

# **COURSE INFORMATION SHEET**

**SOUTH PLAINS COLLEGE, LEVELLAND CAMPUS**

**DEPARTMENT OF SCIENCE**

**DIVISION OF ARTS AND SCIENCES**

**DISCIPLINE: CHEMISTRY**

**CHEM 1412: GENERAL CHEMISTRY 2 (4:3:3)**

**COURSE SECTION: ALL**

**FALL 2017**

**INSTRUCTOR: BANG SHING WANG**

**This course satisfies a core curriculum requirement:** Yes – Life and Physical Science

**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 “C or better” from CHEM1411 (General Chemistry I)

**INSTRUCTOR:** Bang Wang, Ph.D.  
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**OFFICE HOURS:** Office hours will be posted on my office door.

**TUTORS:** Tutors are available, and information can be found on the door of S121.

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

- **TEXT BOOK:** Nivalado J. Tro, Principle of Chemistry: A Molecular Approach, 3<sup>rd</sup> Edition. (Required)
- **LAB MANUAL:** CHEM1412 Lab Manual (required)
- Safety glasses/goggles. (Required)
- Scientific calculator. (Required) **Usage of cell phones are not allowed during exam!**
- Five scantrons. (Required)

**COURSE DESCRIPTION:** CHEM1412: General Chemistry II. (4:3:3) Pre-requisites: A grade of C or better in General Chemistry I (CHEM1411). 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:** To provide basic chemical knowledge for persons living in a world of technology that is always changing. To provide understanding of the basic chemical functioning of the human body. To provide the student with a laboratory experience which will enhance their appreciation of the advances of Science and of the role of the clinical laboratory in the hospital.

**LECTURE EXAMS:** There will be FOUR lecture exams; these exams will cover the materials discussed in the lectures, and the schedules of the lecture exams are in the course time line along with lecture information. Lecture exams will be a multiple-choice format, with roughly 50 questions. A scantron is required for the lecture exam. Only the materials covered in the lectures will be on the exam and you will have designated class time to finish the exam. There will be no make-up for lecture exams. A missed lecture exam will receive a grade of zero.

- Lecture exam 1 (Chapters 12 and 13) 100 points
- Lecture exam 2 (Chapters 14 and 15) 100 points
- Lecture exam 3 (Chapters 16 and 17) 100 points
- Lecture exam 4 (Chapters 18, 19 and 20) 100 points

*The materials scheduled for each lecture exam by subject to change, this change will be announced in advance if necessary.*

**HOMEWORKS:** There will be a homework assigned to each chapter, these homework problems will cover the materials discussed in the lectures. Homeworks will be due on the day of each exam. There will be total of ten homework assignments; each homework is worth 5 points. All of the homework will add up to 45 points (8.3%) of the overall grade. Homework not submitted on time will be consider late and will receive a grade of ZERO.

**LAB EXPERIMENTS:** Lab reports will be due at the end of the lab experiment day. Students will complete the lab report for grading before leaving the lab. Each lab reports will be worth 10 points, which will add up to 100 points (18.3%) of your final grade. The laboratory portion of this class will be comprised of topic discussion, practice worksheets and lab experiments. The lab portion of this course will consist of group work to perform lab experiments. There will be no make-up labs for the missed lab; students will receive ZERO for the lab section if missed.

**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.

**FINAL EXAM:** The final exam will be comprehensive. There will be no make-up exam for the final exam. The final exam will count 100 points. The final exam will be 50 questions. The format will be multiple choices. A scantron is required for the final exam. Only the materials covered in the lecture will be on the exam and you will have designated class time to finish the exam. There will be no make-up for final exams.

**NOTE:** *one of the lowest EXAM grade will be drop at the end of the semester (A grade of zero on final exam will not be dropped).*

**ATTENDANCE:** It is vitally important that you attend all lectures and labs in order to do well in this course. If you reach *SEVEN* absences, I will drop you from the course with a grade of X, F, or U. This is in accordance with the policies set forth in the SPC General Catalog. Attendance will usually be taken during the lecture period, and lab attendance will be determined by the lab report submitted at the end of lab experiment. This class 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.

