

# Course Syllabus

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## General Chemistry II

### Chem. 122A (Section 1001)

### Spring 2024

(23139)

#### Instructor Information

**Instructor:** Dr. Craig D. Dodson

**Office:** Chemistry Building; CB 317c

**Phone:** (775) 784-6588

**Email:** [craigd@unr.edu](mailto:craigd@unr.edu) This is always the best way of contacting me outside of lecture.

**Office Hours:** In CB 317c: Tuesday 2 pm to 3 pm. Wednesday's 10 am to 11 am and 1 pm to 3 pm. Thursday 2 pm to 3 pm. Meeting with me at an alternative time is a possibility. Just email me to schedule. Many questions can be answered via email. This is surprisingly effective and saves you a trip to the Chemistry building. It is most helpful if you include a screen shot/photo of the question as written and of any calculations/work that you have done.

#### Course Description

Chem. 122A lecture is designed as the second-semester of general chemistry for students whose academic plans require a full year of general chemistry. It continues the fundamentals of chemistry started in general chemistry I (Chem. 121A) and includes the properties of solutions, chemical kinetics, chemical equilibrium, acid-base and solubility equilibria, chemical thermodynamics, and electrochemistry.

**Lecture will be delivered 100% in person in JTB # 100 (Jot Travis building) on Tuesday and Thursday from noon to 1:15 pm.**

#### Course Pre/Co-requisites

Prerequisite: Math 127; Chem. 121A and Chem. 121L Corequisite(s): [CHEM 122L \(https://catalog.unr.edu/search\\_advanced.php?cur\\_cat\\_oid=48&search\\_database=Search&search\\_db=Search&cpage=1&ecpage=1&ppage=1&spage=1&tpage=1&location=33&filter%5Bkeyword%5D=Chem.+121](https://catalog.unr.edu/search_advanced.php?cur_cat_oid=48&search_database=Search&search_db=Search&cpage=1&ecpage=1&ppage=1&spage=1&tpage=1&location=33&filter%5Bkeyword%5D=Chem.+121). A working knowledge of algebra is required. This semester we will use algebra more than in Chem. 121 and at a higher level.

#### Required Texts/Course Materials

**Textbook:** *Chemistry: The Central Science, 15th Edition* by Brown, LeMay, *et al.*, published by Pearson. Your textbook does not need to include the "Mastering Chemistry" software since we will not be using it this semester. **See E-text tab below.**

**E-text:** Many of you prefer an e-text and it is be available on the class WebCampus site under "Course Materials First Day". Activating your e-text on the WebCampus site will automatically put the price of the text on your tuition bill. If you have a physical text already or prefer one you will need to opt out on the website. **If you want to opt out, you must do so before 2/5/24.**

**Calculator:** A scientific calculator with exponent handling capability (i.e., scientific notation) and at least the following functions: ln,  $e^x$ , log,  $10^x$ ,  $x^y$  and its' inverse. The TI-30xIIs is the cheapest model available in the bookstore and it is not very useful. I would avoid purchasing it.

**Computer:** You will need a computer for homework and quizzes. These assignments will be completed online.

**Access to internet for Online requirements:** Students will be required to access materials and complete quizzes and assignments online via WebCampus. Consequently, you will need access to a reliable high speed internet connection.

#### Class Procedures/Structures

**Communication:** I prefer that you contact me via email at the address above and not through Canvas which strips some attachments and refuses certain third-party software. Monday through Friday I will answer your email within 24 hours. Email sent after Friday afternoon at 3 p.m. may not be answered until Monday morning. If I receive your email on the weekend and I am available I will answer it but I am often without internet connection on the weekend. Please do not email me with questions about your grade. Federal law prohibits me from discussing grades by email because it is not a secure form of communication. I will be happy to speak to you in person about your grade.

#### Student Learning Outcomes

After successfully completing CHEM 122A, students should be able:

1. perform calculations and apply concepts related to chemical equilibrium, chemical thermodynamics, chemical kinetics, and electrochemistry.
2. explain the general differences that exist between strong acids/bases and weak acids/bases.
3. explain the properties of solutions, identify the factors affecting solubility, and calculate solution concentration.

4. identify and explain the role of chemistry with respect to societal and global issues.
5. evaluate the relationship between chemical structure and chemical reactivity of compounds.

## Course Requirements

Your grade will be based on three 75-minute in class exams each worth 100 points each for a total of 300 points, a series of seven 10-point online quizzes worth a total of 70 points, seven online homework assignments worth 20 points each for 140 points, and a comprehensive final exam worth 120 points.

