



COURSE SYLLABUS
CHEM 1212 - Principles of Chemistry II
Spring 2020 TTh 11:15 AM - 12:30 PM
Lecture Hall - B11

Individuals with disabilities who need to request accommodations should contact the Disability Services Center, Edgewater Hall 255, (678) 466-5445, disabilityresourcecenter@clayton.edu.

Instructor Information

Instructor: Dr. Drew Brandon

Office: Lakeview Discovery and Science Center, Room 235B **Phone:** 678-466-4780

Email: DrewBrandon@clayton.edu (limited after 5:00 PM)

Office Hours: MW 11:00 AM - 12:00 PM, TTh 1:30 - 3:30 PM, and by appointment

Course Information

CRN: 21335

Credit Hours: 3.0 semester credit hours (3-0-0)

Textbook:

Flowers, P.; Langley, R.; Neth, E.; Theopold, K. (2019) *Chemistry: Atoms First* from OpenStax (2nd ed.) Web-view and PDF version are freely available at [OpenStax.org](https://openstax.org). Print versions can be found at the [Clayton State University Loch Shop](#) or from Amazon. Use links from the OpenStax website to find the OpenStax seller on Amazon, as third-party sellers are usually more expensive for lesser quality prints.

ISBN-13: 978-1-947172-63-0

Text Coverage: 10-15, 17 (possibly 16 & 20)

Materials:

- Knewton by Alta, ISBN: 9781635452440. Course access will be through [D2L](#). Access codes are available through D2L or from the [Clayton State University Loch Shop](#).
- Scantrons for exams.

Prerequisites:

- CHEM 1211 and CHEM 1211 (minimum grade of C)
- MATH 1112 or MATH 1113 or MATH 1501 (minimum grade of C)
- CHEM 1212L (minimum grade of C or concurrent)

Catalog Description:

Second course in a two-semester sequence covering the fundamental principles and applications of chemistry for science majors.

Content:

This course is designed as the second in an introduction to basic principles of chemistry. Topics covered include intermolecular forces, phase transitions, thermodynamics, equilibrium, and kinetics.

Course Outcomes:

After completing this course, the successful student will be able to:

1. Understand the fundamentals of gases, liquids and solids
2. Calculate Gibbs energy of reaction at standard conditions
3. Understand the basics of chemical equilibrium
4. Calculate reaction quotient and equilibrium constants
5. Understand the basics of acid-base chemistry
6. Use integrated rate law in calculations
7. Use integrated rate laws in half-life calculations
8. Determine of reaction order using calculations

Program Learning Outcomes:

General education outcomes:

The Clayton State University Core Curriculum outcomes (see Area D) are located in the Graduation Requirements section of the [Academic Catalog and Student Handbook](#).

Chemistry outcomes:

1. demonstrate knowledge of the basic principles of major fields of chemistry.
4. apply knowledge of physics and mathematics to solve chemical problems.
6. collect, evaluate and interpret scientific data, and employ critical thinking to solve problems in chemistry and supporting fields.
8. identify and describe the impact of chemistry on society.

Assignments: Outcomes will be assessed through the following methods:

Assignment Category	Assessment Type	Weight (%)
Formative assessments	Formative	30
Unit quizzes	Summative	10
Exams (3)	Summative	40
Final exam	Summative	20
Total		100

Formative assessments provide feedback intended to shape (or form) how you are learning necessary content and skills. They are usually low stakes assignments (i.e. not worth a lot of points). Think of them as progress reports for you and your instructor to check that you are understanding the topic. Examples of formative assignments include homework, in-class participation, exam-wrappers, and reflection assignments.

Summative assessments measure your mastery of content and skills at the end of an instructional period. They assesses the sum of what you have learned. Examples include exams and unit quizzes.

Assignment of Grades: Final assignment of letter grades will be made according to grade cutoffs approximately as follows, with adjustments made based on relative difficulty of the class. Midterm grades will be provided on March 2 to the same cutoffs.