Students are expected to attend all classes in order to be successful in a course. The student may be administratively withdrawn from the course when absences become excessive as defined in the course syllabus. When an unavoidable reason for class absence arises, such as illness, an official trip authorized by the college or an official activity, the instructor may permit the student to make up work missed (not including the lab). It is the student's responsibility to complete work missed within a reasonable period of time as determined by the instructor. Students are officially enrolled in all courses for which they pay tuition and fees at the time of registration. Should a student, for any reason, delay in reporting to a class after official enrollment, absences will be attributed to the student from the first class meeting. Students who enroll in a course but have "Never Attended" by the official census date, as reported by the faculty member, will be administratively dropped by the Office of Admissions and Records. A student who does not meet the attendance requirements of a class as stated in the course syllabus and does not officially withdraw from that course by the official census date of the semester, may be administratively withdrawn from that course and receive a grade of "X" or "F" as determined by the instructor. Instructors are responsible for clearly stating their administrative drop policy in the course syllabus, and it is the student's responsibility to be aware of that policy. It is the student's responsibility to verify administrative drops for excessive absences through MySPC using his or her student online account. If it is determined that a student is awarded financial aid for a class or classes in which the student never attended or participated, the financial aid award will be adjusted in accordance with the classes in which the student did attend/participate and the student will owe any balance resulting from the adjustment.

**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. Failure to comply with lawful direction of a classroom teacher relative to maintaining good order is considered misconduct on the part of the student. Repeated violations of disrupting a class may result in the student being dropped from the course.

**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 and that grade will NOT be dropped as lowest exam grade at the end of semester.



**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.

*As a faculty member, I am deeply invested in the well-being of each student I teach. I am here to assist you with your work in this course. If you come to me with other non-course-related concerns, I will do my best to help.*

*It is important for you to know that all faculty members are mandated reporters of any incidents of sexual misconduct. That means that I cannot keep information about sexual misconduct confidential if you share that information with me. Dr. Lynne Cleavinger, the Director of Health & Wellness, can advise you confidentially as can any counselor in the Health & Wellness Center. They can also help you access other resources on campus and in the local community. You can reach Dr. Cleavinger at 716-2563 or [lclevinger@southplainscollege.edu](mailto:lclevinger@southplainscollege.edu) or go by the Health and Wellness Center. You can schedule an appointment with a counselor by calling 716-2529*

**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.*

**CHEM1412.002 and CHEM1412.003**

WEEK	Tuesday LECTURE	Tuesday LAB	Thursday LECTURE	Thursday LAB
Aug 28 – Sep 1 Week 1	Introduction	Lab Safety	CH12: Solutions	No Lab
Sep 4 – 8 Week 2	CH12: Solutions	No Lab	CH12: Solutions	Lab WS1: Solution Concentration
Sep 11 – 15 Week 3	CH13: Chemical Kinetics	Exp1: Molar Mass Determination	CH13: Chemical Kinetics	Homework/ Practice
Sep 18 – 22 Week 4	CH13: Chemical Kinetics	Lab WS2: Kinetics	<b>EXAM 1</b>	<b>EXAM 1</b>
Sep 25 – 29 Week 5	CH14: Chemical Equilibrium	Exp2: Beer's law	CH14: Chemical Equilibrium	Homework/ Practice
Oct 2 – 6 Week 6	CH14: Chemical Equilibrium	Exp3: Timed Release	CH15: Acid and Base	Homework/ Practice
Oct 9 – 13 Week 7	CH15: Acid and Base	Lab WS3: Acid and Base	CH15: Acid and Base	Homework/ Practice
Oct 16 – 20 Week 8	<b>EXAM 2</b>	<b>EXAM 2</b>	CH16: Aqueous Ionic Equilibrium	Exp4: Acid and Base Titration
Oct 23 – 27 Week 9	CH16: Aqueous Ionic Equilibrium	Exp5: Determining $K_a$	CH16: Aqueous Ionic Equilibrium	Homework/ Practice
Oct 30 – Nov 3 Week 10	CH16 and CH17	Exp6: Buffer	CH17: Thermodynamics	Homework/ Practice
Nov 6 – 10 Week 11	CH17: Thermodynamics	Homework/ Practice	<b>EXAM 3</b>	<b>EXAM 3</b>
Nov 13 – 17 Week 12	CH18: Electrochemistry	Exp8: $K_{sp}$ Determination	CH18: Electrochemistry	Homework/ Practice
Nov 20 – 24 Week 13	CH18 and CH19	No Lab	Thanksgiving Holiday	Thanksgiving Holiday
Nov 27 – Dec 1 Week 14	CH19: Nuclear Chemistry	Homework/ Practice	CH19 and CH20	Homework/ Practice
Dec 4 – 8 Week 15	CH20: Intro to Organic Chemistry	Homework/ Practice	<b>EXAM 4</b>	<b>EXAM 4</b>
Dec 11 – 14 Week 16	<b>Final Exam</b> 12/14/2017 CHEM1412.002 8:00 – 10:00am	<b>Final Exam</b> 12/14/2017 CHEM1412.003 10:15am – 12:15pm		