter 1)

Exp 3: Density (Chapter 1)

WS 1: Determining Chemical Formulas and Names (Chapter 2)

Exp 6: Hydrates (Chapter 3)

WS 2: Precipitation Reactions (Chapter 4)

### ***Block 2 (Lab Exam 2)***

Exp 8: Determination of Molar Mass by Titration (Chapter 4)

Exp 9: Boyle's Law (Chapter 5)

Exp 10: Calorimetry of Metals (Chapter 6)

Exp 12: Atomic Emission Spectroscopy (Chapter 7)

**AS A STUDENT IN THIS CLASS, YOU ARE RESPONSIBLE FOR READING AND COMPLYING WITH THIS COURSE SYLLABUS.**

**COURSE DESCRIPTION (FROM THE SPC CATALOG).** “(4:3:3) Fundamental principles of chemistry for majors in the sciences, health sciences, and engineering; topics include measurements, fundamental properties of matter, states of matter, chemical reactions, chemical stoichiometry, periodicity of elemental properties, atomic structure, chemical bonding, molecular structure, solutions, properties of gases, and an introduction to thermodynamics and descriptive chemistry. Basic laboratory experiments supporting theoretical principles presented in lecture; introduction of the scientific method, experimental design, data collection and analysis, and preparation of laboratory reports. Semester Hours: 4, Lecture Hours: 3, Lab Hours: 3. Pre-requisite: MATH 1314 (College Algebra) or equivalent academic preparation. High school chemistry is strongly recommended.”

**INSTRUCTOR.** Professor Werenko  
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E-mail: [twerenko@southplainscollege.edu](mailto:twerenko@southplainscollege.edu) **(The best way to contact me and get a reply.)**

**OFFICE HOURS.** Office hours will be posted on my door at the beginning of the semester.

**CLASS CONTENT.** All information for this class will come from lectures (overhead transparencies, whiteboard, demos), textbook reading and homework problems, and lab experiments. Exams will be given. Blackboard is not used.

Lectures will follow the etiquette of scientific conferences. If you have a discussion-type question, save it for after class. Questions that may be of interest to you may not be of interest to the rest of the class. Lectures won't get sidetracked for reasons of personal interest. We have a lot of material to cover every day, which you are responsible for.

**OBJECTIVES.** This class is intended to develop the following skills:

1. **Teamwork:** Working with your lab group on experiments.
2. **Critical Thinking:** Homework problems, lab-work with accompanying data analysis, exams.
3. **Communication:** Reporting and checking results of experiments. Discussing with your lab group how to best carry out an experiment.
4. **Empirical & Quantitative Skills:** Homework, lab-work with accompanying data analysis, exams.

**REQUIRED COURSE MATERIALS.** The following materials may be purchased at the SPC bookstore. They will be used every day.

- *Principles of Chemistry*, 3rd Edition, by Tro

- CHEM 1411 Lab Manual
- **Laboratory** safety glasses or goggles
- **Scientific** calculator (smart-phone calculators *may not* be used on exams)

**PROPER LABORATORY DRESS.** You must wear safety glasses or goggles for Experiments 6, 8, and 10. See the attached Class Schedule for these dates.

You may not bring snacks or drinks into the lab. They must be left on the instructor desk or put in your book bag.

Book bags should be placed next to your lab station, away from foot traffic, not on the lab bench. The lab bench is where experiments are done.

**LECTURE EXAMS.** There will be three (3) Lecture Exams, each worth 100 points.

The exams are “open lecture notes and homework.” Questions will be based on what is covered in class, and the homework. The dates of Lecture Exams are given in the attached Class Schedule.

**LAB EXAMS.** There will be two (2) Lab Exams, each worth 50 points.

The exams are “open lecture notes, lab notes, homework, and lab manual.” Questions will be based on what is covered in lab. The dates of Lab Exams are in the Class Schedule.

You may only do the experiments on the days they are scheduled. The dates of experiments are also in the Class Schedule.

