Syllabus for Chem 2: Intro to Chemistry

Course Information

Semester & Year: Fall Semester 2021
Course ID & Section #: Course ID: CHEM-2-D2047, Section # 052047
Instructor's name: Frank Simpson, Ph.D.
Day/Time of synchronous Zoom Lectures: MW 10:05AM – 12:10PM
Day/Time of in-person (Face-to-Face) Laboratory: W 1:00PM – 4:10PM
Location of Laboratory: Room DM26
Number of exams: 6 Midterm Examinations plus the Final Examination, some of which may be proctored
Course units: 5 units (4 units lecture / 1 unit laboratory)

Instructor Contact Information

Office location: Room DM26, online, or by telephone
Office hours: Mondays 12:15 PM to 1:15 PM, Wednesdays 4:15 PM to 5:15 PM, Thursdays 7PM to 8PM
Telephone number (Cell): (707) 951-3139
Email address: frank-b-simpson@redwoods.edu or via Canvas email (preferred)

Textbook Information

Title & Edition: Fundamentals of General, Organic, and Biological Chemistry, 4th Edition
Author: John McMurry and Mary E. Castellion
ISBN: 0-13-1486484

Laboratory Manual

College of the Redwoods Del Norte Chem 2 Laboratory Manual Fall Semester 2021, by Frank Simpson

Catalog Description

CHEM-2 Introduction to Chemistry
(5 Units LEC/LAB) Letter Grade Methods, Pass/No Pass option
Transferrable to both UC and CSU
C-ID: CHEM 101

An introduction to basic chemical principles. Serves as a beginning course for allied science students, including nursing, and as general education. Students learn to classify matter and to describe physical and chemical phenomena such as atomic structure, compounds, energy, solutions, acids and bases, nuclear chemistry, and organic chemistry, both qualitatively and quantitatively, at an introductory level. Includes a coordinated lab experience.

Note: Safety protection for eyes and scientific calculator required.

Course Student Learning Outcomes *(from course outline of record)*

1. Analyze the fundamental features of chemistry including measurement, mathematical conversion of measured physical properties such as mass, volume, density, pressure, temperature, solutions, concentrations and dilutions.

2. Demonstrate knowledge of the qualitative features of chemistry including physical and chemical properties, naming and writing chemical formulas of compounds and evaluating chemical reactions.
3. Differentiate typical acid and base formulas and compare/contrast the behavior associated with acids and bases.
4. Analyze chemical reactions to quantitatively determine theoretical yield.

Prerequisites/co-requisites/ recommended preparation

None.
Enrollment Limitation: Appropriate STEM Math placement, or Elementary Algebra (high school or college)
Strongly Recommended: Math 204/304 taken concurrently

Accessibility

College of the Redwoods is committed to making reasonable accommodations for qualified students with disabilities. If you have a disability or believe you might benefit from disability-related services and accommodations, please contact your instructor or Disability Services and Programs for Students (DSPS). Students may make requests for alternative media by contacting DSPS based on their campus location:

- Eureka: 707-476-4280, student services building, 1st floor
- Del Norte: 707-465-2324, main building near library
- Klamath-Trinity: 530-625-4821 Ext 103

If you are taking online classes DSPS will email approved accommodations for distance education classes to your instructor. In the case of face-to-face instruction, please present your written accommodation request to your instructor at least one week before the needed accommodation so that necessary arrangements can be made. Last minute arrangements or post-test adjustments usually cannot be accommodated.

Student Support

Good information and clear communication about your needs will help you be successful. Please let me know about any specific challenges or technology limitations that might affect your participation in class. I want every student to thrive.

Evaluation & Grading Policy

[Should include info such as final grade calculations, rubrics, late assignment policy, and other grading practices]

Letter grades on exams and throughout the course (ideally) will be standardized as follows.

A	93% - 100%	A-	92% - 90%		
B+	87% - 89%	B	83% - 86%	B-	80% -82%
C+	76% -79%	C	70% - 75%		
D	60% - 69%	F	59% and below		

Grading may be curved somewhat from these percentages, if necessary, to insure fairness.

