

**Introductory Chemistry**  
**CHE 111.002**  
**Chemistry 106 MWF 11:00-11:50**  
**Fall 2018**

**Name: Dr. J. Brannon Gary**

**Department: Chemistry & Biochemistry**

**Email: garyjb@sfasu.edu**

**Phone: (936) 468-2189**

**Office: M-116**

**Office Hours: MF 9:00-10:00 AM; Thurs. 2:00 PM- 4:00 PM; other times by appointment**

**Course Description:** Introduction to the principles and concepts of chemical thought.

**Course Prerequisites and Corequisites: Prerequisite:** Eligibility for MTH 138. **Corequisite:** CHE 111L

**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:**

- To understand and apply method and appropriate technology to the study of natural sciences.
- To recognize scientific and quantitative methods and the differences between these approaches and other methods of inquiry and to communicate findings, analyses, and interpretation both orally and in writing.
- To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
- To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

**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. Although this chemistry course develops the first four core-learning objectives, it only submits assessment assignments to the University Core Assessment Committee every even spring for the teamwork general education core curriculum requirement. If this is an even spring semester, another, "shell" course has been created to collect student artifacts to meet this state requirement. You will see this course on your D2L list. During the even spring semester, you will receive an assignment in the laboratory portion of the course that fulfills both the requirements of the lab and the needs of Stephen F. Austin State University's Core Curriculum Assessment Plan with the Texas Higher Education Coordinating Board. When you complete this one assignment, you need to upload the assignment to both the Chemistry dropbox and the Teamwork dropbox. Please note that this only applies to the specific assignment listed in the matrix below. All other assignments should be submitted according to regular class operations. If you have any questions, please see your instructor or contact the University Assessment Specialist at (936) 468-1267 or [jstringfield@sfasu.edu](mailto:jstringfield@sfasu.edu).

The chart below indicates the core objectives addressed by this course, the assignment(s) that will be used to assess the objectives in this course and uploaded to the D2L Teamwork dropbox this semester, and the date the assignment(s) should be uploaded to the D2L Teamwork dropbox. Not every assignment will be submitted for core assessment every semester. Your instructor will notify you which assignment(s) must be submitted for assessment in the D2L Teamwork dropbox.

Core Objective	Definition		Date Due in D2L
CO 1 - Critical Thinking Skills	To include creative thinking, innovation, inquiry, and analysis, evaluation and synthesis of information.	Skills developed in this course	
CO 2 - Communication Skills	To include effective development, interpretation and expression of ideas through written, oral, and visual communication.	Skills developed in this course	
CO 3 - Empirical and Quantitative Skills	To include the manipulation and analysis of numerical data or observable facts resulting in informed conclusions.	Skills developed in this course	
CO 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.	Skills developed and assessed in lab every even spring	See lab syllabus

**Course Objective:** The course objective is for students to gain competency (in recognizing concepts and problem solving) in basic areas of general chemistry as suited for the non-science major.

**Student Learning Outcomes:**

The student is expected to recognize and apply the following concepts to problem solving:

- Units of measure and significant figures, unit conversion, density and definitions of matter.
- Basics of atomic theory applied to the atom, basics of the periodic table, correct use of terms, and the basics of nuclear chemistry.
- Writing correct formulas of compounds and inorganic nomenclature as well as electron configuration, Lewis structure, and VSEPR theory.

- Determination of atomic and molecular masses, mole calculations, Avogadro's number, mole and mass calculations in chemical formulas and chemical reactions, writing balanced chemical reactions.
- Principles of the gaseous state, gas laws (Boyles, Charles, Gay-Lussac, Ideal, Dalton's) as well as intermolecular forces in liquids and solids and properties of solutions.
- Principles of acid/base theories, pH, buffers, acid-base indicators, and titration

#### **Outline of Topics (approximate course time):**

Methods and Measurements (5-15%)

Composition and Structure of the Atom (5-15%)

Elements, Atoms, Ions, and the Periodic Table (5-15%)

Structure and Properties of Ionic and Covalent Compounds (5-15%)

Calculations and the Chemical Equation (5-15%)

States of Matter (5-15%)

Reactions and Solutions (5-15%)

Chemical and Physical Change: Energy, Rate, and Equilibrium (5-15%)

Charge-Transfer Reactions: Acids and Bases and Oxidation-Reduction (5-15%)

Nucleus, Radioactivity, and Nuclear Medicine (0-15%)

Introduction to Organic Chemistry: Alkanes (0-15%)

Unsaturated Hydrocarbons: Alkenes, Alkynes (0-15%)

#### **Text and Materials:**

*Introductory Chemistry 6<sup>th</sup> ed.*, by Nivaldo J. Tro (The loose-leaf version of the book is available at the local bookstores that already contains access to Modified Mastering Chemistry

**(<https://www.pearsonmylabandmastering.com/northamerica/>)** the required on-line homework – ISBN (campus bookstore): 9780135315590 or ISBN directly from Pearson 9781323918593). The course identification for modified mastering in chemistry is **SFAGaryCHEM111-002Fall2018 (course ID: gary10502)** (Please find associated instructions for Modified Mastering in Chemistry in the text book). A non-programmable, scientific calculator is required for all exams and quizzes. **Cell phones, laptops, or tablets are not substitutes for a calculator.**

