COLLEGE OF THE REDWOODS

Syllabus for:

- Chem-2-V3372-2022S Introduction to Chemistry

Course Information

- Semester & Year: Spring 2022
- Course ID & Section #:
  - Chem-2-V3372-2022S Introduction to Chemistry
- Instructor's name: Tony Sartori
- Day/Time: Asynchronous lectures and labs. Also, synchronous lectures and labs as scheduled below (time permitting)
  - MTWTh 10am-11:45am
  - MTWTh 6pm-7:45pm
- Location: Virtual through TechConnectZoom
- Number of Proctored Exams: 4-6, using TechConnectZoom on specified dates and times.
- Number of units: 5 units (4 lecture/1 lab)

Instructor Contact Information

- Office location: online via Confer Zoom, must be scheduled with the instructor.
- Office hours: online via Confer Zoom, must be scheduled with the instructor, Mon-Thur.
- Email address: tony-sartori@redwoods.edu
- Phone: I do not check my office phone. Use my email or the Canvas inbox if you want to get ahold of me.

Catalog Description

- 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

Course Student Learning Outcomes

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.

Prerequisite

- Elementary Algebra

Recommended

- Math 204/304 -- Algebra for Students taking CHEM 2
- Both classes are similar, one is for credit and the other is not.
- Highly recommended for students struggling with algebra

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 your instructor know about any specific challenges or technology limitations that might affect your participation in class. College of the Redwoods wants every student to be successful.

Evaluation & Grading Policy

- **Course Grading:** Exams, discussion/miscellaneous assignments, quizzes, and lab assignments are worth 40%, 10%, 10%, 20%, and 20% respectively, as shown below. Let the instructor know, in advance if possible, if you cannot take a scheduled exam so that other arrangements may be made. Late materials are not generally accepted. Graded materials normally will be returned two weeks after submission.

• Exams	40%
• Discussion	05%
• Assignments	05%
• Chapter Quizzes	10%

- Lab Assignments 20%
- Final Exam 20%
- Total 100%

- **All Submitted Materials:**
  - Submissions must be neat and organized. Ask me if you're not sure if you're neat and I'll let you know.
  - Show your work when calculations are required so that it is easy to follow, the correct answer without the work is zero points. Also, include brief explanations for answers that do not require calculations. This behavior will be modeled in the video lectures.
  - Use units in calculations and labels when appropriate, also modeled in video lectures.
  - Submission for each assignment will use the pdf format and only one file will be submitted for each assignment
  - Late assignments (not exams) are accepted, but points are halved. The limit is one week.
  - Omission of any of the above may result in a zero for the assignment
- **Exams:** There will be four regular exams. Exams are short answer questions that may require definitions, descriptions, lists, and/or calculations. Students are allowed one 3"x 5" card of hand-written notes for each exam. Exams will be proctored using TechConnectZoom. You get one chance at each exam. Each exam is 90 minutes. Afterward, students will photograph their work and the index card, transfer the image files to their computer, insert the images into a word document, save the document as a pdf file, then upload the single file to Canvas. It is best to choose medium quality for images when transferring from a phone. All of this will be done while being monitored via TechConnectZoom. No exams are dropped.
- **Quizzes:** There will be about 13 quizzes, usually one per module. You may take the quiz as often as you like by the due date and keep the highest score. These are multiple-choice. The lowest quiz score is dropped. Quizzes are open for one week, so take it early. If you wait for that last day and there is an internet or power outage on your end, then you do not get to take the quiz. The lowest quiz is dropped.
- **Homework:** There will be regular lecture/homework assignments for each chapter along with solutions. Solutions will be made available seven days after the first lecture for that module or topic. Homework is not submitted for grading. If you can do the homework without looking in the book for help then you are ready for the test. By "do" I mean that you can work out and write out the solution. If you cannot do the homework then you are not ready for the exam.
- **Lab Assignments:** Experiments will have an assignment. The due date will be with each lab. Each lab assignment is worth 20 points. The lab assignment will the lowest grade will be dropped.
- **Discussion:** There will be regular discussions, some graded, some not. Posting and replies will be required. Some will be very easy, do not pass on these. The discussion with the lowest grade will be dropped.
- **Miscellaneous Assignments:** These are additional assignments that are not discussions. An example is submitting your video introduction. Most of these will be graded. The miscellaneous assignment with the lowest grade will be dropped.
- **Final Exam:** The final exam is cumulative and multiple-choice. You are allow an 8 ½" x 11" hand-written page of notes for the final. It is two hours long and will be proctored using TechConnectZoom.
- **Grading:** Feedback on assignments submitted on time will normally be within two weeks of submission.