- A:** 90% - 100%
- B:** 80% - 89%
- C:** 70% - 79%
- D:** 60% - 69%
- F:** < 60%

Course Policies

University Attendance Policy:

Students are expected to attend and participate in every class meeting. Instructors establish specific policies relating to absences in their courses and communicate these policies to the students through the course syllabi. Individual instructors, based upon the nature of the course, determine what effect excused and unexcused absences have in determining grades and upon students' ability to remain enrolled in their courses. The University reserves the right to determine that excessive absences, whether justified or not, are sufficient cause for institutional withdrawals or failing grades.

Course Attendance Policy:

Attendance is mandatory. Research shows that regular attendance correlates with higher grades in the class. In addition to the intrinsic benefits of being in class, learning activities will be used in class as formative assessments. These will count towards your formative assessment grade. These must be completed in-class, and make-ups will not be offered.

RollCall will be used to track attendance. It is your responsibility to sign in for every class you attend. The roll sheet is the instructor's official record. You are expected to remain in the class for the entire period or until you are excused.

Late Work:

Late formative assignments will be subject to a 10% penalty per 24-hour period that it is late unless one or more of the following conditions are met:

1. I move a deadline based on the pace of the class.
2. You notify me of a medical issue prior to the deadline, accompanied with the appropriate medical documentation.
3. You notify me of an approved activity, especially university activities, and an extension is allowed.

No late assignments will be accepted after I have returned graded work.

Knewton homework assignments will be given a grade for the percentage of the assignment completed by the due date. You are encouraged to continue working on the homework assignment after it is due, but the grade will not be updated unless you reach 100%, in which case the grade will be saved as full credit. This will be allowed until the end of the last day of class. It is to your benefit **not** to wait to complete the homework, however, as it will help you on exams if you keep up with the pace of the content. That being said, with diligence, it is reasonable to expect 100% of the grade on the homework portion of the class.

Missed Exams:

An exam that is missed because of an approved activity or medical absence can be made up ahead of time during a separate testing period. **No make-up exams will be given after the exam has been administered.** If an exam is missed and valid documentation is provided after the fact, further accommodation is possible. The final examination must be taken. Students missing the final examination should contact their instructor concerning the applicability of an Incomplete grade.

Exam Policies:

- Exams start at the beginning of class. Students who arrive late will not be given extra time on exams. Students who arrive early will not be given extra time on exams. Just exactly on time, okay?
- Cell phones must be silenced and placed on the table face down in front of you at all times. My exams are like driving, if you use your cell phone while you do it, you will crash and burn.
- Wearable smart devices, such as Apple Watches, are not permitted while taking an exam.
- Scantrons will not be provided. It is advised that you bring extra scantrons and sell them to your more forgetful classmates for profit.

Mid-term Progress Report:

The mid-term grade in this course, which will be issued by March 2, reflects approximately 30% of the entire course grade. Based on this grade, students may choose to withdraw from the course and receive a grade of "W." Students pursuing this option must fill out an official withdrawal form, available in the Office of the Registrar, by mid-term, which occurs on March 6. [Instructions for withdrawing are provided at this link.](#)

The last day to withdraw without academic accountability is March 6, 2020.

Computer Requirement:

Each CSU student is required to have "on demand access" throughout the semester to "an appropriate computing device" that meets faculty-approved hardware and software requirements for the student's academic program. Students will be required to sign a statement attesting to such access. For further information on CSU's Computer Devices Policy, see the [Academic Catalog and Student Handbook](#).

Software Requirement:

To properly access the course content you will need to download Adobe Reader (needed to access files in PDF format): <http://get.adobe.com/reader/>

Computer Skill Prerequisites:

- Able to use the WindowsTM operating system
- Able to use Microsoft WordTM word processing
- Able to send and receive e-mail using OutlookTM

Only use your CSU e-mail account or the e-mail system included in D2L to communicate academic information to your instructor.

- Able to attach and retrieve attached files via email
- Able to use a Web browser.

Desire2Learn (Online Classroom):

On-line activity will take place in Desire2Learn Brightspace, the virtual classroom for the course. Posting of your work in D2L is a course requirement.

You can gain access to Desire2Learn by signing on to the SWAN portal. If you experience any difficulties in Desire2Learn, please email or call The HUB at TheHub@clayton.edu or (678) 466-HELP. You will need to provide the date and time of the problem, your SWAN username, the name of the course that you are attempting to access, and your instructor's name.

