Course Syllabus
Spring 2024
CHEM 1312-003
General Chemistry II

Course Description: Equilibrium, kinetics, redox, descriptive chemistry and radiochemistry.

Number of Credit Hours: 3 semester hours

Course Prerequisites and Corequisites: Prerequisites: CHE 1311, 1111L, and MTH 1314. Corequisite: CHEM 1112L if enrolled in other courses on campus.

Program Learning Outcomes: There are no specific program learning outcomes for this major addressed in this course. This course is a general education core curriculum course and a service course.

Core Objectives (CO):
1. Critical Thinking: to include creative thinking, innovation, inquiry and analysis, evaluation and synthesis of information.
2. Communication Skills: to include effective development, interpretation and expression of ideas through written, oral, and visual communication.
3. Empirical and Quantitative Skills: to include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.
4. Teamwork: to include the ability to consider different points of view and to work effectively with others to support a shared purpose or goal.

Course Objective: To provide students with an explanation of the basic principles of chemistry and to apply these principles to problem solving involving critical thinking.

Student Learning Outcomes: Upon completion of this course, the students are expected to
- apply chemistry concepts using critical thinking skills and the scientific method to analyze and evaluate information to reach conclusions within problem sets and lab experiments.
- use communication skills to demonstrate their interpretation and analysis of scientific data.
- apply logic, quantitative reasoning, and pattern recognition to analyze and evaluate numerical data/observable facts to reach conclusions within problem sets and lab experiments.
- demonstrate the ability to cooperate within groups to gather results of an experiment, analyze data, and draw conclusions using communication skills.

This course meets educator preparation standards for one or more certification programs; a complete listing of all the educator preparation standards this course meets can be found at: https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx
General Chemistry II
CHEM 1312 – 003
January 18, 2024 - May 10, 2023

<table>
<thead>
<tr>
<th>Name</th>
<th>Chemistry and Biochemistry</th>
</tr>
</thead>
<tbody>
<tr>
<td>Department</td>
<td></td>
</tr>
<tr>
<td>Faculty Member</td>
<td>Dr. Fry</td>
</tr>
<tr>
<td>Email</td>
<td><a href="mailto:frydr@sfasu.edu">frydr@sfasu.edu</a></td>
</tr>
<tr>
<td>Office</td>
<td>Math 120</td>
</tr>
<tr>
<td>Office Hours</td>
<td>MW 1-2:30 and TR 9-10:30</td>
</tr>
<tr>
<td>Departmental Phone Number</td>
<td>936-468-3606</td>
</tr>
<tr>
<td>Class Time</td>
<td>TR 11-12:15 and R 2-2:50</td>
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<tr>
<td>Class Location</td>
<td>Math Room 130</td>
</tr>
</tbody>
</table>

**CATALOG DESCRIPTION**: General Chemistry II (CHEM 1312) – Equilibrium, kinetics, redox, and descriptive chemistry.

**COURSE DESCRIPTION:**
Introductory Chemistry. Introduction to the principles and concepts of chemical thought. Co-requisite: CHEM 1112 L. Prerequisite: eligibility for MTH 1314. (Algebra). This course is intended for non-chemistry majors. Chemistry and science majors need to take CHEM 1311/1312.

This course is for 3 credits and typically meets for 300 minutes each week for five weeks plus meets for a 2-hour final examination. Students have significant daily reading and homework assignments involving critical thinking and quantitative reasoning. Students are tested over the material via quizzes and several exams during the semester including a comprehensive final exam. These activities average at a minimum 12 hours of work each week to prepare outside of classroom hours.