**FINAL EXAM.** The Final Exam is non-comprehensive and worth 100 points.

The Final Exam is “open lecture notes and homework.” You will take the Final Exam on the day it is scheduled. **If you do not take the Final Exam, you will receive a zero for your score, which will be factored into your class average.**

**IMPORTANT: The Final Exam is scheduled during the Final Exam time slot for your LAB PERIOD, for the reasons stated in the attached Class Schedule.**

**EXAM REFERENCES.** You **may not** use your textbook on any exam. If you are found using “unauthorized” materials (anything other than what you are permitted, above), you will receive an irreplaceable zero on that exam. If you store your lecture notes, lab notes, lab manual, or homework on computer, you must print out paper copies, to be able to use them on exams. If you do not, you will test without them. Computers, smart phones, or other electronic devices **may not** be out or in use during exams, even if they were used for taking notes during class or photographing my slides. You may use a standard *scientific calculator* (example: Texas Instruments) on exams, not a smart-phone calculator.

**RETURNING OF EXAMS.** Your graded exams will be returned to you, and you will have time to compare them against the keys that I will post. *Your exams must be returned to me at the end of the lecture period, so be sure to keep a record of your scores.* Exams (including answer sheets) not returned will be entered into the grade book as an irreplaceable zero. Exams will only be brought to class ONCE. If you were not present on the day an exam was returned, you must come to my office to see how you did.

**Note: Exams, answer sheets, and answer keys may not be photographed at any time. If you do so, you will receive an irreplaceable zero for that exam.**

**EXAM MAKEUPS. Lecture Exams:** If one (1) Lecture Exam is missed, your Final Exam will count twice. (See the Score Replacement Policy in this syllabus.) This also applies to students who are away on SPC-sponsored activities. Any other missed exams will be scored as a zero.

**Lab Exams:** A missed Lab Exam will be scored as a zero. Since Lab Exams are not included in the Score Replacement Policy, I reserve the right to grant a makeup *if* the miss was due to situations beyond your control (in my estimation). You must notify me as soon as possible (email, voice mail, etc.). Don't just "show up" to class and expect to take a makeup. **You will take the exam makeup during the lab period of our next class day.** (*Example:* If you could not take the exam on the Thursday that it was scheduled, you must make it up on the *following Tuesday.*) After that, it will be too late to make up the exam, and it will be scored as a zero.

**Once a graded Lab Exam has been returned to the class it cannot be made up and will be scored as a zero. The makeup "window" has closed. This includes if you are sitting in class when the exams are returned and you have not made prior arrangements with me for a makeup. It is therefore up to you to keep me informed.**

**Final Exam:** If the Final Exam is missed due to situations beyond your control (in my estimation), I will do my best to fit you in *during Final Exam week.* You must notify me of the reason for your absence as soon as possible (email, voice mail, etc.). A Final Exam not **completed** by 3 p.m. of the Thursday of Final Exam week will be scored as a zero.

In extreme cases that would *prevent* you from coming in to take the Final Exam during Final Exam week (*example:* cases requiring hospitalization), you will be excused from taking the Final Exam and *your grade will be based on the grades you do have.* However, the Score Replacement Policy would not apply to you, and something like a doctor's proof of absence would be required. If I am not given such proof before grades are submitted, and you have not taken the Final Exam according to the guidelines given above, you will receive a zero for your score. **Grades of Incomplete will not be given.**

The Final Exam will not be given early to accommodate family vacations, flight schedules, or things of that nature. So plan accordingly!

**USE OF TECHNOLOGY.** Computers, smart phones, or other electronic devices may not be out or in use during exams. You are permitted to use a *scientific calculator* on exams (*example:* Texas Instruments). Smart-phone calculators may not be used.

**RECORDING OF LESSONS.** Lessons may not be recorded or videotaped, unless you have written permission to do so from Special Services. Unauthorized recording or videotaping will be reported to the Dean of Students.

**SCORE REPLACEMENT POLICY.** If your score on the Final Exam is higher than the score of your lowest Lecture Exam, the Final Exam will replace your lowest score. This score replacement applies to *one exam only*, even if the same low score is received more than once. Lab Exams will not be replaced. A zero obtained for using unauthorized exam materials, not returning an exam, or photographing an exam will also not be replaced. Since the Final Exam is non-comprehensive and over new material, no one “tests out of it.” The Final Exam counts toward everyone’s course grade. *Example:*

Lecture Exam 1	80%
Lecture Exam 2	60% → <b>85%</b> (score replaced)
Lecture Exam 3	75%
Final Exam	<b>85%</b>

If, due to unforeseen reasons, we are unable to have the full allotment of Lecture and Final Exams, the Score Replacement Policy will be voided and each exam will stand on its own.

