

SYLLABUS for CHEM 1411 fall 2018

(General Chemistry I)

Tentative. Subject to change. Changes will be announced in class.

Brief description of the course

CHEM 1411 is the first semester of the two-semester general chemistry sequence that aims to lay the foundation of in depth studies in chemistry. This semester we will first learn about elements as they are organized in the periodic table then proceed to learning about atomic structure and how atoms combine into ions or molecules. Then we will explore how compounds react with each other and study the energetics of chemical reactions. We will close the semester with learning about chemical bonding and molecular structure. With these studies, we will learn how to model matter and chemical processes to use them in our every-day life.

Semester Goals:

- Develop interest in science, and in learning science.
- While learning about science learn to value scientific literacy for its impact on society.
- Describe and explain the relationship between structure and reactivity of molecules.
- Develop critical thinking and problem-solving skills as applied to chemistry and science in general.
- Be able to interpret the chemical significance of new information and ideas acquired in the future.
- Develop and use teamwork abilities (among them communication).
- Be able to identify important resources for their own subsequent learning.

Please note that a grade of C or better in CHEM 1411 is a mandatory prerequisite for CHEM 1412.

Lectures: Monday-Wednesday-Friday

Early Bird Section: 9:00 AM to 9:50 AM, CFS 103

Late Morning Section: 11:00-11:50AM, CFS 103

Instructor: Dr. Timea Gerczei Fernandez

Office Hours for Dr. Gerczei Fernandez

Location: CFS 310

Times: after class or please make an appointment via e-mail.

Required texts and equipment:

- 1) Brown, LeMay, Bursten, Murphy, Woodward and Stoltzfus. Chemistry: The Central Science, 13th Edition (ISBN-13: 978-0321910417). Older editions are

good too, but the 13th edition will be our reference book. An eText is available for about 50% of the cost of the printed edition on Coursesmart.com.

- 2) Calculator: recommended type is TI-30X.
- 3) Recommended (if available): a printout of the relevant lecture Powerpoint File or a portable computer device such iPad or small laptop for viewing PowerPoint lecture files or for straightforward note-taking.
- 4) **iClicker Remote or iclicker App** (“Reef Polling”) for smartphones. The cost of the app for one semester is \$15.
- 5) Recommended websites:
 - a. <https://openstaxcollege.org/textbooks/chemistry>
 - b. http://preparatorychemistry.com/Bishop_Atoms_First.htm
 - c. <http://2012books.lardbucket.org/books/principles-of-general-chemistry-v1.0/>

General information:

1. *Attendance:*
 - a. **Your attendance at all scheduled class meetings and laboratory sessions is required.** Each class (iClicker questions) and laboratory session will have activities that contribute toward your grade. Moreover, *I'm required per University Policy to record attendance on each class. This record will be forwarded to the University and is used for Financial Aid and other purposes.*
 - b. If you have to miss class due to a valid reason (severe weather, illness, death in the family) please make sure you contact me via e-mail. If you contact me in this manner I will not count your missed in-class activities against you.
2. *Homework:* Online homework problems will be assigned to help you master the concepts learned in class using Blackboard or on paper. These problems should take you 30-60 min to complete. Generally, you will have a week to complete these problems. **Homework assignments will contribute 7.5% toward your grade.**
3. *Lecture activities (iClicker):* You are required to bring your functioning iClicker or Reef app to each lecture to participate in lecture activities. iClicker questions will help you prepare for the exams and contribute to your grade. **iClicker scores will contribute 7.5% toward your grade.**
4. *Exams:* Exam will last 40-50min and consist of multiple-choice questions, short-answer questions and calculations.
 - a. Chapter objectives
 - b. In-class problems
 - c. Homework problems
 - d. Problems assigned during review sessions

Laboratory: The laboratory portion of this course counts for 20% of the overall grade. In order to make a C or higher in this course (which is the prerequisite for CHEM 1412), you must earn at least a C in both the lecture portion of the course

AND in the laboratory portion of the course. See your laboratory syllabus for details regarding the laboratory portion of the course.

GRADING POLICY

Percentages are distributed as shown below. Letter grades are calculated from percentages according to the cutoff values shown below. **There is no extra credit in this course.**

Letter Grade	Final Average
A	90 – 100%
B	80 – 89%
C	70 – 79%
D	60 – 69%
F	< 60%

A weighted percentage will be used to determine the overall course grade.

Homework and iClicker scores together are worth as much as an exam.

Homework	7.5%
iClicker Scores	7.5%

Your worst exam score is dropped (NOT including the Final).