Three 100 pt. exams = 300

nine 10 pt. online quizzes = 70

9 online homework assignments (20 questions each and 1 point per question) = 140

One final exam = 120

630 pts

The quizzes and the homework are worth one third of your grade and are relatively "low stakes" since you are allowed to use any resources you like and the HW allows three attempts on each problem. The exams including the final are worth two thirds of your grade and are relatively "high stakes" since you have only the limited resources given to you at the exam and your acquired knowledge. If you complete all the quizzes and homework, it is easy to earn virtually all 210 points which can improve your overall final grade by up to a half letter grade versus that based exclusively upon your exam/final exam average. In addition, the quizzes and homework will prepare you for the exams and improve your scores on those exams.

**Exams:** The three "mid-term" exams and the final will be in class. The "mid-terms" will consist of 30 questions, and you will have 75 minutes to complete the exam. The "mid-terms" will consist of 25 multiple choice questions worth 3 points each for 75 out of 100 points and five more involved quantitative problems worth 5 points each for the remaining 25 points. The five-point problems will be hand graded so that partial credit can be assigned. The multiple-choice questions will be scantron scored. During exams cell phones must be stored in a backpack/book bag with the ringer off. If you caught with a cell phone out during an exam you will receive a zero for that exam. Ear buds are also not allowed to be out during exams, and they also will be considered cheating.

**Quizzes:** A series of seven online quizzes (each worth 10 points) will make up 70 points of your overall grade. Each quiz contains ten multiple choice questions. They can be found under quizzes in canvas. Each quiz will be available for only 48 hours, and you will have between 30 and 40 minutes to complete the quiz. When and where you take the quiz within that 48-hour window is up to you. You will be provided with the correct answers after you finish the quiz and after the window of availability closes. The time window that each quiz will be available will be announced in class, posted on Webcampus and you will receive an email notifying you of it 3 or 4 days in advance. You may and should use your text, homework, and notes to complete each quiz.

**Homework:** Seven online homework assignments are also under quizzes in Canvas. There are 20 multiple choice questions at one point each for 20 points for each chapter. These are a required part of your grade and must be completed within the announced available time. The program tells you if you got the question wrong but not the correct answer. You will get 3 tries at each question to get it right and there are only four or five possible answers. The correct answers will be available after the window of availability closes. You should try to get all the points possible on the HW and use all 3 tries.

**Final Exam:** The final exam is comprehensive, worth 120 points and is *required of all students*. Ordinarily there will be no make-up final. Do not schedule plane flights etc. prior to the final exam date (available below/calendar). The final is in class, and will take place on **Thursday May 9, 2024**, in our normal lecture room. Students will be allowed 2 hours to complete the exam from 10:15 am to 12:15 am. It will consist of 60 multiple choice questions at 2 points each for 120 points total. It will be entirely scantron scored.

**Attendance/Extra Credit:** Attendance is required. People who regularly attend lecture are vastly more likely to pass this class and they consistently get better grades. I will not take roll and you do not need to inform me if you need to miss class. However, I will incentivize you to attend regularly by providing extra credit options for those in class. For example I may ask you to do a calculation on paper in class and turn it in. Those present who do the problem and turn it in will receive all or part of the extra credit points. Other more extensive extra credit assignments will be due in class and handed in in person with an ID, so that you must be present to get those points. The total number of extra credit points is not fixed but it will be between 100 and 200 points which is enough to substantially improve your grade. More importantly coming to class will improve your grade regardless of the extra credit points.

**DISCLAIMER:** Chemistry is an inherently quantitative science so most of the questions you will be answering this semester involves solving a numerical problem. Teaching yourself to solve a problem is the most effective way to learn the subject matter. If you get stuck on a homework problem, do not give up. Go back to the chapter and study how similar problems were done. If someone just gives you the answer, you are not learning anything and will likely struggle on the exams. Although the lectures are designed to introduce topics and concepts and will present approaches to solving problems, they are NOT a substitute for actually working the homework problems. Working a variety of homework problems will reinforce the concepts and ensure that you can efficiently complete the exams in the allotted time. Start early and expect each homework assignment to take a couple of hours to complete. These hours maybe spread over a several days. Homework represents practice and practice is required to learn anything from the piano to golf. Help is available from me in office hours, at the PASS sessions and from the Chem. Help Center in the PSAC.

## Grading Criteria, Scale, and Standards

Letter grade assignment: There will be plus and minus grades assigned. The grading scale is listed below. Please note that it is a standard scale with the exception that minimum score for a C- has been lowered to 66.5% and an F is lowered to less than 49.5%. This scale may be lower in some semesters but the bar will never be raised.

