

## COURSE INFORMATION SHEET

**INSTITUTION:** South Plains College

**DIVISION:** Arts and Sciences

**DEPARTMENT:** Science

**DISCIPLINE:** Chemistry

**COURSE NUMBER:** CHEM 1412

**COURSE SECTION:** 001

**COURSE TITLE:** General Chemistry II

**SEMESTER:** Spring 2018

**CREDIT:** 4                      **LECTURE:** 3                      **LAB:** 3

### **CORE OBJECTIVES TO BE ADDRESSED:**

**Communication** – to include effective written, oral and visual communication

**Critical Thinking Skills** – to include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information

**Empirical and Quantitative Skills** – to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions

**Teamwork Skills** – to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal

**PREREQUISITES:** A grade of “C” or better in CHEM 1411.

**INSTRUCTOR:** John Heh  
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Telephone: 806.716.2323  
E-mail: [jheh@southplainscollege.edu](mailto:jheh@southplainscollege.edu)

**OFFICE HOURS:** Tuesdays and Thursdays 9 AM to 11 AM and 1 PM to 2 PM  
Fridays 9 AM – 12 PM  
*Other times by appointment.*

**TUTORS:** More information will be given as it becomes available.

**COURSE MATERIALS:** All are available at the SPC bookstore.

1. Nivaldo J. Tro, *Principles of Chemistry: A Molecular Approach, Third Edition.* (required)
2. CHEM 1412 Lab Manual. (required)
3. Safety glasses or safety goggles (required)
4. Scientific calculator [graphing calculators are allowed] (required)  
**Cell phones may not be used as a calculator**
5. 4 Scantron Sheets: Apperson Form 29240

**COURSE DESCRIPTION:** Chemical equilibrium; phase diagrams and spectrometry; acid-base concepts; thermodynamics; kinetics; electrochemistry; nuclear chemistry; an introduction to organic chemistry and descriptive inorganic chemistry. Basic laboratory experiments supporting theoretical principles presented in lecture; introduction of the scientific method, experimental design, chemical instrumentation, data collection and analysis, and preparation of laboratory reports.

**COURSE PURPOSE:** The purpose of the life and physical science component in the core curriculum is to enable the student to understand and apply relationships and theories of the natural sciences. Mastering general chemistry will enable the student to use the fundamentals to analyze, classify, and predict events based on chemical and physical properties.

**LECTURE EXAMS:** There will be three lecture exams covering the material that is discussed during the lecture portion of this course. The schedule for the lecture exams is given in this course information sheet. Each lecture exam will count 100 points. The lecture exams will be approximately 10 to 40 questions. The format will be multiple choice. A scantron is required for the lecture exams. No outside material may be used on the lecture exams. You may only reference what is provided to you on the lecture exams. You will have the 75 minute designated class time to finish the exam. There will be no make-ups for lecture exams. A missed lecture exam will receive a grade of zero.

<b>Exam 1 (Chapters 12, 13):</b>	<b>100 points</b>
<b>Exam 2 (Chapters 14, 15):</b>	<b>100 points</b>
<b>Exam 3 (Chapters 16, 17):</b>	<b>100 points</b>

*The material scheduled for each lecture exam is subject to change. Changes will be announced if necessary.*

**HOMEWORK:** Homework will be assigned often. The homework will not be collected and graded. It is essential that the homework be completed, as the homework will be very similar to the types of problems encountered on the exams.

**LAB EXPERIMENTS:** The laboratory portion of this class will be comprised of topic discussion, homework problems practice; and most commonly, lab experiments. The lab portion of this course will consist of group work. If a student is absent for a lab, the lab cannot be made up.

**LAB SAFETY:** The chemistry laboratory is a potentially hazardous environment. Therefore, all students must follow all of the safety rules passed out to you during the safety presentation. The students must also follow any specific safety rules listed in the lab manual and any ones that the instructor may announce during a lab period. A student not following the safety rules may be asked to leave the laboratory.