Incompletes may be given at the discretion of the instructor. The College of the Redwoods does not give A+ or C- grades.

Chem 2 may be taken for a letter grade, or for a Pass/Not Pass option.

Final Examination: At least 75% of the final examination will be cumulative.

Final Grades: Final grades for the course will be tallied as follows:

Lab reports: 15%

Midterm Exams: 50%

Homework: not graded

Quizzes: 5%

Class presentations and Class participation: 5%

Final (Cumulative): 25%

Total: 100%

Admissions deadlines & enrollment policies

Fall 2021 Dates

- *Classes begin: 8/21/21*
- *Last day to add a class: 8/27/21*
- *Last day to drop without a W and receive a refund: 9/03/21*
- *Labor Day Holiday (all campuses closed): 09/06/21*
- *Census date: 9/07/21 or 20% into class duration*
- *Last day to petition to graduate or apply for certificate: 10/28/21*
- *Last day for student-initiated W (no refund): 10/29/21*
- *Last day for faculty-initiated W (no refund): 10/29/21*
- *Veteran's Day (all campuses closed): 11/11/21*
- *Fall Break (no classes): 11/22/21 – 11/26/21*
- *Thanksgiving Holiday (all campuses closed): 11/24/21 – 11/26/21*
- *Final examinations: 12/11/21 – 12/17/21*
- *Last day to petition to file P/NP option: 12/17/21*
- *Semester ends: 12/17/21*
- *Grades available for transcript release: approximately 01/07/22*

Academic dishonesty

In the academic community, the high value placed on truth implies a corresponding intolerance of scholastic dishonesty. In cases involving academic dishonesty, determination of the grade and of the

student's status in the course is left primarily to the discretion of the faculty member. In such cases, where the instructor determines that a student has demonstrated academic dishonesty, the student may receive a failing grade for the assignment and/or exam and may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the College Catalog and on the College of the Redwoods website.

I have experienced significant levels of dishonesty and collusion in a previous Chem 2 class at the College of the Redwoods. I consider teaching the honor system to be one of my responsibilities, and take violations of the honor system very seriously. In the online format, trust and academic honesty are particularly imperative for instruction to be possible. Depending upon the circumstances, I may request the maximum administrative punishment permitted by this college. The instructor reserves the right to give zero credit, and/or an oral examination, and/or an additional, supervised written examination to students suspected of dishonesty.

Disruptive behavior

Student behavior or speech that disrupts the instructional setting will not be tolerated. Disruptive conduct may include, but is not limited to: unwarranted interruptions; failure to adhere to instructor's directions; vulgar or obscene language; slurs or other forms of intimidation; and physically or verbally abusive behavior. In such cases where the instructor determines that a student has disrupted the educational process, a disruptive student may be temporarily removed from class. In addition, the student may be reported to the Chief Student Services Officer or designee. The Student Code of Conduct (AP 5500) is available on the College of the Redwoods website. Additional information about the rights and responsibilities of students, Board policies, and administrative procedures is located in the College Catalog and on the College of the Redwoods website.

Inclusive Language in the Classroom

College of the Redwoods aspires to create a learning environment in which all people feel comfortable in contributing their perspectives to classroom discussions. It therefore encourages instructors and students to use language that is inclusive and respectful.

Setting Your Preferred Name in Canvas

Students have the ability to have an alternate first name and pronouns to appear in Canvas. Contact Admissions & Records to request a change to your preferred first name and pronoun. Your Preferred Name will only be listed in Canvas. This does not change your legal name in our records. See the Student Information Update form.

Canvas Information

Canvas is the fulcrum and bulletin board for disseminating information in Chem 2. You probably will find yourself referring to it daily, and perhaps even several times each day. It behooves you to become familiar with how it works. Assignments, Canvas email, and particularly Modules, will serve you well. Links to all video recordings of Lectures and Laboratories will be found in Modules.