**PREREQUISITES**: CHEM 1311 and 1111L

**TEXT AND MATERIALS:**
1. Any chemistry textbook can be used as a resource to supplement the PowerPoint slides. The following textbooks will work. **ONLY one is required.**
   a. Burge, Julia; Chemistry, any edition McGraw Hill (book only; access to ALEKS HW system is not needed)
   b. OpenStax chemistry 2e (Chemistry 2e – OpenStax): [https://openstax.org/details/books/chemistry-2e](https://openstax.org/details/books/chemistry-2e). This is a free downloadable textbook.
2. Scientific calculator (non-graphing and non-programmable); for example, SHARP EL-501WBBK, CASIO 115, Texas Instrument 30 XIIS. No programming or graphing calculators are to be used in exams and/or quizzes.
3. **Access to the internet and specifically access to** [www.darrellrfry.com/moodle](http://www.darrellrfry.com/moodle). You must be able to use the SAFE EXAM Browser Mode from whatever device you are using.
4. An app on your phone that coverts pictures into pdf files. Fry uses Adobe Scan.
5. A 3-subject spiral notebook—to write out your answers for the electronic homework such that you can do well on the On-Line Quizzes.
COURSE OBJECTIVES: To provide students with an understanding of the general principles of inorganic chemistry and the ability to apply these principles to problem solving.

STUDENT LEARNING OUTCOMES: The student is expected to master and apply the following concepts to problem solving:

- Principles of reaction rates: reaction rates and concentration, reactant concentration with time, and reaction mechanisms.
- Principles of equilibrium: the equilibrium constant expression, determination of equilibrium constants, applications of the equilibrium constant to problem solving, and the effect of changes in conditions upon an equilibrium system.
- Principles of solubility: precipitate formation, use of the solubility product constant (K_sp) to predict solubility, dissolution of precipitates, and qualitative analysis.
- Principles of thermodynamics: enthalpy and enthalpies of formation, the first law of thermodynamics, entropy and the second law of thermodynamics, the third of thermodynamics, and free energy.
- Principles of electrochemistry: voltaic and electrolytic cells, effect of concentration on cell voltage, standard cell potentials, and batteries.

On-Line Support: [http://d2l.sfasu.edu](http://d2l.sfasu.edu)

COURSE CALENDAR: Course Material from the text will be covered in the following order.

<table>
<thead>
<tr>
<th>Week Starting on Monday</th>
<th>Content</th>
<th>On-line Quiz to Complete</th>
<th>Exam</th>
</tr>
</thead>
<tbody>
<tr>
<td>January 15th</td>
<td>A-Review Material</td>
<td></td>
<td></td>
</tr>
<tr>
<td>January 22nd</td>
<td>B-Chemical Kinetics</td>
<td></td>
<td></td>
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<tr>
<td>January 29th</td>
<td>B-Chemical Kinetics</td>
<td>On-line Quiz 1—Due Jan 28th before midnight</td>
<td></td>
</tr>
<tr>
<td>February 5th</td>
<td>C-Equilibrium</td>
<td>On-line Quiz 2—Due February 11th before midnight</td>
<td></td>
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<tr>
<td>February 12th</td>
<td>C-Equilibrium</td>
<td></td>
<td></td>
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<tr>
<td>February 19th</td>
<td>D-Acid Base Review</td>
<td></td>
<td></td>
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<tr>
<td>February 26th</td>
<td>D-Acid Base Review</td>
<td>On-line Quiz 3—Due March 3rd before midnight</td>
<td></td>
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<tr>
<td>March 4th</td>
<td>E-Acid Base Equilibria</td>
<td>Proctored Exam March 7th</td>
<td></td>
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<tr>
<td>March 14th</td>
<td>SPRING BREAK</td>
<td></td>
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<tr>
<td>March 18th</td>
<td>E-Acid Base Equilibria</td>
<td>On-line Quiz 4—Due March 24th before midnight</td>
<td></td>
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<tr>
<td>March 25th</td>
<td>E-Acid Base Equilibria</td>
<td>On-line Quiz 5—Due March 31st before midnight</td>
<td></td>
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<tr>
<td>April 1st</td>
<td>F-Solubility Equilibria</td>
<td>On-line Quiz 6—Due April 7th before midnight</td>
<td></td>
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<tr>
<td>April 8th</td>
<td>G-Thermochemistry</td>
<td>Proctored Exam April 11th</td>
<td></td>
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<tr>
<td>April 15th</td>
<td>G-Thermochemistry</td>
<td>On-line Quiz 7—Due April 21st before midnight</td>
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<tr>
<td>April 22nd</td>
<td>H-Electrochemistry</td>
<td></td>
<td></td>
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<tr>
<td>April 29th</td>
<td>I-Nuclear Chemistry</td>
<td>On-line Quiz 8—Due May 5th before midnight</td>
<td></td>
</tr>
<tr>
<td>May 6th</td>
<td>Final Exam Week</td>
<td>Proctored exam May 7th</td>
<td></td>
</tr>
</tbody>
</table>
**Grading Policy:**
Grades are based upon performance. The table below details the assessments used, their dates and the points associated with each.