- **Grades:** Grades will be earned based on the following total percentages, using rules of rounding to round to the one's place:

A 93-100%	B+ 87-89%	C+ 77-79%	D 60-69%
A- 90-92%	B 83-86%	C 70-76%	F 0-59%
	B- 80-82%		

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.

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 used to deliver content for this class. It is the source of all assignments, exams, quizzes, lectures, Confer Zoom sessions, and more. It is broken into modules, an Introduction module, twelve chapter modules, and a Resources Module. The dues dates can be found at the bottom of windows for each module. Students are expected to keep up with the modules as they are published.
- Log into Canvas at https://redwoods.instructure.com
- 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)

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.

Eureka Campus Emergency Procedures

- Please review the campus emergency map for evacuation sites, including the closest site to this classroom (posted by the exit of each room). For more information on Public Safety go to the Redwoods Public Safety Page It is the responsibility of College of the Redwoods to protect life and property from the effects of emergencies within its own jurisdiction.
- In the event of an emergency:
  1. Evaluate the impact the emergency has on your activity/operation and take appropriate action.
  2. Dial 911, to notify local agency support such as law enforcement or fire services.
  3. Notify Public Safety 707-476-4111 and inform them of the situation, with as much relevant information as possible.
  4. Public Safety shall relay threat information, warnings, and alerts through the Everbridge emergency alert system, Public address system, and when possible, updates on the college website, to ensure the school community is notified.
  5. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet, (evacuation to a safe zone, shelter in place, lockdown, assist others if possible, cooperate with First Responders, etc.).
  6. If safe to do so, notify key administrators, departments, and personnel.
  7. Do not leave campus, unless it is necessary to preserve life and/or has been deemed safe by the person in command.

Klamath Trinity Campus Emergency Procedures

- Please review the responsibilities of, and procedures used by, the College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to communicate to faculty, staff, students and the general public during an emergency. It is the responsibility of College of the Redwoods, Klamath-Trinity Instructional Site (KTIS) to protect life and property from the effects of emergency situations within its own jurisdiction.
  1. In the event of an emergency, communication shall be the responsibility of the district employees on scene.
     a. Dial 911, to notify local agency support such as law enforcement or fire services.
     b. If safe to do so, notify key administrators, departments, and personnel.
     c. If safe to do so, personnel shall relay threat information, warnings, to ensure the school community is notified.
     d. Contact 530-625-4821 to notify of situation.
     e. Contact Hoopa Tribal Education Administration office 530-625-4413
     f. Notify Public Safety 707-476-4111.
  2. In the event of an emergency, the responsible district employee on scene will:
     a. Follow established procedures for the specific emergency as outlined in the College of the Redwoods Emergency Procedure Booklet.
     b. Lock all doors and turn off lights if in lockdown due to an active shooter or similar emergency.
     c. Close all window curtains.
     d. Get all inside to safe location Kitchen area is best internal location.
     e. If a police officer or higher official arrives, they will assume command.
     f. Wait until notice of all is clear before unlocking doors.
     g. If safe to do so, move to the nearest evacuation point outside building (Pooky's Park), directly behind the Hoopa Tribal Education Building.

h. Do not leave site, unless it has been deemed safe by the person in command. Student Support Services (required for online classes)

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

Academic Support Information

- Academic support is available at Counseling and Advising and includes academic advising and educational planning, Academic Support Center for tutoring and proctored tests, and Extended Opportunity Programs & Services, for eligible students, with advising, assistance, tutoring, and more.

Behavior

- Students are expected to adhere to the Administrative Procedures (AP) and Board Policies (BP), and should familiarize themselves with AP 5530 (Student Conduct Code and Disciplinary Procedure), AP 5550 (Students Rights and Grievances), BP 5530 (Standards of Conduct), and BP (Student Complaints). These procedures and policies can be found on the CR website.

  These are my policies:

- Disruptive students will be asked to cease the disruption. Noncompliance will be followed by immediate dismissal from class. The student is then required to contact the instructor outside of class, subject to instructor availability, before returning to class.
- Missed exams and quizzes without an excuse will result in a zero for that exam or quiz respectively. At the instructor's discretion, a written excuse may be required. This includes exams missed due to removal from class due to disruptive behavior.
- Students found cheating, directly or indirectly, will earn a zero for that assignment or exam. This is a subjective call, based on my years of experience.