Log into Canvas at https://redwoods.instructure.com

Canvas Password is your 8 digit birth date
For tech help, email its@redwoods.edu or call 707-476-4160
Canvas Help for students: https://webapps.redwoods.edu/tutorial/
Canvas online orientation workshop: Canvas Student Orientation Course (instructure.com)

Familiarity with Canvas is essential for Chem 2. Please ask for my help very early in the semester (i.e. the first day or first week) if you have any difficulty whatsoever finding your way around Canvas.

Community College Student Health and Wellness

Resources, tools, and trainings regarding health, mental health, wellness, basic needs and more designed for California community college students, faculty and staff are available on the California Community Colleges Health & Wellness website.

Wellness Central is a free online health and wellness resource that is available 24/7 in your space at your pace.

Students seeking to request a counseling appointment for academic advising or general counseling can email counseling@redwoods.edu.

Emergency procedures / Everbridge

College of the Redwoods has implemented an emergency alert system called Everbridge. In the event of an emergency on campus you will receive an alert through your personal email and/or phones. Registration is not necessary in order to receive emergency alerts. Check to make sure your contact information is up-to-date by logging into WebAdvisor https://webadvisor.redwoods.edu and selecting 'Students' then 'Academic Profile' then 'Current Information Update.'

Please contact Public Safety at 707-476-4112 or security@redwoods.edu if you have any questions. For more information see the Redwoods Public Safety Page.

In an emergency that requires an evacuation of the building anywhere in the District:

- Be aware of all marked exits from your area and building
- Once outside, move to the nearest evacuation point outside your building
- Keep streets and walkways clear for emergency vehicles and personnel

Do not leave campus, unless it has been deemed safe by the campus authorities.

Del Norte Campus Emergency Procedures

Please review the Crescent City campus emergency map for campus evacuation sites, including the closest site to this classroom (posted by the exit of each room). For more information, see the Redwoods Public Safety Page.

Student Support Services

The following online resources are available to support your success as a student:

- CR-Online (Comprehensive information for online students)
- Library Articles & Databases

- Canvas help and tutorials
- Online Student Handbook

Counseling offers assistance to students in need of professional counseling services such as crisis counseling.

Learning Resource Center includes the following resources for students

- Academic Support Center for instructional support, tutoring, learning resources, and proctored exams. Includes the Math Lab & Drop-in Writing Center
- Library Services to promote information literacy and provide organized information resources.
- Multicultural & Diversity Center

Special programs are also available for eligible students include

- Extended Opportunity Programs & Services (EOPS) provides services to eligible income disadvantaged students including: textbook award, career academic and personal counseling, school supplies, transportation assistance, tutoring, laptop, calculator and textbook loans, priority registration, graduation cap and gown, workshops, and more!
- The TRiO Student Success Program provides eligible students with a variety of services including trips to 4-year universities, career assessments, and peer mentoring. Students can apply for the program in Eureka or in Del Norte
- The Veteran's Resource Center supports and facilitates academic success for Active Duty Military, Veterans and Dependents attending CR through relational advising, mentorship, transitional assistance, and coordination of military and Veteran-specific resources.
- Klamath-Trinity students can contact the CR KT Office for specific information about student support services at 530-625-4821

Prerequisites:

The enrollment limitation for Chem 2 is "Appropriate STEM Math placement, or Elementary Algebra (high school or college)". Though not required, concurrent enrollment in a new course offering, Math 204/304, is very strongly recommended for all students in Chem 2. Our statistics show that Math 204/304 improves grades in Chem 2.
Chem 2 requires graphing data and interpretation of graphs, manipulating and evaluating algebraic expressions, and solving linear equations. It additionally requires knowledge of geometry including pi (π), plus exponents and logarithms.

Though not mandatory, all Chem 2 students are strongly encouraged to enroll concurrently in Math 204/304. Math 204 can be taken for no credit, while Math 304 is a 0.5 unit course. They are the same, identical course, with the equivalent of 9-12 class meetings. It is held during the first half of the semester, to get students off to a good start in Chem 2. Its content is tailored specifically to complement and to prepare students to do well Chem 2. Our statistics show that students who enroll in Math 204/304 do better in Chem 2 by a full grade point!

Covid-19:

At this time, August 20, 2021, facial covering of nose and mouth is mandated for indoor activities on all College of the Redwoods Campuses.

