Course Syllabus
CHEM 1112
General Chemistry II Laboratory

Course Description: Kinetics, spectrophotometry, quantitative/qualitative experiments.

Number of Credit Hours: 1 semester hour

Course Prerequisites and Corequisites: Prerequisites: CHEM 1311/1111. Co-requisite: CHEM 1312.

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.

General Education Core Curriculum Objectives: The Texas Higher Education Coordinating Board has identified six core learning objectives: Critical Thinking Skills, Communication Skills, Empirical and Quantitative Skills, Teamwork, Personal Responsibility, and Social Responsibility. SFA is committed to the improvement of its general education core curriculum by regular assessment of student performance on these six objectives. Chemistry core courses only develop the first four core learning objectives: critical thinking, communication, empirical and quantitative, teamwork.

Course Objective: To provide students with an explanation of the basic concepts, laws and theories of chemistry and to apply them to chemistry problems through a laboratory setting. The student will demonstrate basic laboratory techniques and be able to apply them in a practical chemistry setting.

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. (COs 1 & 3)
- use communication skills to demonstrate their interpretation and analysis of scientific data and express their ideas and thoughts to team members. (CO 2)
- apply logic, quantitative reasoning, and pattern recognition to analyze and evaluate numerical data/observable facts to reach conclusions within problem sets and lab experiments. (COs 1 & 3)
- demonstrate the ability to cooperate within groups to gather results of an experiment, analyze data, and draw conclusions using communication skills. (COs 2 & 4)

Outline of Topics (approximate course time):
Getting Started (10%)
Laboratory Safety (10%)
ph of Common Materials (10%)
Reaction Order and Rate Laws (10%)
Equilibrium and Le Chatelier’s Principle (10%)
Acid-Base Chemistry (10%)
Determination of the K_a of a Weak Acid (10%)
Using Buffers (10%)
Electrochemical Cells and Cell Potential (10%)
Nuclear Chemistry (10%)
TEXT AND MATERIALS:

Students are expected to register with Science Interactive and purchase a lab kit. After you go into the course through Brightspace by D2L, select the “Getting Started” experiment. You will purchase access to Science Interactive and the lab kit by clicking “Purchase Kit” button at the top right of the first page of the experiment. You must purchase the kit and access to Science Interactive during the first week of classes to make certain you have the kit in time for experiment 3. You will need the kit by the third due date for experiments. Students who do not purchase the lab kit within the first week of classes will not be given extensions for experiments due to kit issues. If you do not purchase the kit, you will not be able to complete the experiments or pass the course.

Students will go through Brightspace by D2L to access all the labs. A non-programmable, scientific calculator is required for the course. Communication for lab will be sent through SFA email.

COURSE REQUIREMENTS:

Experiments – There will be 10 experiments to be completed. “Getting Started” is worth 10 points while all the other experiments are worth 35 points each. The experiments consist of questions based on the content and data analysis based on data collected and uploaded.

Method of Evaluation: The final grade will be based upon percentage of points obtained in the following:

<table>
<thead>
<tr>
<th>Experiment</th>
<th>Points</th>
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<tbody>
<tr>
<td>Getting Started</td>
<td>10 pts</td>
</tr>
<tr>
<td>9 experiments (35 pts each)</td>
<td>315 pts</td>
</tr>
<tr>
<td>Final exam</td>
<td>80 pts</td>
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Total 405 pts (Proctorio software using Google Chrome browser required)

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

COURSE CALENDAR:

This lab course is for 1 credit and typically requires 150 minutes a week for 15 weeks. Students have weekly reading and experiments to prepare for lab each week and data analysis involving
critical thinking and quantitative reasoning. Students are expected to prepare prior to each lab (literature and concepts), conduct experiments, and report results. Students have required academic components and deliverables: written work questions answered and lab results). These activities, inclusive of the lab expectations and academic components, average a minimum of 6 hours of work each week.

<table>
<thead>
<tr>
<th>Lab Content</th>
<th>Due Date</th>
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<tbody>
<tr>
<td>Lab 1: Getting Started</td>
<td>Feb 2</td>
</tr>
<tr>
<td>Lab 2: Laboratory Safety</td>
<td>Feb 9</td>
</tr>
<tr>
<td>Lab 3: pH of Common Materials</td>
<td>Feb 16</td>
</tr>
<tr>
<td>Lab 4: Reaction Order and Rate Laws</td>
<td>Feb 23</td>
</tr>
<tr>
<td>Lab 5: Equilibrium and Le Chatelier’s Principle</td>
<td>Mar 1</td>
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<tr>
<td>No labs due during mid-term week and spring break</td>
<td>Mar 8 Mar 15</td>
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<tr>
<td>Lab 6: Acids-Base Chemistry</td>
<td>Mar 22</td>
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<td>Lab 7: Determination of the Ka of a Weak Acid</td>
<td>Mar 29</td>
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<td>Lab 8: Using Buffers</td>
<td>April 5</td>
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<td>Lab 9: Electrochemical Cells and Cell Potential</td>
<td>April 12</td>
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<tr>
<td>Lab 10: Nuclear Chemistry</td>
<td>April 19</td>
</tr>
<tr>
<td><strong>FINAL EXAM in D2L (Proctorio software using Google Chrome browser required)</strong></td>
<td>April 26 @ 5pm – final opens April 26 @ 11:59pm – final closes</td>
</tr>
</tbody>
</table>

**ATTENDANCE POLICY:**
This course is online meaning there are no required face-to-face meetings. The assignments and exam will be due during the assigned times unless other arrangements are approved by the instructor prior to the due date. There are no make-up activities for notifications given the day of the activity.

**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](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/](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](https://sfasu.edu/docs/jacksteach/jacksteach-standards-alignment-chart.xlsx)