A: 93% - 100%

A-: 89.5% - 92.9%

B+: 87% - 89.4%

B: 84% - 86.9%

B-: 79.5% - 83.9%

C+: 74.5% - 79.4%

C: 69.5% - 74.4%

C-: 66.5% - 69.4%

D+: 60.5% - 66.4%

D: 55.5% - 60.4%

D-: 49.5% - 55.4%

F: <49.4%

## Late Work or Make-up Exams Policies

For quizzes and HW should you miss the open time window simply because you forgot or for any reason, let me know within 24 to 36 hours of its' closing and I will reopen that quiz for you no questions asked twice. Everyone gets two re-openings. Should you miss a third please contact me with an excuse and we will discuss your circumstance. It is probable that I will reopen that assignment. Typically, making up missed quizzes or homework assignments will not be allowed after the exam on that material has occurred.

For exams, in general, no early, late or make-up exams will be given except in proven cases of dire emergency, illness or approved university sponsored events. Contact me prior to (or immediately after) the exam date/time to be missed and we can discuss what is appropriate proof of circumstance and how we will proceed. Student athletes on official travel and others attending university sanctioned events who have a conflict must contact me one week in advance, with proof from the appropriate authority and then some accommodation will be made.

## Tentative Course Calendar/Topics Outline

This course is FAST PACED. We will cover roughly a chapter every three class meetings.

Week	Topics, Events	Chapter(s)
1	Syllabus & Chapter 13 <b>/1/26 last day to add/swap without permission</b>	13
2	Finish Chapter 13 <b>/1/31 last day to add/swap with permission and drop with 100% refund</b>	13
3	Chapters 14	14
4	Finish Chapter 14	14
5	Exam prep., start Chapter 15 & <b>Exam #1</b> (Chapters 13 & 14)	13 & 14 (15)
6	Chapter 15	15
7	Chapter 16	16

Week	Topics, Events	Chapter(s)
8	Chapter 16	16
9	Chapter 17	17
10	<b>Spring Break/No classes</b>	
11	Chapter 17/ <b>Exam #2</b> /Chapters 15, 16 & 17 / <b>T. 4/2 Last day to withdraw or switch to audit</b>	15, 16 & 17
12	Chapter 19	19
13	Chapters 19 & 20	19 & 20
14	Chapter 20	20
15	Finish Chapter 20 & <b>Exam #3/chapters 19 &amp; 20</b>	19 & 20
16	Tuesday, May 7, 2024, Final Exam Review/ W 5/8 is Prep Day	
Final	Thursday, May 9, 2024, from 10:15 am to 12:15 pm	Comprehensive

## University Policies

### Statement on COVID-19 Policies

COVID-19, COVID-19 Like Symptoms, and Contact with Someone Testing Positive for COVID-19

Students testing positive for COVID 19, exhibiting COVID 19 symptoms regardless of vaccination status will not be allowed to attend in-person instructional activities and must leave the venue immediately. Students should contact the [Student Health Center \(https://med.unr.edu/student-health-center\)](https://med.unr.edu/student-health-center) or their health care provider to receive care and who can provide the latest direction on quarantine and self-isolation. Contact your instructor immediately to make instructional and learning arrangements.

### Accommodations for COVID 19 Quarantined Students

For students who are required to quarantine or self-isolate due to 1) COVID 19 infection or 2) exposure while not vaccinated, instructors must provide opportunities to make-up missed course work, including assignments, quizzes or exams. In courses with mandatory attendance policies, instructors must not penalize students for missing classes while quarantined.

Failure to Comply with Policy (including as outlined in this Syllabus) or Directives of a University Employee

In accordance with section 6,502 of the University Administrative Manual, a student may receive academic and disciplinary sanctions for failure to comply with policy, including this syllabus, for failure to comply with the directions of a University Official, for disruptive behavior in the classroom, or any other prohibited action. "Disruptive behavior" is defined in part as behavior, including but not limited to failure to follow course, laboratory or safety rules, or endangering the health of others. A student may be dropped from class at any time for misconduct or disruptive behavior in the classroom upon recommendation of the instructor and with approval of the college dean. A student may also receive disciplinary sanctions through the Office of Student Conduct for misconduct or disruptive behavior, including endangering the health of others, in the classroom. The student shall not receive a refund for course fees or tuition.

### Statement on Academic Dishonesty

"The University Academic Standards Policy defines academic dishonesty, and mandates specific sanctions for violations. See the University Academic Standards policy: [UAM 6,502. \(https://www.unr.edu/administrative-manual/6000-6999-curricula-teaching-research/instruction-research-procedures/6502-academic-standards\)](https://www.unr.edu/administrative-manual/6000-6999-curricula-teaching-research/instruction-research-procedures/6502-academic-standards)."

