

COURSE OVERVIEW

CHEM 203Lg is designed for non-science majors, and satisfies the Category IV general education requirement for Science and Its Significance. This Chemistry course will provide students with a solid understanding of HIV/AIDS and the discovery and development of drugs used to treat HIV/AIDS. As such, you will be held accountable for learning basic concepts of chemistry, biochemistry, and molecular and cell biology. The course will be taught in a linear fashion, starting with drug discovery and development. The drug discovery and development component of the course will start with understanding the structure and bonding of drug molecules. We will then move on to introducing some basic biochemistry to understand what enzymes are and the different kinds of ways drugs may interact with them. Given this background, we will finish this part of the course with a discussion of drug development, which covers topics such as how your body processes drugs and how we can statistically analyze the efficacy of drugs. The second half of the course will focus on the effects of HIV, ranging in scale from our bodies to the global pandemic. We will begin by understanding basic molecular and cellular biology, giving us the tools to then explore our immune systems and how we fight disease. After this background we will continue by looking at the history and epidemiology of HIV and AIDS, followed by an investigation of the molecular mechanisms of HIV infection. We will then move on to discuss how from the moment of infection our immune system is in constant losing battle with HIV and how drugs have both entered and exited the fray. Lastly, we will finish the course by looking at the future of AIDS pandemic and ethical questions raised by treatment and prevention.

CHEM 203Lg will give you an understanding of why chemistry and biochemistry are important in the context of drug development and treating disease. You will gain an understanding of how pharmaceutical companies develop drugs and what factors go into whether they make it to market or not. You will gain an understanding of what HIV/AIDS is, how it is treated, and what its socioeconomic effects are. Upon completing this course, you will be able to talk about the chemistry and biochemistry of human disease and science in a well-informed, cogent manner.

Analytical Techniques and Methodologies

Students will be asked to demonstrate comprehension of basic concepts in chemistry, biochemistry, and molecular and cell biology that are pertinent to the overall theme of the course. Students will be expected to take basic concepts presented to them in lecture and apply that knowledge to similar but different situations on exams. They will solve problems requiring the development of skills in such specific areas as statistics, enzyme inhibition kinetics, computer modeling and data analysis, and information gathering.

Laboratory Experience

The laboratory component of CHEM 203Lg is meant to complement the lecture material presented in class. To the best of our ability, the topics covered in lecture are matched as closely as possible in time to the laboratory experience. The laboratory will require students to do online research, analyze data, manipulate molecular models of drugs and enzymes, do statistical treatments, and think about the societal impacts of HIV/AIDS. The laboratory component is done completely online.

Expectations

For many students, this will be their first exposure to chemistry since high school. The course is designed with this in mind; however, being a Chemistry course at a top-tier university, students are expected to work hard and keep up with the material presented in lecture and lab. There are many ways for students to seek help in the course, including faculty and TA office hours, the online forum, and supplementary instruction (SI). We strongly encourage students to take advantage of these opportunities if needed to maintain good standing in the course.

LECTURE

SGM 123 Tuesdays and Thursdays 11:00 am - 12:20 am

INSTRUCTIONAL STAFF

Dr. Matthew Pratt

Office: LJS 250

Phone: (213)740-3014

Email: matthew.pratt@usc.edu

Office Hours: 10 - 11 am, Tues & Thurs in LJS 250

Website

Dr. Bruno Herreros

Office: SGM 426

Phone: (213)740-0452

Email: herreros@usc.edu

Office Hours: By Appointment

Computer Lab

Jaime Avila

Office: SGM 418

Phone: (213)740-7039

Email: avila@usc.edu

Teaching Assistants

Kelly Chuh

Email: kchuh@usc.edu

Tuesdays 2:00-3:50 pm & 4:00-5:50 pm

Jeremy Winkler

Email: jeremywi@usc.edu

Wednesdays 10:00-11:50 am & 12:00-1:50 pm

Subodh Tiwari

Email: sctiwari@usc.edu

Wednesdays 2:00-3:50 pm & 4:00-5:50 pm

Steve Glynn

Email: sglynn@usc.edu

Thursdays 2:00-3:50 pm & 4:00-5:50 pm

Leslie Bateman

Email: labatema@usc.edu

Fridays 10:00-11:50 am & 12:00-1:50 pm

Derek Moy

Email: dmoy@usc.edu

Friday - Online Lab

COURSE MATERIALS**Lecture**

Textbooks:

AIDS Update 2011, G. J. Stine, McGraw Hill

Laboratory

There is no lab text. Materials will be provided via the course web page.