**CURVING OF SCORES AND EXTRA CREDIT.** There are no curves on exams, or extra-credit exercises. You may not realize that a “true curve” curves up if the average is low, but it also curves *down* if the average is high. With “grading on a curve,” the “average,” whatever it is, is usually set at a *C*. So, if you don’t do so well on an exam, look for ways to make up for it (*example:* study better for the next exam, use the Score Replacement Policy to replace your lowest score, etc.).

**HOMEWORK.** Homework is meant to prepare you for the Lecture Exams. It will not be collected or graded (after all, the answers are at the back of the textbook); however, if you do not or cannot do the homework, chances are you will not do well on the exams. You will receive a homework handout for each chapter that lists reading and problems from the textbook. I hand select the homework problems based on the material that is covered in class. You should therefore be able to work out solutions to the problems based on the methods taught in class. Answers to the homework problems can be found in Appendix III of your textbook. No other solutions will be posted. **You should also rework all example problems that are presented in lecture, for additional practice.**

**MISSING CLASS.** Missing this class has consequences, whether the miss is due to your job, an SPC activity or field trip, etc. If you miss a day of class, it is your responsibility to get the material we covered that day, from the textbook and the assigned problems. My personal lecture notes and slides will not be on loan, and I will not reteach that material during office hours.

Should I have to miss class (due to illness, jury duty, etc.), I will either put a homework assignment together which allows you to cover that material, or we will simply pick up where we left off the next time we meet. This also includes classes officially cancelled due to inclement weather. This could result in exam dates having to be rescheduled.

**EXPERIMENTS.** Answers to the experiments will be posted in the hallway display case outside the classroom (S-101). Your lab results are not turned in; however, *you should check the posted answers and study your experiments and lab notes when it comes time to prepare for the Lab Exams.*

**ATTENDANCE POLICY.** **There are no excused absences in this class. Every absence counts. A total of 6 absences qualifies you for an Excessive Absence Drop (with a grade of X or F, at my discretion).** Students participating in *official SPC activities* will not be charged with absences for those days. However, you should notify me in advance and will be responsible for making up the material that you missed. There are no other excused absences. **The results of roll call as recorded on my class roster will be the official record of attendance.** If you are not present for roll call, you will be counted absent *for the day*. If you think you may have missed roll call, you should check in with me *that day*. Cutting class and/or lab will count against you. If you are unable to finish this class, complete a withdrawal slip (*W*) at the Registrar's Office. Don't wait to drop, however, because once I drop you for excessive absences, it's either an *X* or an *F*.

*Reason:* South Plains College requires that each instructor have an attendance policy. SPC in good faith gives you a grade and credit hours for taking this class in-class and in-lab. I will enforce the integrity of this policy. This is not an online class or a self-paced class. You should not even come close to your allowed absences. If you come to me worrying about "How many absences do I have?" you are not approaching this class in the right way.

**POINT DISTRIBUTION.**

3 Lecture Exams @ 100 points each	300 points
2 Lab Exams @ 50 points each	100 points
1 Final Exam	100 points
<b>TOTAL</b>	<b>500 points</b>

**GRADES.** Grade lines are not negotiable, and will be drawn as follows. When posted, grades are final and will not be changed unless there has been an arithmetic error on my part. Percentages are computed to the tenths place.

<b><u>Grade</u></b>	<b><u>Percent (%)</u></b>
A	≥ 90
B	80 – 89
C	70 – 79
D	60 – 69
F	< 60

**COMPUTING YOUR AVERAGE.** You can compute your up-to-the-minute average by dividing the total number of points you have earned by the number points available in the class *up to that point in time*. Example:  $(221/250) \times 100 = 88.4\% = B$ .

If, due to unforeseen reasons, we are unable to have the full allotment of exams, your grade will be calculated based on the scores we *do have* at the end of the semester.

You will receive your official final letter grade posted to your SPC transcript. Further information on the posting of grades will be included with the Final Exam.