<table>
<thead>
<tr>
<th>Assessment</th>
<th>Points Each</th>
<th>Total Points</th>
<th>Dates/Times Available</th>
</tr>
</thead>
<tbody>
<tr>
<td>Electronic Homework</td>
<td>There are approximately 65 homework assignments. The lowest 5 will be dropped.</td>
<td>100</td>
<td>Grade take May 5th at midnight. However, students must complete specific homework assignments prior to taking On-Line Quizzes.</td>
</tr>
<tr>
<td>On-Line Quizzes</td>
<td>20 each; drop the lowest</td>
<td>140</td>
<td>Opens Monday and must be completed before Sunday at midnight.</td>
</tr>
<tr>
<td>Weekly Proctored Quizzes</td>
<td>10 each; drop the lowest</td>
<td>100</td>
<td>Wednesday 6 until ~ 6:15</td>
</tr>
<tr>
<td>Exam 1-proctored</td>
<td></td>
<td>150</td>
<td>MARCH 7th</td>
</tr>
<tr>
<td>Exam 2-proctored</td>
<td></td>
<td>150</td>
<td>APRIL 11th</td>
</tr>
<tr>
<td>Final Exam-proctored</td>
<td></td>
<td>150</td>
<td>MAY 7th 10:30-12:30</td>
</tr>
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</table>

The key to doing well in the course is practicing the **electronic homework**. The course has 65 separate electronic quizzes pulling from around 500 different pools of questions with each pool having at least 10 unique questions. Each electronic homework is carefully labeled with the topic which it covers. The electronic homework provides immediate feedback and (most often) a detailed explanation for how to work the problem/concept. Moreover, different variations of the same problem can be accessed immediately after viewing the explanation. **To make the most of the homework, keep a spiral notebook with your work from each homework.** When you start a new homework, make a note of the homework number and the topic. For problems that require work, work it out in your spiral notebook. Write out definitions in your spiral notebook! Your spiral notebook should contain how to work every single problem given on the On-Line Quizzes. Moreover, if you document your work with some care, it will be dead easy for you to find the answer to the problems/questions given on the On-Line Quizzes. The grade for the electronic homework will be taken May 5th and is worth 100 points; HOWEVER, in order to take the On-Line Quizzes, you must have completed the certain electronic homework assignments (see the moodle).

The remaining assessment mechanisms use time as a factor. Studies have shown that students who know the material better take less time doing the work! The homework does not have a time factor; and homework gives you a chance to practice the work. Practice the work with the understanding that time is a factor!

The **On-Line Quizzes** will be given at darrellrfry.com/moodle in the safe exam browser mode. Again, the On-Line Quizzes are time limited. While using the safe exam browser mode all internet browsers (except the one on moodle) will be closed. These on-line quizzes will open Monday around midnight and close Sunday night around midnight. Students must complete the entire quiz prior to the quiz closing. Fry strongly suggests finishing the quizzes Friday or Saturday—and leaving Sunday open to rest. Late work, or missed work, will receive a grade of
zero—so plan your time accordingly. The On-Line Quizzes are NOT proctored; however, you MUST NOT log into the moodle a second time while taking the On-Line Quizzes. Using the Safe Exam Browser mode allows Fry (and the Dean of Students) to view who logged into the moodle homework while taking the On-Line Quiz. If you log into the moodle homework while taking the On-Line Quiz, you will be given a zero for the On-Line Quiz and reported to the Dean of Students! This is cheating! --Now, while taking the On-Line Quiz, you may use your own printed out notes, note cards, or your stupid spiral notebook which I suggested above. BUT you cannot (must not) log into the moodle. Also, you must do the quiz on your own without outside help. Eight On-Line Quizzes will be taken; the lowest one will be dropped.