Tentative Course Calendar:

Chem 2 - D2047 Fall Semester 2021

Tentative Course Calendar:

Week	Dates M/W	Mon. Lect.	Wed. Lect.	Wed. Lab
1	Aug 23/25	Scientific Method	Ch 1	Lab Orientation, write-ups, Lab Technique & Safety
2	Aug 30/Sept 1	Ch 1 & 2	Ch 2	Measurements
3	Sept 6/8	Labor Day	Exam 1	Density of a Solid
4	Sept 13/15	Ch 3	Ch 3	TBA
5	Sept 20/22	Ch 4	Ch 4	Naming Compounds
6	Sept 27/29	Exam 2	Ch 5	Lewis Structures/VSEPR
7	Oct 4/6	Ch 5	Ch 6	Precipitation Reactions
8	Oct 11/13	Ch 6	Exam 3	Empirical Formula
9	Oct 18/20	Ch 7	Ch 7	Galvanized Nail
10	Oct 25/27	Ch 8	Ch 8	Crime Solvers
11	Nov 1/3	Exam 4	Ch 9	Beers Law (a flash drive is needed for this lab)
12	Nov 8/10	Ch 9	Ch 10	Titration of Vinegar
13	Nov 15/17	Ch 10	Exam 5	Aspirin
14	Nov 22/24	Thanksgiving Day Holidays		
15	Nov 29/Dec 1	Ch 11	Ch 11	Aspirin
16	Dec 6/8	Ch 12	Exam 6	Lab Write-ups Workshop + Review
17	Dec 15, Wednesday, 10:45 AM to 12:45 PM - Final Exam			

Note: The above schedule and procedures are subject to change at the discretion of the instructor.

Canvas Requirements:

Students must have a computer that is able to access the CANVAS system. The minimum requirements of your computer and browser may be found via the information and links of the following web sites: https://community.canvaslms.com/t5/Canvas-Basics-Guide/What-are-the-browser-and-computer-requirements-for-Canvas/ta-p/66
We will become more fluent with the CANVAS tool as the term progresses.

Online Requirements:

It goes without saying that you will need a modern, fast computer, a modern browser, and a fast internet connection to participate in a hybrid online/in-person class. You will need a word processing program. You also will need a working printer and a scanner.

Attendance:

Lectures: You are both encouraged and expected to "attend" all lectures online, either synchronously or asynchronously, or both. Labs are in-person (Face-to-Face) and attendance is essential to passing the class, especially since labs cannot be set up again or repeated. Chem 2 is quite fast-paced; missing two lectures in a row is equivalent to missing an entire chapter of the book. **Each chapter of the book intentionally builds on what was taught previously**. Thus not keeping abreast of the class material almost certainly will result in poorer performance. The instructor will warn you beforehand, however the instructor reserves the option of dropping a student with a "W", if that student is not turning in work, or appears to be falling too far behind.

Laboratories: Some of the laboratory exercises are "wet labs", and some are "dry labs". Wet labs are performed with chemical reagents in the Chemistry laboratory, while dry labs are performed on paper with pen or pencil. The chemistry laboratory can be a dangerous place, so safety is always a concern. CR laboratories are equipped with special, OSHA mandated, safety equipment, such as fume hoods, fire extinguishers, and eye wash stations. Chem 2 has a required Laboratory Manual, and the instructor will explain what is required for the write-ups. Lab write-ups are due one week after the lab is performed.

Class Participation and In-Class Presentations:

Each student will be asked to prepare a brief, 5-minute Zoom video recording, or a 5-minute oral presentation on a topic of chemistry. Topics include, Who devised the Periodic Table? How was oxygen discovered? Who discovered that water is H_2O, and how was it done? What trait do the Noble Gases share? What is a trans fat? Who was Madam Curie? How does a spectrophotometer work? Etc.

Use Caution with the Internet:

The Internet is a valuable tool and often can be extremely useful. For example, it makes online classes possible. But please beware: a percentage of the information on the Internet is misinformed or incorrect, analogous to the National Enquirer of the grocery newsstand. Exam answers obtained from the Internet will be marked incorrect if they do not concur with the Textbook or with information presented by the instructor during Chem 2 lectures, Power Points, labs, and videos. Our Textbook and my lectures are the final authorities for Chem 2, not the Internet.