Required Materials

- Textbook title: Fundamentals of General, Organic, and Biological Chemistry
  - Edition: 8th, 4th, or 3rd
  - Author: McMurry
  - ISBN: 8th: 9780134015187, 4th: 0130418421, 3rd: 0139185178
- Scientific Calculator (cannot be a smart device).
- Various Lab Materials listed below and in the labs.
- Computer

Course Content:

- Law, theory, and hypothesis.
- Modeling of natural phenomena.
- Element, compound, pure substance and mixture.
- Measurements and uncertainty.
- Atomistic and compound models of matter.
- Periodic Table.
- Physical and chemical properties.
- Electron configurations.
- Ions.
- Atomic Weight and molar mass.
- Electron-dot structures and Lewis Structures.
- Molecular geometry and polarity.
- Stoichiometry and chemical equations.
- Energy, heat, and temperature.
- Elementary thermodynamics.
- States and Changes of State.
- Kinetic-molecular theory of matter.
- Ideal gas law.
- Acid, Bases, and Salts.
- Solutions and Aqueous systems.
- Nomenclature.

Additional Information

- Lecture: Lectures will focus on chapter materials in the order presented in the book. Students are expected to have read the chapter before lecture. Main points will be summarized and details discussed. Expect to spend a significant amount of time working through Chapter

Practice Problems during lecture. PowerPoint slides, although not required, will be made available through the LMS and can be examined before lecture.

- Laboratory: Lab activities are designed to reinforce or add to materials learned in lecture. Prepare for lab by reading relevant materials. You will need to purchase materials for the lab, as listed below.
- Lab Safety: The lab activities are designed to minimize dangers of performing lab activities. However it cannot be designed to eliminate them. Therefore it is the responsibility of each student to follow all safety protocols relevant to the lab.
- Instructor Drop: Students that miss more than one exam or who do not submit more than three lab assignments may be dropped from the course by the instructor before the withdrawal deadline. Extenuating circumstances will be considered but the instructor has the authority to make the final decision.
- Laboratory Materials: Many items must be purchased by the students to complete the labs. Students will be advised in advance for purchases. The list includes the following, and a few more items (inexpensive) may be added. It is assumed that common kitchen substances are at hand (butter, salt, utensils, etc).
    - Electronic balance that can measure down to 0.01 grams
    - 50-mL or 100-mL graduated cylinder
    - Digital candy thermometer
    - 3" x 5" notecard or business card
    - metric ruler (I prefer a clear one)
    - table salt, butter, sugar
    - old pot, pan, jars, plastic bottles, cups
    - safety goggles
    - vinegar
    - baking soda
    - Mentos
    - Red cabbage or wide range pH paper
    - 50 pennies minted after 1984
    - 50 dimes minted
    - Epsom salts
    - Lab packet of chemicals sent by CR
    - Ingenuity

Necessary Computer Skills

- Online courses require adequate computer skills. You must be able to:
    - navigate the course Learning Management System (Canvas)
    - receive and respond to your CR email (this means you need to CHECK your CR email!)
    - download and upload files to Canvas
    - make pdf files of images that show work that can be easily read
    - use a phone or digital camera to upload "selfies" for lab assignments
    - use a word processor program (such as Microsoft Word or Google Docs),
    - use a webcam and computer microphone
    - It is your responsibility to meet the technological demands of the course, which may often include troubleshooting technological adventures.

Technology Requirements (computer, other hardware, and software)

Computer and Hardware Requirements:

- Computers: You should plan on doing the majority of your work (especially exams and assignments) from a reasonably recent model notebook or desktop computer (Mac or PC). Do NOT plan to participate in this class solely from a portable device.
- Portable Devices: You can use recent model portable devices (such as Android or iOS phones & tablets) for some things in this class. If you do decide to use your portable device for some of your class work, use the free Canvas app (called "Canvas by Instructure") available in iTunes (for iOS) and the Google Play Store (for Android).
    - Do not try to connect to Canvas using a web browser on a portable device. Your experience with Canvas will be a lot better using the app.
- Webcam: You may need to record videos of yourself for this class. Many computers have a built in webcam. If yours does not, you will need to purchase (or borrow) a webcam. There are inexpensive options available that plug into a USB port.
- Smartphone camera or other digital camera: You will need to be able to document your lab work through digital "selfies," then upload those images to canvas.
- High-speed internet: You should have high-speed internet (such as broadband) service from cable, DSL, or satellite providers as there are video lectures as part of this course, and they require this speed. You need to have reliable access to the internet for the duration of the course. Anticipate problems with your computer and internet access (including power outages) by not waiting until the last minute to submit assignments. It is your responsibility to meet the class deadlines. It is suggested that your download and upload speeds are a minimum of 100Mbps and 8Mbps respectively (find out your speed at speedtest.net).
- Software Requirements: It is important that you set yourself up for success by making sure that you have the necessary software in order to participate fully in the course. Please make sure that you have the following set up by the first week of class:
    - Browsers - You will need to use the most recent version of one of the following browsers in order to best access the course and activities; Mozilla Firefox (10 or higher), Chrome (54.0.2840.99 m or higher), or Safari (1.2 or higher). Do not use Internet Explorer as it does not work properly with Canvas.
    - Word Processing Software - You may need Microsoft Word or a compatible software program in order to create Word or Word compatible documents.
    - All students at CR have access to Office 365 (Word, PowerPoint, Excel, and OneNote) free with a valid @mycr.redwoods.edu or @redwoods.edu email account. Go to https://office.com/getoffice365 to get started.
    - There are free options such as Google docs (this requires a gmail account) or OfficeLibre.
    - Acrobat Reader – Adobe Acrobat Reader DC is a free program that will allow you to read and download pdf files.

