

GENERAL COURSE INFORMATION FOR CHEM 481

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Office Hours: Tu 9:00-11:00, W 14:00-15:00 and by appointment

Course Web Page URL: <https://www.csun.edu/~hcchm003/481/481.html>

Course Description

This class introduces the fundamental principles of nuclear instability and radioactive decay. The properties of ionizing radiation and radiation safety are emphasized. Important applications of nuclear and radiochemistry are discussed. The laboratory provides direct experience with instruments used to measure radiation and various applications of radiochemistry.

Course Text

The text for this course is Radiochemistry and Nuclear Methods of Analysis, by W. D. Ehmann and D. E. Vance, John Wiley & Sons, 1991. A copy of this text will be available for 24-hour check-out Monday-Thursday in the Department office. No student may borrow this text two days in succession. Failure to comply with the 24-hour return deadline will result in loss of borrowing privileges for the semester.

Grading

Your grade in this 4-unit lecture/lab class will be based on your performance on four exams and your work in lab, as noted below.

		<u>Letter Grade</u>	<u>Percent of Total Points</u>
Exam 1	15%	A	≥ 80%
Exam 2	15%	B	≥ 70%
Exam 3	15%	C	≥ 50%
Final	20%	D	≥ 40%
Laboratory	35%	F	< 40%

Plus/minus grades will be assigned when appropriate. (for example, 71% = B-)

Each midterm exam will test your mastery of material discussed in class since the previous exam. The final exam is a comprehensive one. The tentative dates for the four exams, and the material covered by each, are noted on the lecture schedule. Please note that **THERE ARE NO MAKE-UP EXAMS**. If you miss an exam for a legitimate reason, please contact the instructor as soon as possible, otherwise a grade of zero will be assigned.

The best way to prepare for the exams is to develop good problem-solving skills. This can be done by taking an active part in the lecture discussions and by doing all of the homework assignments in the text and those given in class. Although the homework assignments are not graded, the ability to work problems such as these is a minimum prerequisite for doing well on the exams. The solutions to all assigned problems will be posted on the course Web site (see Homework Solutions).

Class Structure

The lecture periods for this course will be used to develop important principles in nuclear and radiochemistry and to apply them to relevant problems. Background information about lecture topics will be posted on the course web page in advance of each class meeting. You are responsible for printing and reviewing this material BEFORE coming to class. Class sessions will generally start with class questions regarding the current topic, followed by examples and questions from the instructor. Your participation in the lecture discussions is an important part of this course.

Laboratory

Lab work is a significant part of this course. In order to provide each student with the appropriate time and the necessary facilities for individual work, the class will be divided into 2 lab groups. Each group will have lab 1 day per week, before lecture. Students will work in lab until the experiment is completed for that day; it will generally take about 3-4 hours for each experiment. The tentative schedule of experiments is noted on the laboratory schedule.

A score from 4-10 will be assigned to each set of experimental results submitted. Normally results are due 1 week after the completion of the experiment. Because of space and equipment limitations, it will be very difficult to schedule work at any time other than during your assigned lab period.

Student Projects

In addition to the lab work, each student is expected to prepare and deliver an oral and written report on a specific topic in nuclear or radiochemistry. First, your topic, and a set of issues to be considered in your reports, must be approved by the instructor. A list of suggested topics (others may be used), along with points that should be addressed for each topic, are found under Lecture Handouts on the course web page. Your written report should be no longer than 4-5 typewritten pages and should include detailed information on all sources of reference. You should submit a copy of your written report to your instructor by April 22, and be prepared to present an approximately 20-minute talk outlining the main points of your report during class on May 6 or 8.

This report will count the equivalent of one lab experiment and will constitute part of your lab score. Your participation in the discussions of the oral reports is an important part of this work.