LECT: M,W 09:30-10:20 DH-135

Instructor: Dr. Joseph Pesek, DH-501  Office Hours: T,TH 12:00 and by appointment
Phone: 924-4950  Email: joseph.pesek@sjsu.edu

Lab: Dr. Maria Matyska

BS/BA CHEMISTRY PROGRAM LEARNING OUTCOMES ADDRESSED BY Chem 55 – lecture/lab
PLO #3 - Demonstrate understanding of core concepts and to effectively solve problems in analytical chemistry.
PLO #6 - Answer questions regarding safe practices in the laboratory and chemical safety.
PLO #7 - Demonstrate safe laboratory skills (including proper handling of materials and chemical waste) for particular laboratory experiments.

COURSE LEARNING OUTCOMES FOR Chem 55
Upon successful completion of this course, students will be able to:

CLO #1 Perform accurate and precise analysis in the field of analytical chemistry
CLO #2 He or she will be able to keep records of all performed analysis in the manner which is required in modern analytical laboratory.
CLO #3 Student will be able to do statistical analysis and evaluate repeatability of obtained results
CLO #4 Perform quantitative and qualitative analysis of known standards as well as unknown samples.
CLO#5 Identify, properly use, and care for equipment and supplies used in analytical laboratory
CLO #6 Identify the requirements for adequate protection of personnel form solvents and materials used in the analysis.

TEXT:  *Exploring Chemical Analysis*, 5th ed., Daniel C. Harris, *(REQUIRED)*
Supplementary material available at [www.whfreeman.com/qca](http://www.whfreeman.com/qca)

LAB MANUAL: *(REQUIRED)* for laboratory. Available in the lab or via SAACS. Previous versions are not acceptable.

LAB NOTEBOOK: See Lab Manual for description of required Lab Notebook. The notebook must have carbon copy pages.

LECTURE NOTES: Available on Canvas. The notes are not complete but will make it easier for you to follow the lecture material. They are not a substitute for attending lecture.
GRADING: A single letter grade will be assigned for Chemistry 55. A passing grade in Chemistry 55 requires a passing grade in both the lecture and the laboratory portions of the course.

LECTURE GRADE: Three one-hour exams, scheduled at approximately the 4th, 8th, and 12th weeks of the semester. If you miss an exam, **there is no make-up given for any reason.** You will receive the points equivalent to the weighted % score you earned on all other exams and final. There is a comprehensive final exam with a weight equivalent to two one-hour exams plus bonus points.

LABORATORY GRADE: Results of experiments; Laboratory assignments; Lab quizzes; Lab notebook.

CHEMICAL SAFETY: CHEM 120S is required of all Chemistry majors and minors.

DROP POLICY: Note that the SJSU policy requires a grade of **W** for a drop after the 20th day of instructions.

ACADEMIC INTEGRITY: Your own commitment to learning, as evidenced by your enrollment at San Jose State University, and the University’s Academic Integrity Policy requires you to be honest in all your academic course work. Faculty are required to report all infractions to the Office of Judicial Affairs. The policy on academic integrity can be found at [http://sa.sjsu.edu/judicial_affairs/index.html](http://sa.sjsu.edu/judicial_affairs/index.html)

LABORATORY SAFETY: You should read the safety section of the SJSU Catalog under Chemistry Department. Note in particular: "**Failure to comply with proper procedures and prescribed safety cautions shall subject the student to disciplinary action.** 1) Any student who engages in unauthorized experimentation, or who seriously disregards safety, thereby endangering self or others shall be withdrawn immediately from the class with a grade of **F**. 2) Any student who shows persistent disregard for safety may have his/her grade lowered, and may risk being withdrawn with a final grade of **F**." All students must attend the safety lecture (in Lab) and view the safety film. If this is missed, you **must** attend the safety Make-Up Day (TBA). No student will be allowed to continue in the course without satisfying the requirement of viewing the safety film.

EMERGENCIES AND EVACUATIONS: If you hear a continuously sounding alarm, or are told to evacuate by Emergency Coordinators (colored badge identification), walk quickly to the nearest stairway. Take your personal belongings as you may not be allowed to immediately return. Follow instructions of Emergency Coordinators. Be quiet so you can hear. Once outside, move away from the building. Do not return to the building unless the Police or Emergency Coordinators announce that you may.

AMERICANS WITH DISABILITIES ACT: If you need course adaptations or accommodations because of a disability, or if you need special arrangements in case the building must be evacuated, please make an appointment with me as soon as possible, or see me during office hours. Presidential Directive 97-03 requires that students with disabilities register with the DRC to establish a record of their disability.
GRADING BREAKDOWN:

**Lecture:**
3 Hour exams @ 100 pts  
Final exam @ 220 pts  
Total = 520 pts

**Lab:**  
480 Pts total

**Components of grade**

Analytical results  
Exams & quizzes  
Notebook & Technique

**EXAM SCHEDULE**

Exam 1: Feb. 27th  
Exam 2: April 3rd  
Exam 3: May 1st

**CHEMISTRY 55-LECTURE TOPICS***

**Review and Background Information**
*(For your review only, will not be covered in class)*

Statistics  
Gravimetric Methods  
Chemical Equilibrium Concepts  
Activity Concepts  
Monoprotic Acid-Base Equilibria  
Polyprotic Acid-Base Equilibria  
Buffers  
Acid-Base Titrations  
Complex Titrations  
Spectroscopy  
Atomic Spectroscopy  
Analytical Separations  
High Performance Liquid Chromatography  
Gas Chromatography

**Chapter-Sections**

*Chapters 1, 2, 3*  
4-1 to 4-7  
7-1, 7-2, 7-3  
Lecture Notes & 6-4  
Lecture Notes & 12-2  
8-1 to 8-7  
11-1, 11-2, 11-3  
9-1 to 9-6  
10-1, 10-2, 10-3, 10-4, 11-4  
13-1 to 13-6  
18-1, 18-2, 18-3, 18-4, 19-1  
21-1, 21-2, 21-3  
22-2, 22-3  
22-1
Not all material in each chapter is covered. Only those topics discussed in lecture will be on exams.

Chemistry 55 Practice Problems
The problems listed below are designed to give you extra practice on the concepts taught in lecture. Completing the problem assignments will better prepare you for the hour exams and final. They are not be turned in and will not be graded. In chapter numerical order, not in topical order.

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Final Exam: Thursday, May 16 0715-0930