Contact Information

- If you have a question or concern, please Please PLEASE get ahold of me. I am very available to help you, as long as you are polite and respectful. Here are some guidelines to follow:
    - Might your question benefit other people in the class? Then please post it in the "Questions" discussion board. This is for student questions and responses. I will monitor the questions.
    - Is your message private? Please send me a message in Canvas, using the messaging tool (just click on INBOX button in the left toolbar). You are also welcome to email me (tony-

sartori@redwoods.edu), but I get a lot of emails, and I don't want your message to get lost. If you do email me, always include "CHEM-2" in your subject line.

- Remember, email is not a good way to have a conversation about complex issues, but it can be done. For problems, it helps if you attach a photo of your work, line by line, with each line numbered. That way I can easily say line two is OK but three should be….
- Regardless of how you reach out, if you don't hear back from me within 48 hours of sending your message, you can assume I did not receive it…so please resend. Finally, always be polite. In an online environment, this is called Netiquette. Just be respectful to your classmates and be considerate, and forgiving in all of your posts in the discussion forums. Adhere to the same standards of behavior online that you should follow in real life.
- Note: I reserve the right to establish additional policies, as I deem necessary to provide you with the best learning environment possible.

Course Updates/Announcements/Emails/Inbox

- I expect students to check their CR email, their inbox, and announcements for course information, Monday through Thursday.

Course delivery:

Lecture and labs are 100% online. Students will be able to interact with the instructor using TechConnectZoom. Lectures and labs will be given and recorded using this technology four days a week. The morning lectures will be Mon, Tues, Wed, Thu, 10am-11:45am. The evening lectures will be 6pm-7:45pm on the same days. The morning lectures will cover the same material as the evening lectures. Labs will be discussed during the TechConnectZoom sessions, usually on Tuesdays.

Viewing the lectures is required. Viewing can be done three ways: live through TechConnectZoom in Canvas, recordings through TechConnectZoom in Canvas (Cloud Recordings), and through the modules that have links to lectures from 2021. The best is live, so that you can ask questions. The same lecture can then be watched in the Cloud Recording by all students. Some of the recordings begin with an icon of a video cam with a line through it, which will go away. You can "fast forward" through that section. The lectures with links in the modules are shorter since there is no audience. However, ignore all references to dates material covered on exams. Many comments are corrects ("I like lists"), but some may have referred to that particular semester ("this will not be on the exam"). If you want to know if some comment is true for this semester, send me an email with the question.

Other parts of the course are organized into modules. There are different types of modules, as listed below:

- Introduction
- Module 1 – Matter
- Module 2 – Measurements
- Module 3 – Atoms and the Periodic Table
- Exam 1
- Module 4 – Ionic Compounds
- Module 5 – Molecular Compounds
- Module 6 – Chemical Reactions – Classification and Stochiometry
- Exam 2
- Module 7 – Chemical Reactions – Energy, Rates, Equilibrium
- Module 8 – Gases, Liquids, Solids

- Module 9 – Solutions
- Exam 3
- Module 10 – Acids and Bases
- Module 11 – Nuclear Chemistry
- Module 12 – Organic Chemistry
- Exam 4
- Final Exam
- Resources

Modules 1 – 12 are “chapter” modules, usually divided into three categories:

- Lectures Videos and Powerpoint Presentation (recordings from 2021, ppt from publisher)
- Homework, Discussion, Quiz (discussion and quiz have graded work)
- Lab (contains material for the lab like videos or descriptions and have graded work.

The Exam Modules will have a study guide, a practice exam available a week before the exam, a discussion that requires participation, the exam, and exam submission (this is where your answers are submitted). The practice exams are short answer (often, calculations, lists, descriptions, etc.).

The Final Exam module will have a practice exam. The practice final is multiple choice, as if the real final. Answers are not provided for the practice final.

Caveat

- The terms of this syllabus may be changed during the course at the discretion of the instructor.