Having a cell phone out or having ear buds in during an exam for any reason is cheating and will result in a zero.

### Statement of Disability Services

"Any student with a disability needing academic adjustments or accommodations is requested to speak with me and the [Disability Resource Center \(http://www.unr.edu/drc\)](http://www.unr.edu/drc) (Pennington Achievement Center Suite 230) as soon as possible to arrange for appropriate accommodations."

This course may leverage 3<sup>rd</sup> party web/multimedia content, if you experience any issues accessing this content, please notify your instructor.

## Statement on Audio and Video Recording

### Student-created Recordings




"Surreptitious or covert video-taping of class or unauthorized audio recording of class is prohibited by law and by Board of Regents policy. This class may be videotaped or audio recorded only with the written permission of the instructor. In order to accommodate students with disabilities, some students may have been given permission to record class lectures and discussions. Therefore, students should understand that their comments during class may be recorded."


## Statement on Maintaining a Safe Learning and Work Environment

The University of Nevada, Reno is committed to providing a safe learning and work environment for all. If you believe you have experienced discrimination, sexual harassment, sexual assault, domestic/dating violence, or stalking, whether on or off campus, or need information related to immigration concerns, please contact the University's Equal Opportunity & Title IX office at 775-784-1547. Resources and interim measures are available to assist you. For more information, please visit the [Equal Opportunity and Title IX \(https://www.unr.edu/equal-opportunity-title-ix\)](https://www.unr.edu/equal-opportunity-title-ix) page.

**Statement for Academic Success Services:** "Your student fees cover usage of the [Math Center \(http://www.unr.edu/mathcenter/\)](http://www.unr.edu/mathcenter/) (775) 784-4433, [Tutoring Center \(https://www.unr.edu/tutoring-center/\)](https://www.unr.edu/tutoring-center/) (775) 784-6801, and [University Writing Center \(https://www.unr.edu/writing-center/\)](https://www.unr.edu/writing-center/) (775) 784-6030. These centers support your classroom learning; it is your responsibility to take advantage of their services. Keep in mind that seeking help outside of class is the sign of a responsible and successful student."

## Course Summary:

Date	Details	Due
Tue Feb 6, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385364">Ch. 13 homework</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385364">https://webcampus.unr.edu/courses/108022/assignments/1385364</a> )	due by 11:59pm
Fri Feb 9, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385370">Quiz For Chapter 13</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385370">https://webcampus.unr.edu/courses/108022/assignments/1385370</a> )	due by 11:59pm
Tue Feb 20, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385357">Ch. 14 homework</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385357">https://webcampus.unr.edu/courses/108022/assignments/1385357</a> )	due by 11:59pm
Thu Feb 22, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385374">Quiz for Chapter 14</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385374">https://webcampus.unr.edu/courses/108022/assignments/1385374</a> )	due by 11:59pm
Tue Feb 27, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1411604">Exam #1</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1411604">https://webcampus.unr.edu/courses/108022/assignments/1411604</a> )	due by 2:59pm
Thu Mar 7, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385378">Ch. 15 homework</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385378">https://webcampus.unr.edu/courses/108022/assignments/1385378</a> )	due by 11:59pm
Tue Mar 12, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385372">Quiz on Chapter 15</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385372">https://webcampus.unr.edu/courses/108022/assignments/1385372</a> )	due by 11:59pm
Tue Mar 19, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385361">Quiz on Chapter 16 part 1</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385361">https://webcampus.unr.edu/courses/108022/assignments/1385361</a> )	due by 11:59pm
Thu Mar 21, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385379">Ch. 16 Homework</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385379">https://webcampus.unr.edu/courses/108022/assignments/1385379</a> )	due by 11:59pm
Thu Apr 4, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385360">Ch. 17 homework</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385360">https://webcampus.unr.edu/courses/108022/assignments/1385360</a> )	due by 11:59pm
Fri Apr 5, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385358">Quiz on Chapters 16b and 17</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385358">https://webcampus.unr.edu/courses/108022/assignments/1385358</a> )	due by 11:59pm
Tue Apr 9, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1421611">Exam #2</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1421611">https://webcampus.unr.edu/courses/108022/assignments/1421611</a> )	due by 1:15pm
Thu Apr 18, 2024	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1385373">Ch. 19 homework</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1385373">https://webcampus.unr.edu/courses/108022/assignments/1385373</a> )	due by 11:59pm

Date	Details	Due
	 <a href="https://webcampus.unr.edu/courses/108022/assignments/1406739">Extra Credit</a> ( <a href="https://webcampus.unr.edu/courses/108022/assignments/1406739">https://webcampus.unr.edu/courses/108022/assignments/1406739</a> )	