#### **Course Calendar:**

On separate page

#### **Grading Policy:**

There will be **four semester exams** (100 pts each), and a **comprehensive Final** (100 points) cumulative with emphasis on the material covered since the last exam. These exams will consist of problems that must be set up and solved, discussion questions, and/or multiple choice, true/false, math problems, fill-in-blanks or essay type questions. **Partial credit will be given for short answer problems worked partially correct**; therefore, it is crucial to show your solutions to the problems, not just the answer. In general, the final will be used as the substitute exam for missing an exam with an excused absence (note exceptions may be made for university related absences with prior approval of the professor). Students have one week from the day any graded item is returned to notify professor of a possible grading error or ask questions about the grade of an item. After one week no points will be returned. The professor has the prerogative of also re-grading the entire item. **Credit will not be given for correct answers**

unless you show how you arrived at the answer. Multiple choice questions will have no partial credit. In addition, homework problems will be assigned.

Homework – Homework will total 100 points (#points correct\*100/ total points available).

Online homeworks will be assigned and due dates posted on MasteringChemistry.com Website (<https://www.pearsonmylabandmastering.com/northamerica/>). The due dates will be announced in class. In general, homework assignments will be due on Fridays. Homework will **not be graded after the due date** without legitimate documentation (NO EXCEPTIONS).

**Method of Evaluation:**

ITEM	POINT VALUE
Exam I	100
Exam II	100
Exam III	100
Exam IV	100
Final Exam	100
Online Homework	100
<b>TOTAL POINTS</b>	<b>600</b>

**GRADING SCALE (GENERAL GRADING SCALE)**

**600-540 = A; 539-480 = B; 479-420 = C; 419-360 = D; 359-0 = F**

**ATTENDANCE POLICY:**

Attendance of class is mandatory. Seven (7) unexcused absences or more will result in an 'F' for the course. Absences may be assigned to anyone that disrupts class, sleeps in class, or consistently comes in late or leaves early unless the professor is notified for any reason. *Six points will be added to the point total of anyone that has zero absences. Four points will be added to the point total of anyone that has only one absence. Two points will be added to the point total of anyone that has only two absences.* Anyone with three absences or fewer will have the option of the percentage of their final exam grade replacing their lowest exam grade. {For the purpose of the **bonus attendance points there is no distinction** between excused and unexcused absences.}

**ACADEMIC INTEGRITY (A-9.1):**

Academic integrity is a responsibility of all university faculty and students. Faculty members promote academic integrity in multiple ways including instruction on the components of academic honesty, as well as abiding by university policy on penalties for cheating and plagiarism.

Definition of Academic Dishonesty

Academic dishonesty includes both cheating and plagiarism. Cheating includes but is not limited to (1) using or attempting to use unauthorized materials to aid in achieving a better grade on a component of a class; (2) the falsification or invention of any information, including citations, on an assigned exercise; and/or (3) helping or attempting to help another in an act of cheating or plagiarism. Plagiarism is

presenting the words or ideas of another person as if they were your own. Examples of plagiarism are (1) submitting an assignment as if it were one's own work when, in fact, it is at least partly the work of another; (2) submitting a work that has been purchased or otherwise obtained from an Internet source or another source; and (3) incorporating the words or ideas of an author into one's paper without giving the author due credit.

Please read the complete policy at [http://www.sfasu.edu/policies/academic\\_integrity.asp](http://www.sfasu.edu/policies/academic_integrity.asp)

**WITHHELD GRADES SEMESTER GRADES POLICY (A-54):**

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.

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/>.

### Tentative Course Calendar

<b>Subject</b>	<b>Tentative Dates</b>	<b>Tentative HW Due Dates</b>
Chemical World	August 27 and 29	CH 1 – August 31
Measurement and Problem Solving	August 31 and September 3	CH 2 – September 5
Matter and Energy	September 5 and 7	CH 3 – September 7
Atoms and Elements	September 10, 12, 14	CH 4 – September 14
<b>Exam 1 (CH 1-4)</b>	<b>September 19</b>	
Molecules and Compounds	September 17 and 21	CH 5 – September 21
Chemical Composition	September 24, 26, and 28	CH 6 – September 28
Chemical Reactions	October 1, 3, and 5	CH 7 – October 5
Quantities in Chemical Reactions	October 8, 10, 12	CH 8 – October 12
<b>Exam 2 (CH 5-8)</b>	<b>October 17</b>	
Electrons and the Periodic Table	October 15 and 19	CH 9 – October 19
Chemical Bonding	October 22, 24, and 26	CH 10 – October 26
Gases	October 29, 31, and November 2	CH 11 – November 2
<b>Exam 3 (CH 9-11)</b>	<b>November 7</b>	
Liquids and Solids	November 5 and 9	CH 12 – November 9
Solutions	November 12 and 14	CH 13 – November 16
Acids and Bases	November 16 and 26	CH 14 – October 30
Equilibrium	November 28 and 30	TBD
<b>Exam 4 (CH 12-15)</b>	<b>December 5</b>	
Selected Topics/Review	December 3 and 7	N/A
<b>Final Exam</b>	<b>December 10</b>	<b>10:30 am – 12:30 pm</b>