**LAB GRADE:** The lab grade will come from lab reports. For most lab days, we will have a lab report that covers the material accomplished that day in lab. The lab reports will be completed in groups and the due date for the lab reports will be announced during lab. Most lab reports will be due the same day the lab is performed. The lab groups will consist of 2 to 4 students. The lab experiments must be completed on the day that they are scheduled. There will be no make-ups for the lab experiments or the lab reports. If a student misses a lab report, a grade of zero will be assigned for that lab report. The lab reports count 10 points each. There will be ONE lab report turned in per group. Make sure your name is placed on the lab report when it is turned in. If your name is not on the lab report, you will receive a grade of zero. There will be fourteen graded lab reports. The format will mostly be multiple choice. The lowest four lab report grades will be dropped. Therefore, 10 lab reports will count for a total of 100 points.

**Lab Reports (10 points each)**

**100 points total**

*The material scheduled for each lab is subject to change. Changes will be announced if necessary.*

**FINAL EXAM:** The final exam will not be comprehensive. There will be no make-up exam for the final exam. A missed final exam will receive a grade of zero. The time of the final exam is given in this course information sheet. The final exam will count 100 points. The final exam will be approximately 25 to 100 questions. The format will be multiple choice. A scantron is required for the final exam. No outside material may be used on the final exam. You may only reference what is provided to you on the final exam. You will have the 120 minute designated final exam time to finish the final exam.

**Final Exam (Chapters 18, 19, Organic):**

**100 points**

*The material scheduled for the final exam is subject to change. Changes will be announced if necessary.*

**FINAL EXAM GRADE:** If the final exam grade is higher than your lowest lecture exam grade, the final exam grade will replace that one lecture exam grade. In that case, the final exam will count twice: once for the final exam grade and once to replace that one lecture exam grade. (e.g. You miss a lecture exam and receive a zero. You later on make an 80 on the final exam. Then the 80 will replace the zero and the 80 will be the final exam grade as well.) This only applies to one lecture exam grade even if multiple lecture exam grades are tied for the lowest lecture exam grade. In all other cases, the final exam counts once and no lecture exam grades are dropped.

**ATTENDANCE:** Students are expected to attend all classes in order to be successful in this course. A student will be administratively withdrawn from this course when absences become excessive. If you reach a total of 7 absences, you will be dropped from the course with a grade of X. It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. This is in accordance with the policies set forth in the SPC General Catalog. Attendance will usually be taken at the end of the lab period. Absences will be attributed to the student from the first class meeting. This course information sheet contains the schedule of lectures and labs. If you are unable to finish this course, complete a withdrawal slip at the registrar's office. Absences caused by official South Plains College activities will be excused. No other absences will be excused.

**CLASSROOM CONDUCT:** Students are expected to maintain a pleasant learning environment for themselves as well as for their classmates. Therefore, if, in the view of the instructor, a student is disrupting the class, the appropriate disciplinary action may be taken.

**ACADEMIC INTEGRITY:** Cheating (as defined in the SPC General Catalog) will not be tolerated. If a student is caught cheating on an exam, a grade of zero will be given for that exam.

**FINAL COURSE GRADE:** At the end of the semester, all of your points earned will be added together. Your final course grade will come from your point total. The point totals and their corresponding final course grades are listed below:

<b>Point total:</b>	<b>Final Course Grade:</b>
445 and above	A
395 – 444	B
345 – 394	C
295 – 344	D
0 – 294	F

**DIVERSITY STATEMENT:** In this class, the teacher will establish and support an environment that values and nurtures individual and group differences and encourages engagement and interaction. Understanding and respecting multiple experiences and perspectives will serve to

challenge and stimulate all of us to learn about others, about the larger world and about ourselves. By promoting diversity and intellectual exchange, we will not only mirror society as it is, but also model society as it should and can be.

**SPC STANDARD 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) & Lubbock Center 806-716-4675, or Plainview Center (Main Office) 806-716-4302 or 806-296-9611.