**SMART PHONES AND TEXTING. Texting during testing = Cheating = Irreplaceable zero on that exam.** Smart phones **may not** be used as calculators on exams, may not be out or in use during exams (and must be silenced), must be silenced and not used during lectures and labs. I do not want to hear phones vibrating during class. If I can hear it, your classmates can too.

**DISRUPTIVE BEHAVIOR.** I expect behavior that is in keeping with a college classroom. If you are disruptive in class (*examples*: talking with your friend while I am lecturing, making inappropriate comments, etc.), you will receive a warning. If it continues, I will report your disruptive behavior to the Dean of Students. This may also result in an Administrative Drop from the class (with *X* or *F*, depending on your grade at the time).

**WEATHER DELAYS.** If, due to inclement weather, the start of class is officially delayed until our lab period, **we will meet during lab**. Be sure to check the SPC website or local news sources for instructions during times of inclement weather.

**SPC CAMPUS CONCEALED CARRY STATEMENT.** “Texas Senate Bill 11 (Government Code 411.2031, et al.) authorizes the carrying of a concealed handgun in South Plains College buildings only by persons who have been issued and are in possession of a Texas License to Carry a Handgun. Qualified law enforcement officers or those who are otherwise authorized to carry a concealed handgun in the State of Texas are also permitted to do so. Pursuant to Penal Code (PC) 46.035 and South Plains College policy, license holders may not carry a concealed handgun in restricted locations. For a list of these locations, go to

[http://www.southplainscollege.edu/human\\_resources/policy\\_procedure/hhc.php](http://www.southplainscollege.edu/human_resources/policy_procedure/hhc.php).

Pursuant to PC 46.035, the open carrying of handguns is prohibited on all South Plains College campuses. Report violations to the College Police Department at 806-716-2396, or dial 9-1-1.”

**SPC DISABILITY STATEMENT.** “Students with disabilities, including but not limited to physical, psychiatric, or learning disabilities, who wish to request accommodations in this class should notify the Disability Services Office early in the semester so that the appropriate arrangements may be made. In accordance with federal law, a student requesting accommodations must provide acceptable documentation of his/her disability to the Disability Services Office. For more information, call or visit the

Disability Services Office at Levelland (Student Health & Wellness Office) 806-716-2577, Reese Center (Building 8) 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.”

## CHEM 1411 FALL 2017 CLASS SCHEDULE (TR)

**Note:** The following schedule shows each day's agenda. We will adhere to it as closely as possible. I will announce any changes, should they be necessary. If nothing is listed for lab on a particular day, we will use that period as needed (TBA = To Be Announced = finishing a lecture, catching up, etc.).

<u>Date</u>	<u>Lecture</u>	<u>Lab</u>
Aug 29	Intro/Chapter 2	TBA
Aug 31	Chapter 2	TBA
Sep 5	Chapter 2	TBA
Sep 7	Chapter 2	Exp 2
Sep 12	Chapter 3	Exp 3
Sep 14	Chapter 3	Chapter 3/WS 1
Sep 19	Chapter 3	Chapter 3/WS 1
Sep 21	Chapter 3/4	Exp 6 ( <b>Safety glasses required</b> )
Sep 26	Chapter 4	TBA
Sep 28	<b>Lecture Exam 1</b>	
Oct 3	Chapter 4/WS 2	WS 2
Oct 5	Chapter 5	Chapter 5
Oct 10	Chapter 5	<b>Lab Exam 1</b>
Oct 12	Chapter 5	Exp 8 ( <b>Safety glasses required</b> )
Oct 17	Chapter 6	TBA
Oct 19	<b>Lecture Exam 2</b>	
Oct 24	Chapter 6	Exp 9
Oct 26	Chapter 6	TBA
Oct 31	Chapter 6	Exp 10 ( <b>Safety glasses required</b> )
Nov 2	Chapter 7	TBA
Nov 7	Chapter 7	Exp 12
Nov 9	Chapter 7	Chapter 7
Nov 14	Chapter 8	Chapter 8
Nov 16	<b>Lecture Exam 3</b>	
Nov 21	Chapter 8	TBA
Nov 23	<i>Thanksgiving Holiday</i>	<i>No Class</i>