The format of the Weekly Proctored Quizzes is described as follows. Students are required to attend every Thursday starting at promptly at 2pm. Closed note, proctored quizzes that focus on students showing their work will be given during this time. TIME is a factor-the quizzes should only take about 10 minutes or so. The point of the Weekly Proctored Quizzes is for students to show their work! Answers without work will be counted wrong and incorrect work will be penalized. Most often, a video will be posted the week before covering what specific problem type will be given during the Weekly Proctored Quiz. In order to do well, practice before hand on the quiz topic. Each Weekly Proctored Quiz is worth 10 points; the lowest 2 will be dropped.

Exam 1, Exam 2 and the Final Exam will be proctored in the same way as the Weekly Proctored Exams. Again, time is a factor. Practice prior to the exams in order to maximize your chances of doing well. Like the Weekly Proctored Quizzes, the focus is on showing the work for the problems. Again, practice the problems/questions in the same fashion as you will show on the Exams for best results.

NO Make up exams, homework, proctored or weekly quizzes will be given.

- If an exam is missed, then the comprehensive final will replace the missed exam. Late exams will not be accepted. Time is a factor for the exams.
- On-line quizzes cannot be made up; instead, lowest score will be dropped. The On-Line Quizzes are available for an entire week. Late on-line quizzes will not be accepted. Time is a factor for the On-Line Quizzes
- The Weekly Proctored Quizzes cannot be made up; instead, the lowest two will be dropped. Late weekly proctored quizzes will not be accepted. Time is a factor for the Weekly Proctored Quizzes.
- All of the homework is due May 5th by midnight; however, students must keep up with the homework in order to take the On-line Quizzes. No make ups will be given for the homework. Late work will not be accepted.

Grading scale - A= 90 - 100%; B= 80 - 89%; C= 70 - 79%; D= 60 - 69%; F= below 60%

PLEASE NOTE, EXAM 8 IS GIVEN DURING DEAD WEEK.

ATTENDANCE POLICY:
Students must be completing homework assignments by the due date to be considered actively participating in the class. Attendance is required for all exam dates and will be given during the assigned times unless other arrangements are approved by the instructor prior to the scheduled exam day. There are no make-
ups exams for notifications given the day of the exam. Students registered for face-to-face modality sections are required to attend all lecture sessions.

**CODE OF STUDENT CONDUCT AND ACADEMIC INTEGRITY (10.4):**

The Code of Student Conduct and Academic Integrity outlines the prohibited conduct by any student enrolled in a course at SFA. It is the responsibility of all members of all faculty, staff, and students to adhere to and uphold this policy.

Articles IV, VI, and VII of the new Code of Student Conduct and Academic Integrity outline the violations and procedures concerning academic conduct, including cheating, plagiarism, collusion, and misrepresentation. Cheating includes, but is not limited to: (1) Copying from the test paper (or other assignment) of another student, (2) Possession and/or use during a test of materials that are not authorized by the person giving the test, (3) Using, obtaining, or attempting to obtain by any means the whole or any part of a non-administered test, test key, homework solution, or computer program, or using a test that has been administered in prior classes or semesters without permission of the Faculty member, (4) Substituting for another person, or permitting another person to substitute for one’s self, to take a test, (5) Falsifying research data, laboratory reports, and/or other records or academic work offered for credit, (6) Using any sort of unauthorized resources or technology in completion of educational activities.

Plagiarism is the appropriation of material that is attributable in whole or in part to another source or the use of one’s own previous work in another context without citing that it was used previously, without any indication of the original source, including words, ideas, illustrations, structure, computer code, and other expression or media, and presenting that material as one’s own academic work being offered for credit or in conjunction with a program course or degree requirements.

Collusion is the unauthorized collaboration with another person in preparing academic assignments offered for credit or collaboration with another person to commit a violation of any provision of the rules on academic dishonesty, including disclosing and/or distributing the contents of an exam.

Misrepresentation is providing false grades or résumés; providing false or misleading information in an effort to receive a postponement or an extension on a test, quiz, or other assignment for the purpose of obtaining an academic or financial benefit for oneself or another individual or to injure another student academically or financially.