In-class Use of Student Notebook Computers:

Student notebook computers will not be used in the classroom in this course. Computers will be required to access course materials, to communicate with your instructor, and possibly to complete homework.

In-class Use of Cell Phones:

Students will not use cell phones in the classroom unless specifically instructed. They are disruptive to the learning process and to the classroom atmosphere. When you sit down for class, pull your cell phone out, silence it, and place it face-down on the desk in front of you. Learn how to use the Do Not Disturb feature if you are concerned about missing important calls. I can help with this request if you need it. If we all cooperate, we can make sure that learning is the only activity that is occurring in the classroom, and we can all give our undivided attention to it.

Failures to cooperate might result in point deductions from your grade. Repeated disregard for the classroom environment will result in your removal from it for the remainder of the class period.

Email policy:

If you have an in-depth chemistry/calculation question, it is best to meet with me in-person. These types of questions are difficult to interpret and answer via email. Emails that are sent after 5 PM may not be answered until the following day. Emails are professional correspondence.

- When emailing, **use the class code in the subject line**. Example: “CHEM 1212: Help with assignment”
- Most of your professors at the college level should be addressed as “Professor” or “Dr.” not by their first name or Mr. or Ms., unless they request to be addressed in that way.
- Emails sent to university email addresses are a permanent document of communication. Therefore, be sure that your emails are polite, professional and well-prepared before you send them. You should not feel comfortable saying anything in email that you would not verbally say to the recipient, in-person.
- Use complete words and sentences. Remember that email is a professional correspondence and as such you should avoid using slang or communicating as if it were an Instant Message, text message, Snapchat, or TikTok.
- Read this syllabus. Most of your questions can be answered by reading the course syllabus.

Academic Dishonesty:

Any type of activity that is considered dishonest by reasonable standards may constitute academic misconduct. The most common forms of academic misconduct are cheating and plagiarism. All instances of academic dishonesty will result in a grade of zero for the work involved. All instances of academic dishonesty will be reported to the [Office of Community Standards](#). Judicial procedures are described in the section of the Academic Catalog and Student Handbook titled, [Adjudicating Alleged Academic Conduct Infractions](#).

Plagiarism Detection Software:

Students agree that by taking this course all required papers may be subject to submission for textual similarity review to Turnitin.com for the detection of plagiarism. All submitted papers will be included as source documents in the Turnitin.com reference database solely for the purpose of detecting plagiarism of such papers. You should submit your papers in such a way that no identifying information about you is included.

Disruption of the Learning Environment:

Behavior which disrupts the teaching–learning process during class activities will not be tolerated. While a variety of behaviors can be disruptive in a classroom setting, more serious examples include belligerent, abusive, profane, and/or threatening behavior. A student who fails to respond to reasonable faculty direction regarding classroom behavior and/or behavior while participating in classroom activities may be dismissed from class. A student who is dismissed is entitled to due process and will be afforded such rights as soon as possible following dismissal. If found in violation, a student may be administratively withdrawn and may receive a grade of WF.

More detailed descriptions of examples of disruptive behavior are provided in the [Academic Conduct Regulations of the Academic Catalog and Student Handbook](#).

Seeking Additional Help:

Your first stop should be my office (LDSC 235B). Not only do I want you to reach out to me for your sake, I actually really love teaching in office hours. One-on-one teaching is extremely effective, and even if there are multiple people in my office, guided peer teaching is useful for both the student teaching and being taught. After seeing me, you should seek help from the Center for Academic Success.

Center for Academic Success:

The Center for Academic Success (CAS) provides personalized one-on-one peer and professional staff tutoring in over 100 core subjects. The Center is located in Edgewater Hall Suite 276. The CAS also offers moderated study groups, informal study sessions, a comfortable study environment, a student study lounge, and it's all free! Use the CAS if you need help; become a tutor if you don't. For more information you can e-mail the center at thecas@clayton.edu

Weapons on Campus:

Clayton State University is committed to providing a safe environment for our students, faculty, staff, and visitors. Information on laws and policies regulating weapons on campus are available here: <http://www.clayton.edu/public-safety/Safety-Security/Weapons>.

Notice of Change:

At any time, the instructor reserves the right to adjust the policies, assignments, and due dates to better facilitate the class and the success of the students in the class, in accordance with the policies of Clayton State University; the School of Arts and Sciences; and the Department of Chemistry and Physics.