Homework:

Chapter readings and homework problems will be assigned for each of the 12 chapters that we will cover in this course. The assigned homework for each textbook chapter will be posted on CANVAS. We will review the homework problems in class. You will not be graded on your homework, however if you do not do the assignments on your own, your chance of passing the exams is next to nil. As an encouragement, I will ask you to turn in your homework, and will record that you have done so with a checkmark in the record book. If you are on the borderline between grades at the end of the semester, a record of having turned in your homework may raise your grade a notch. However, as said, your homework will be recorded, but will not be graded.

Quizzes:

Quizzes may be given periodically, to encourage you to keep up with the chapter readings and homework problems, and to give me opportunity to see how you all are doing, or what topics need more attention. Quizzes usually will be graded.

Midterm Exams:

An exam will be given every time we complete two chapters of the book. Because we will be covering Chapters 1 through 12, in order, and in their entirety, there will be a total of six midterm examinations during the semester, plus a final exam. The online format opens the door to all sorts of misbehaviors on tests, thus exams may be proctored. However some may be given on your own cognizance. Regardless, unless explicitly stated otherwise, you will be expected to work on all exams individually and to proctor yourself on the honor system, without discussing or sharing solutions or answers or test questions with others.

Final Examination:

At least 75% of the final examination will be cumulative.

Laboratory:

It is wise to prepare in advance for each week's laboratory by reading through the Lab Manual's protocol beforehand. Lab write-ups will be due one week following the laboratory, itself. You will be asked to keep a separate, organized lab notebook. In addition students will be asked to turn in a full write-up for each experiment with Title, Purpose, Materials, Methods, Results, Calculations (with Graphs, if appropriate), and Conclusions, as if you were a professional, practicing, publishing scientist or clinician. You are expected to attend and to participate in all of the laboratories, as hands-on experience is an essential aspect of chemistry. Safety protocols must be observed. Face masks must be worn at all times due to the Covid-19 pandemic. Food and water/sodas are NOT permitted in the laboratory.

Scientific Calculator:

You will need a scientific calculator able to perform scientific notation and logarithms, plus having pi (π). A programmable calculator is a wise investment for anyone planning to continue in the sciences or in a clinical field. There are many, many calculations in this course, so buy a good calculator that is simple to use and appropriate for your math skills. Become well versed in its use. Though I prefer the Hewlett Packard, Reverse Polish Notation (RPN) calculators, the TI 83/84 series calculators are used frequently in courses at the College of the Redwoods. The TI

Flash Drive:

A flash drive may be needed for data storage for some of the laboratories.

Grades:

Grades on Exams and throughout the course (ideally) will be standardized as follows.

A	93% - 100%
A-	92% - 90%
B+	87% - 89%
B	83% - 86%
B-	80% -82%
C+	76% -79%
C	70% - 75%
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Incompletes may be given at the discretion of the instructor. The College of the Redwoods does not give A+ or C- grades.

Chem 2 may be taken for a letter grade, or for a Pass/Not Pass option.

Final Grades:

Final grades for the course will be tallied as follows:

Lab reports: 15%

Midterm Exams: 50%

Homework: not graded

Quizzes: 5%

Class presentations and Class participation: 5%

Final: 25%

Total: 100%

As they accumulate, scores will be published confidentially in Canvas, where they will be available for each student to view.

Work that is more than two days late may be subject to a penalty, and if more than a week late probably will not be graded. Please keep abreast of class assignments, and complete them fully before turning them in.

Instructor and Student Drops:

I will notify you mid-semester before the drop date, if I believe that you are at risk for a failing grade. We can discuss, or I may recommend, your dropping the course. Additionally, I reserve the option to give at-risk D or F students an instructor drop, if I consider doing so to be in your better interest.

You would be wise to watch and to study the Zoom lectures and to attend all laboratories. Missing exams may result in a student being dropped from the course by the instructor, before the withdrawal deadline. Again, I will discuss the options with you, beforehand. Cases will be considered on an individual basis.