**NON-DISCRIMINATION STATEMENT:** South Plains College does not discriminate on the basis of race, color, national origin, sex, disability or age in its programs and activities. The following person has been designated to handle inquiries regarding the non-discrimination policies: Vice President for Student Affairs, South Plains College -1401 College Avenue, Box 5, Levelland, TX 79336, 806-894-9611

**Note to students with disabilities:** If you have a disability-related need for reasonable academic adjustments in this course, provide the instructor with a letter of accommodation from the Disability Services Office. If you need immediate accommodations or physical access, please arrange to meet with the Disability Services Office before the next class meeting.

**SAFETY RULES:** These safety rules will be passed out in lab. The safety rules must be followed. Failure to do so can result in you being asked to leave the laboratory. You will be required to sign a sheet indicating you have read and agreed to follow the safety rules before being allowed to perform an experiment.

**COURSE SCHEDULE:** The following table contains the tentative course schedule. *All material (including lecture material, experiment material, and material scheduled for the lecture exams) is subject to change. Also, all dates are subject to change. Changes will be announced if necessary.*

COURSE SCHEDULE				
WEEK	DAY 1 - LECTURE	DAY 1 - LAB	DAY 2 - LECTURE	DAY 2 - LAB
1	NO CLASS	NO LAB	CHAP 12: SOLUTIONS	NO LAB
2	CHAP 12: SOLUTIONS	NO LAB	CHAP 12: SOLUTIONS	SAFETY RULES
3	CHAP 13: CHEMICAL KINETICS	Calculations Involving Solutions	CHAP 13: CHEMICAL KINETICS	Determination of Molar Mass Using BP Elevation
4	CHAP 13: CHEMICAL KINETICS	Kinetics of a Bromine/Formic Acid RXN	CHAP 13 & 14: CHEMICAL KINETICS AND CHEMICAL EQUILIBRIUM	Graphing Using Excel
5	CHAP 14: CHEMICAL EQUILIBRIUM	Determining the Concentration: Beer's Law	EXAM 1 (CHAP 12, 13)	NO LAB
6	CHAP 14 & 15: CHEMICAL EQUILIBRIUM AND ACIDS AND BASES	Intro to Wednesday's EXP	CHAP 15: ACIDS AND BASES	Timed-Release Vitamin C Tablets
7	CHAP 15: ACIDS AND BASES	Acids and Bases	CHAP 15: ACIDS AND BASES	Acids and Bases
8	CHAP 15 & 16: ACIDS AND BASES, AQUEOUS IONIC EQUILIBRIUM	Acid-Base Titration	EXAM 2 (CHAP 14, 15)	NO LAB
9	CHAP 16: AQUEOUS IONIC EQUILIBRIUM	Intro to Wednesday's EXP	CHAP 16: AQUEOUS IONIC EQUILIBRIUM	Half-Titration of a Weak Acid
10	CHAP 16 & 17: AQUEOUS IONIC EQUILIBRIUM, THERMODYNAMICS	Intro to Wednesday's EXP	CHAP 17: FREE ENERGY AND THERMODYNAMICS	Buffers
11	NO CLASS	NO LAB	CHAP 17: FREE ENERGY AND THERMODYNAMICS	The Buffer in Lemonade
12	CHAP 17 & 18: THERMODYNAMICS AND ELECTROCHEMISTRY	Ksp of Sodium Chloride	EXAM 3 (CHAP 16, 17)	NO LAB
13	CHAP 18: ELECTROCHEMISTRY	NO LAB	CHAP 18: ELECTROCHEMISTRY	Heat of Fusion for Ice
14	CHAP 19: NUCLEAR CHEMISTRY	NO LAB	CHAP 19: NUCLEAR CHEMISTRY	NO LAB
15	CHAP 19 & Organic: NUCLEAR CHEMISTRY AND ORGANIC CHEMISTRY	NO LAB	REVIEW	NO LAB
16	FINAL EXAM (CHAP 18, 19, Organic) - Monday May 7, 8:00 AM - 10:00 AM			