Tentative Course Schedule

Jan. 16	Last day to add	
Jan. 20	Martin Luther King, Jr. Day (no class)	
Jan. 23	No-show deadline	
Week	Topic	Chapter
1	Liquids and Solids	Chapter 10
2	Solids and Colloids	Chapter 11
3-4	Thermodynamics	Chapter 12
Feb. 13	Exam 1	Chs. 10–12
5-6	Fundamental Equilibrium Concepts	Chapter 13
7-8	Acid-Base Equilibria	Chapter 14
Mar. 26	Exam 2	Chs. 13–14
9-10	Equilibria of Other Reaction Classes	Chapter 15
11-12	Kinetics	Chapter 17
13-14	Electrochemistry	Chapter 16
Apr. 23	Exam 3	Chs. 15–17
15	Nuclear Chemistry (if time)	Chapter 20
May 7	Final exam at 10:15 AM - 12:15 PM	Comprehensive

Last updated: January 10, 2020

Tips for Success

Note-taking Tips:

Effective notes are essential for success in my class. Especially since my definitions and methods sometimes incorporate other perspectives than the book, taking notes in class will help you understand what to focus on, emphasize, and practice in your learning. The following tips are some things to think about when taking notes.

Typing your notes is inferior to writing your notes. Yes, you can write more words per minute of what I say on a laptop, but your brain goes into transcribing mode rather than understanding what the instructor is saying at the time. Research shows that, though more words are written, typed notes are less useful for stimulating memories when studying.

Drop unnecessary words when note-taking. You don't have to write in complete sentences, unless the specific wording is necessary. Develop a shorthand for common words and phrases, such as \uparrow for "increasing," \rightarrow for "implies," Δ for "change," and "DEF" for "definition."

Try the Cornell system of note-taking. Draw a line down the page about $1/3$ of the way from the left, to leave room for marginal notes when studying. Draw a horizontal line sectioning off the bottom $1/6$ or so of the page as well, leaving it open to review via summary.

Practice the skill of "recalling" over the skill of "recognition." Remember you are trying to study to recall the information, not just recognize it. If you simply read your notes, you will not be able to reproduce them later without looking. You may feel you understand how to do a problem by simply reading through it, but you will be surprised how easily our brains can trick us into thinking we understand a problem solving method, when really we just recognize that we did it correctly last time.

Watch for cues from the instructor's voice and body language. Sometimes, it's not what is said, but *how* it's said. Underline, star, or emphasize in some other way the points made with a shift in vocal pitch, energy, or pace.

Write clearly and edit as you go. If you look at a scribble later and have no idea what it means, it might have been better to fix a typo or illegible word when you were in the class and still remembered what it was supposed to be.

Review your notes within 24 hours. Look over your notes while the lecture is still fresh, and fill in that bottom $1/6$ of the page with a summary of the main points and overarching themes. Try to do summarize from memory of what you just reviewed, rather than copying, as it will practice your recall ability.

Reading Tips:

I assign readings every class period. This is not just because I like to write down book chapters and sections on the board, neither is the purpose to justify the absurdly high book costs (sorry about that by the way, I did not set the price). I genuinely believe the book has information you need. I lecture on certain topics differently than the book, since I do not like the way the book covers certain sections (this applies to all books, in one way or another). This means the book can serve as another perspective on the same material, which might help you understand it better.

I was an avid reader when I entered college, but I still struggled with reading the book as a student. Here are some practical tips that I wish I had known back when I was an undergraduate student.

Try the “3R” method (read, recite, review). Read the material, close the book, recite the material, then reread the material. This is a remarkable method for learning factual and problem-solving methods.

Find a purpose for your reading. When reading scientific articles, scientists are often looking for some specific answer to a question or looking for a particular equation, etc. When you are reading a book for a class, most likely you will be looking for answers to assigned homework problems.

Quickly scan over the entire reading assignment first to get a general idea of structure, emphasis, charts, graphs, etc.

Do not underline everything. If you emphasize everything, nothing is emphasized. Color coding is fine, but try to sparingly highlight, as too many colors can make the material lose its shape in terms of emphasis.