Nov 28	Chapter 9	TBA
Nov 30	Chapter 9	<b>Lab Exam 2</b>
Dec 5	Chapter 10	TBA
Dec 7	Chapter 10	TBA
Dec 12	<b>Final Exam*</b>	
	10:15 a.m. – 12:15 p.m. (Section 007, “the morning class”) **	
	Room S-101	
	1:00 p.m. – 3:00 p.m. (Section 009, “the afternoon class”) **	
	Room S-101	

\* **You will take the Final Exam at the designated time.** Exam times are scheduled by the college. The exam will not be given early. Extenuating circumstances (*example*: military service) will be handled on a case-by-case basis.

\*\* **IMPORTANT!** *You will take the Final Exam during the Final Exam time slot for your LAB PERIOD.* This is an *official meeting time* for our class, and this exam time is a better fit with the exam times we’ve used all semester (that is, rather than having you come in at an “odd” time to take the Final Exam). You should have no other SPC final exam which conflicts with this time slot. *Giving the Final Exam earlier in the week also gives us some options to work with should a situation arise that would cause you to miss the exam.*

## CHEM 1411 SPRING 2017 CLASS SCHEDULE (TR)

**Note:** The following schedule shows each day's agenda. We will adhere to it as closely as possible. I will announce any changes, should they be necessary. If nothing is listed for lab on a particular day, we will use that period as needed (TBA = To Be Announced = finishing a lecture, catching up, etc.).

<u>Date</u>	<u>Lecture</u>	<u>Lab</u>
Jan 17	Intro/Chapter 2	TBA
Jan 19	Chapter 2	TBA
Jan 24	Chapter 2	Exp 1 ( <b>Safety glasses required</b> )
Jan 26	Chapter 2	Exp 2 ( <b>Safety glasses required</b> )
Jan 31	Chapter 3	Chapter 3/Exp 11
Feb 2	Chapter 3	Chapter 3/Exp 11
Feb 7	Chapter 3	Exp 3 ( <b>Safety glasses required</b> )
Feb 9	Chapter 3/4	TBA
Feb 14	Chapter 4	TBA
Feb 16	<b>Lecture Exam 1</b>	
Feb 21	Chapter 4/Exp 5	Exp 5
Feb 23	Chapter 5	Chapter 5
Feb 28	Chapter 5	<b>Lab Exam 1</b>
Mar 2	Chapter 5	Exp 6 ( <b>Safety glasses required</b> )
Mar 7	Chapter 6	TBA
Mar 9	<b>Lecture Exam 2</b>	
Mar 14	<i>Spring Break</i>	
Mar 16	<i>Spring Break</i>	
Mar 21	Chapter 6	Exp 7
Mar 23	Chapter 6	TBA
Mar 28	Chapter 6	Exp 8 ( <b>Safety glasses required</b> )
Mar 30	Chapter 7	TBA
Apr 4	Chapter 7	Exp 10
Apr 6	Chapter 7	Chapter 7
Apr 11	Chapter 8	Chapter 8
Apr 13	<b>Lecture Exam 3</b>	

Apr 18	Chapter 8	TBA
Apr 20	<b>Lab Exam 2</b>	TBA
Apr 25	Chapter 9	TBA
Apr 27	Chapter 9	TBA
May 2	Chapter 10	TBA
May 4	Chapter 10	TBA
May 9	<b>Final Exam*</b>	
	10:15 a.m. – 12:15 p.m. (Section 007, “the morning class”)**	
	Room S-101	
	1:00 – 3:00 p.m. (Section 009, “the afternoon class”)**	
	Room S-101	

\* **You will take the Final Exam at the designated time.** Exam times are scheduled by the college. The exam will not be given early (*i.e.*, before Final Exam week). You must work out any conflict in exam times.

\*\* **IMPORTANT!** *You will take the Final Exam during the time slot reserved for your LAB PERIOD.* This is an *official meeting time* for our class, and this exam time is a better fit with the exam times we’ve had all semester (*i.e.*, rather than having you come in at an “odd” time to take the Final Exam). You should have no other SPC final exam which conflicts with this time slot. *Giving the Final Exam earlier in the week also gives us some options to work with in case a situation arises that would cause you to miss the exam*