End of Semester Summary:

At the end of the semester, usually after all papers are turned in and graded, there sometimes are loose ends that need to be addressed. But it's the end of the semester, and the class is "officially" over. For instance, at the close of one semester, while grading the 6th midterm and final exam, I discovered that approximately 1/3 of the students had exchanged answers. On another occasion, two students "fudged" their experimental data, in an attempt to obtain a more correct answer, on the very last write-up of the semester. This "fudging" may sound minor, or even funny, but I have seen professors lose their jobs over this sort of thing. And if a nurse alters a patient's data, she may lose her job or license. In contrast, two years ago, one lab group envisioned an incredibly creative, in fact brilliant solution to a problem that I had never before considered, again on one of the last write-ups of the semester. I felt moved to praise them all for it. But because these things occurred at the very end of the semester, I was unable to communicate with any of these students, in person. The semester was over. In light of these three experiences, I reserve the right to contact students to "tidy up" a few remaining topics at the end of the semester, if necessary, should doing so be appropriate or warranted.

To do well in this course I suggest…

1) Purchase your own, personal copy of the Text Book. Spend the $10. Do not rely on borrowing a friend's book, or on renting a Reserve copy from the Library.

2) **Read the Book, Read the Book, Read the Book, Read the Book. Then read it again.** Read each Book chapter before the lecture, and reread the chapter again after the lecture. Make reading and studying the Book your first priority, and do it often. It is a statistically proven that the more times you read the Book, the better you will know it.

3) Enroll concurrently in Math 204/304, even if you think you "know math".

4) Attend all lectures and all laboratories, online.

5) Read the Lecture notes and power points before the lecture, and most importantly, make sure to review them again after the lecture, and again before the exams. Lectures are covered on the exams. And so is the Book. Lecture Power Points will be posted before each lecture on CANVAS/MODULES, so you can print out a personal paper copy for note taking during the lecture, itself.

6) Do the assigned homework, and turn it in for a check mark each week.

7) Lab write-ups are graded, so do the Lab write-ups completely and TURN THEM IN ON TIME. Leave no questions blank. If you are unsure about a protocol, or about how to answer a question, ask the instructor. I am here to help you! There are 11 labs, so 11 lab write-ups – about 1 per week. That is a lot of write-ups. Lab write-ups can be time-consuming. Don't fall behind on your lab write-ups. Be prepared for each lab by reading and understanding the protocol before you arrive to class. The labs are deliberately arranged to complement the content of the Lectures. Labs and lectures thus go hand-in-hand. So stay current with both the lectures and the lab write-ups, and you will do well.

8) Find a tutor. It is the best way to improve both your grade, and your understanding of chemistry. I have watched tutors do amazing wonders for students.

9) Do not hesitate to look up topics on the internet and on You Tube, especially if you desire or need further clarification of a topic. However, if there is a discrepancy between the internet and the Textbook, rely on the Textbook's answer, or ask your instructor. There frequently are mistakes and misinformation on the internet.

10) Ask me questions, and demand satisfactory answers. I want all of you to do extremely well. Ask me your questions, and etc. Don't leave my office until you obtain and fully understand the answer. Please attend my office hours on Mondays after class and Wednesdays after lab. Or schedule an appointment to meet with me - even on weekends. That is what you and I are here for. I want you to learn Chemistry and to get an A, because as nurses and professionals you'll need Chemistry some day.

11) Use and check CANVAS often, at least twice each week.

12) By the way, if it is in the Book, yes, you really do need to know it.

As for academic cheating, no thanks.

I will be very, very strict about this. If warranted, I will write you up and will submit your name for administrative discipline. Grievous cases may follow you on your permanent record, and/or may lead to suspension from the College. Please don't. Honesty really is the best policy. Honesty will reward you many, many times over during your life and career.

Good Luck, and I look forward to having you in Chemistry 2!!!!!

Frank Simpson

Telephone or text: (707) 951-3139

or via CANVAS email

Note: The above schedule and procedures are subject to change at the discretion of the instructor.