EXAMS

There are three lecture-based hour exams scheduled at 11:00 am on the following days:

Exam	Date	Topics Covered	Location
#1	Sept. 25th	Lectures 2 - 8	SGM 123
#2	Oct. 30th	Lectures 9 - 16	SGM 123
#3	Dec 4th	Lectures 18 - 24	SGM 123

The lowest score from the three exams will be dropped and will not count towards the final grade.

There will also be a Final Exam. The time of the Final Exam is set by the University and cannot be moved.

Final Exam	Dec 18th	Comprehensive	SGM 123
	8:00 - 10:00 am		

see http://www.usc.edu/academics/classes/term_20123/finals.html for USC final exam schedule**Attending Exams**

All three midterm exams begin at 11:00 am and students will be allowed to enter and take the exam until 11:30 am. **After 11:30 am, students will be turned away from the examination.** Likewise students in the exam will not be permitted to leave the exam room until 11:30 am.

The final exam begins at 8:00 am and students will be allowed to enter and take the exam until 9:00 am. **After 9:00 am, students will be turned away from the examination.** Likewise, students in the exam will not be permitted to leave the exam room until 9:00 am.

Make-up Exams

No make-up exams will be given. An unexcused missed hour exam will be considered the one allowed dropped exam. A second unexcused missed hour exam will be counted as a zero. An excused absence from an exam will also be considered the one allowed dropped exam. An excused absence from a second exam will be granted by the instructor only on the basis of proper documentation. For example, a second missed exam because of serious medical reasons will be excused only if a certification is provided by a physician.

LABORATORY

The laboratory is completely internet browser based. Since this is the case, laboratory attendance is not required, but it is highly recommended. During the laboratory period, the TA will help students complete the assignment. However, the TA will not do the assignment for you or directly answer assignment questions. They will help you figure out the assignment on your own. **All labs are in your own words.**

Submission

All lab assignments must be submitted electronically via the website, and labs will not be accepted in any other form. Students are responsible for ensuring that their TA has received their assignments on time and also for verifying their assignment grades online. **Laboratories are due by the end of the day, one week after your lab section at 5:00 pm.** For example, if your lab meets on Tues Aug 30th, the lab is due by 5:00 pm on Tues Sept 6th.

Laboratory Grading

There are ten laboratory assignments (see <http://chemmac1.usc.edu/203/labs/> for schedule) worth 20 points each. Late assignments will have 25% of the total possible points deducted if up to one week late, thereafter it will not be accepted (zero points). Lab assignments are digitally checked for plagiarism (see http://www.usc.edu/student-affairs/student-conduct/ug_plag.htm for guidelines), and lab assignments reproduced from another student will not be accepted (zero points) and either could lead to additional sanctions under University rules and guidelines (see <http://usccollege.adobeconnect.com/academicintegrity> for guidelines). Labs will be graded within one week of submission.

ASSIGNMENTS

One Homework Assignment and one Web Quiz will be assigned and completed via the website

CONTESTING GRADES

Mistakes can be made during the grading process, and students will have the opportunity to contest grades; however, there is an explicit policy for doing so. A grade on an individual Exam, Laboratory, or Assignment may be contested for two weeks after the due date or examination date. All contests should be sent through your TA. This may take the form of an email or visit to office hours. For example, if a laboratory is due on Tues Sept. 13th, the grade must be contested by Tues Sept. 27th. After this two week period, the assigned grade will stand as is. There will be no exceptions to this rule.

GRADING

There will be three midterm exams (100 points each, 2 out of 3 graded), final exam (200 points), laboratories (200 points), a homework assignment (25 points) and a web quiz (40 points).

Lecture 400 points

Lab 200 points

Assignment 25 points

Web Quiz 40 points

Total 665 points

To receive a passing grade, satisfactory work must be done in both the lab and the lecture portions of the course. Points shown above are required work.

Your final grade for this course may be based on a gentle curve of the straight scale. Therefore, you will not be able to calculate your grade based on your point total divided by the total number of points in the course. Grades will only be assigned after all points have been totaled.

DROP DATES

Sept 14th - Last day to drop a class without a mark of "W"

Nov 16th - Last day to drop a class with a mark of "W"

ACADEMIC INTEGRITY

It is expected that all students will follow the rules of academic integrity as set forward by the University (see <http://usccollege.adobeconnect.com/academicintegrity> for guidelines). Plagiarism on laboratory reports or the homework assignment, cheating on examinations, or changing the answers of a returned exam are serious violations of academic integrity and may result in a mandatory grade of F for the course. All laboratories are checked electronically for plagiarism and exams may be photocopied before they are returned.