

CHEM 142Z Syllabus

Term II - Summer 2022



Instructor Information

Instructor

Dr. Carla Coste Sánchez

Email

ccostesanch@weslyan.edu

Office Location & Hours

By appointment
Through Teams 24/7

General Information

Description

CHEM 142 is the second half of an introductory course in general chemistry intended for science majors and for pre-health studies. The second semester is mostly the quantitative application of concepts. Topics will include intermolecular forces, acids and bases, solutions and their properties, equilibria, thermodynamics, electrochemistry, and radioactivity.

Prerequisites

A strong familiarity with algebra is required as well as successful completion of CHEM 141.

Course Materials and Information

Required Materials

- *Chemistry: A Molecular Approach*, 5th edition, by Nivaldo Tro.
- Calculator: You are required to have a non-programmable scientific calculator; you MAY NOT use a smartphone, tablet, etc., in lieu of a standard calculator. The best calculator for this course would be an inexpensive, solar-powered, scientific calculator (TI/Sharp/Casio; < \$25). Whichever calculator you used in CHEM 141 should suffice.

Attendance

Attendance at lectures is *MANDATORY*. If you miss due to illness, contact me as soon as possible, so that I can help you stay up to date. **Missing more than 2 days of unexcused absences is a failure in the course.**

Homework

Written homework will be assigned daily; instructions for written homework will be posted to Moodle. You are encouraged to work on these assignments with a study group, but you are still responsible for all the material. **This course takes a lot of practice**, if you cannot complete the homeworks, you can expect to do poorly on the exams. **Late homework is penalized 20% per day.**

Academic Integrity

You will be held to the highest academic standards in this course, and infractions of academic integrity will be swiftly referred to the Honor Board. If you are uncertain about any issues of academic integrity as they relate to this course, consult the professor.

Grades

Exams

There will be one midterm exam and a final exam - DO NOT miss class on any exam day. Makeup exams will be coordinated only under exceptional circumstances.

Final Grade calculation

Participation	5%
Homework	15%
Midterm Exam	40%
Final Exam	40%
Total	100%

Letter Grade Assignment

Final letter grades will be rounded to one decimal place and assigned per the Registrar's grading scale (see "Lowest" column): [link](#)

Course Schedule

Day	Date	Topic	Reading Assignment
Mon.	6/27/2022	Intermolecular Forces, Vaporization, Heating Curves and Phase Diagrams	12.1 - 12.8
Tues.	6/28/2022	Intro to Solutions	14.1 - 14.4
Wed.	6/29/2022	Solutions Calculations and Colligative Properties	14.5 - 14.7
Thur.	6/30/2022	Kinetics I	15.1 - 15.4
Fri.	7/2/2022	Kinetics II	15.5 - 15.7
Mon.	7/4/2022	Intro to equilibrium and Heterogenous Equilibria	16.1 - 16.6
Tues.	7/5/2022	Eq. Concentrations and Le Chatelier's Principle	16.7 - 16.9
Wed.	7/6/2022	Acid, Bases, and the Autoionization of Water (Strong Acid and Bases, Weak are not included)	17.1 - 17.7
Thur.	7/7/2022	Flex Day* + Review	
Fri.	7/8/2022	MIDTERM EXAM - Chapters 12, 14, 15, 16 and partial 17**	
Mon.	7/11/2022	Acid and Bases (Weak) and Polyprotic Acids	17.6 - 17.11
Tues.	7/12/2022	Buffers	18.1 - 18.3

Day	Date	Topic	Reading Assignment
Wed.	7/13/2022	Titrations and K_{sp}	18.4 - 18.6
Thur.	7/14/2022	Entropy	19.1 - 19.5
Fri.	7/15/2022	Gibbs Free Energy	19.5 - 19.10
Mon.	7/18/2022	Gibbs Free Energy Cont.	19.5 - 19.10
Tues.	7/19/2022	Redox, Voltaic Cells and Electrodes	20.1 - 20.4
Wed.	7/20/2022	Cell Potentials	20.5 - 20.7, 20.8
Thur.	7/21/2022	Radioactivity and Nuclear Chemistry	21.1 - 21.6, 21.12
Fri.	7/22/2022	Flex Day* + Review	
Tues.	7/27/2022	FINAL EXAM - Chapters 17, 18, 19, 20, and 21	

*A flex day is included for any changes necessary. This is a “tentative” lecture schedule because we may get ahead and we may fall behind at times.

**Depends on material covered before the test.