Exams 1, 2, 3 and 4	45%
Final Exam (comprehensive)	20%
Laboratory	20%

COURSE SCHEDULE (tentative)

<u>Week</u>	<u>Subject</u>	<u>Text Chapter</u>
Jan 17	Matter and Measurements	1
Jan 22	Matter and Measurements and Atoms, Molecules, Ions	1, 2
Jan 29	Atom, Molecules and Ions	2
Feb 5	Reactions and Stoichiometry	3
Feb 12	Reactions and Stoichiometry	3
Feb 19	Exam 1 (Chapters 1, 2 and 3) <i>Exam on Feb 23; Review session Feb 21</i> Reactions in Aqueous Solutions	4

Feb 26	Reactions in Aqueous Solutions, Thermodynamics	4, 5
March 5	Thermodynamics	5
March 12	Spring Break	
March 19	Exam 2 (Chapters 4 and 5) <i>Exam on March 23; Review session March 21</i> Electronic Structure of Atoms	6
March 26	Electronic Structure of Atoms	6
April 2	Periodic Properties of Elements	7
April 9	Periodic Properties of Elements	7
April 16	Exam 3 (Chapters 6 and 7) <i>Exam on April 20; Review session April 18</i> Basic Concepts of Chemical Bonding	8
April 23	Basic Concepts of Chemical Bonding Molecular Geometry and Binding Theories	8, 9
April 30	Molecular Geometry and Binding Theories Exam 4 (Chapters 8 and 9) <i>Exam on May 4; Review session May 2</i>	9
May 9 Exam Times	Final Exam - Cumulative <i>Early Bird Section: 9:30-11:30 CFS 103</i> <i>Late Morning Section: 12:00-2:00PM CFS 103</i>	

UNIVERSITY POLICIES

Please follow the links below to review University Policies that apply to this course:

<http://www.shsu.edu/syllabus/>

<http://www.shsu.edu/dept/dean-of-students/policies/>

Academic Dishonesty

All students are expected to engage in all academic pursuits in a manner that is above reproach. Students are expected to maintain honesty and integrity in the academic experiences both in and out of the classroom. Any student found guilty of dishonesty in any phase of academic work will be subject to disciplinary action. The University and its official representatives may initiate disciplinary proceedings against a student accused of any form of academic dishonesty including but not limited to, cheating on an examination or other academic work which is to be submitted, plagiarism, collusion and the abuse of

resource materials. For a complete listing of the university policy, see: Dean of Student's Office <http://www.shsu.edu/dept/dean-of-students/index.html>.

Students with Disabilities

It is the policy of Sam Houston State University that individuals otherwise qualified shall not be excluded, solely by reason of their disability, from participation in any academic program of the university. Further, they shall not be denied the benefits of these programs nor shall they be subjected to discrimination. Students with disabilities that might affect their academic performance should register with the Office of Services for Students with Disabilities located in the Lee Drain Annex (telephone 936-294-3512, TDD 936-294-3786, and email disability@shsu.edu). They should then make arrangements with their individual instructors so that appropriate strategies can be considered and helpful procedures can be developed to ensure that participation and achievement opportunities are not impaired.

SHSU adheres to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations for students with disabilities. If you have a disability that may affect adversely your work in this class, then I encourage you to register with the SHSU Services for Students with Disabilities and to talk with me about how I can best help you. All disclosures of disabilities will be kept strictly confidential. NOTE: No accommodation can be made until you register with the Services for Students with Disabilities. For a complete listing of the university policy, see: <http://www.shsu.edu/dotAsset/7ff819c3-39f3-491d-b688-db5a330ced92.pdf>

Student Absences on Religious Holy Days Policy

Section 51.911(b) of the Texas Education Code requires that an institution of higher education excuse a student from attending classes or other required activities, including examinations, for the observance of a religious holy day, including travel for that purpose. Section 51.911 (a) (2) defines a religious holy day as: “a holy day observed by a religion whose places of worship are exempt from property taxation under Section 11.20....” A student whose absence is excused under this subsection may not be penalized for that absence and shall be allowed to take an examination or complete an assignment from which the student is excused within a reasonable time after the absence.

University policy 861001 provides the procedures to be followed by the student and instructor. A student desiring to absent himself/herself from a scheduled class in order to observe (a) religious holy day(s) shall present to each instructor involved a written statement concerning the religious holy day(s). The instructor will complete a form notifying the student of a reasonable timeframe in which the missed assignments and/or examinations are to be completed. For a complete listing of the university policy, see: <http://www.shsu.edu/dept/academic-affairs/documents/aps/students/861001.pdf>

Visitors in the Classroom

Only registered students may attend class. Exceptions can be made on a case-by-case basis by the professor. In all cases, visitors must not present a disruption to the class by their

attendance. Students wishing to audit a class must apply to do so through the Registrar's Office.