Any student found cheating will be subject to the penalties as stated in the Student Code of Conduct handbook; including but not limited to a score of zero on exam, expulsion from the class or expulsion from the University.

**WITHHELD GRADES SEMESTER GRADES POLICY (5.5):**

Ordinarily, at the discretion of the instructor of record and with the approval of the academic chair/director, a grade of WH will be assigned only if the student cannot complete the course work because of unavoidable circumstances. Students must complete the work within one calendar year from the end of the semester in which they receive a WH, or the grade automatically becomes an F. If students register for the same course in future terms the WH will automatically become an F and will be counted
as a repeated course for the purpose of computing the grade point average. For additional information, go to https://www.sfasu.edu/policies/course-grades-5.5.pdf.

The circumstances precipitating the request must have occurred after the last day in which a student could withdraw from a course. Students requesting a WH must be passing the course with a minimum projected grade of C.

STUDENTS WITH DISABILITIES:
To obtain disability related accommodations, alternate formats and/or auxiliary aids, students with disabilities must contact the Office of Disability Services (ODS), Human Services Building, and Room 325, 468-3004 / 468-1004 (TDD) as early as possible in the semester. Once verified, ODS will notify the course instructor and outline the accommodation and/or auxiliary aids to be provided. Failure to request services in a timely manner may delay your accommodations. For additional information, go to http://www.sfasu.edu/disabilityservices/.

STUDENT WELLNESS AND WELL-BEING:
SFA values students’ overall well-being, mental health and the role it plays in academic and overall student success. Students may experience stressors that can impact both their academic experience and their personal well-being. These may include academic pressure and challenges associated with relationships, emotional well-being, alcohol and other drugs, identities, finances, etc.

If you are experiencing concerns, seeking help, SFA provides a variety of resources to support students’ mental health and wellness. Many of these resources are free, and all of them are confidential.
ON-CAMPUS RESOURCES:
The Dean of Students Office (Rusk Building, 3rd floor lobby)
www.sfasu.edu/deanofstudents
936.468.7249
dos@sfasu.edu

SFA Human Services Counseling Clinic Human Services, Room 202
www.sfasu.edu/humanservices/139.asp
936.468.1041

The Health and Wellness Hub “The Hub”
Location: corner of E. College and Raguet St.
To support the health and well-being of every Lumberjack, the Health and Wellness Hub offers comprehensive services that treat the whole person – mind, body and spirit.
Services include:
• Health Services
• Counseling Services
• Student Outreach and Support
• Food Pantry
• Wellness Coaching
• Alcohol and Other Drug Education
www.sfasu.edu/thehub
936.468.4008
thehub@sfasu.edu

CRISIS RESOURCES:
• Burke 24-hour crisis line: 1.800.392.8343
• National Suicide Crisis Prevention: 9-8-8
• Suicide Prevention Lifeline: 1.800.273.TALK (8255)
• johCrisis Text Line: Text HELLO to 741-741

This course meets educator preparation standards for one or more certification programs; a complete listing of all the educator preparation standards this course meets can be found at: https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx
Other Policies:

- Make your life easy and get a 3 subject spiral notebook for the homework.
- Do not email Fry through the D2L system. Instead, email him at frydr@sfasu.edu from your jack’s account. To do this, get out of D2L, open up a mail program, and email him.
- For the On-Line Quizzes, students must download and use the safe exam browser. Moreover, students must not collude with others during the On-Line Quiz nor may they access the moodle website while taking the On-Line Quiz. Please note, the Moodle software allows the site owner to see when and from what IP address an individual is accessing items (quizzes, homework, exams, everything).
- Time is a factor in the quizzes and exams. Practice so that you can do well.
- Work must be shown for the Proctored Weekly Quizzes and the Exams (and the final). Answers without work will be counted as incorrect. Incorrect work will be penalized.
- If you have a problem with Dr. Fry, talk to him FIRST!
- Do not disrupt class by
  - Walking in front of the classroom
  - Constantly sniffing—bring some Kleenex and quietly blow your nose
  - Answering your phone
  - Talking to others (or yourself) while in class