



CHEM 1407 Introduction to Chemistry II

Course Syllabus: Spring 2019

"Northeast Texas Community College exists to provide responsible, exemplary learning opportunities."

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Office Hours	Monday	Tuesday	Wednesday	Thursday	Friday	Online
	7:55 – 8:44	7:55 – 8:44	7:55 – 8:44	7:55 – 8:44	7:55 – 8:44	

The information contained in this syllabus is subject to change without notice. Students are expected to be aware of any additional course policies presented by the instructor during the course.

Course Description: Introductory Chemistry II is a continuation of CHEM 1405. This course includes the study of electrochemistry, solutions, acids and bases, chemical equilibria, kinetics and nuclear chemistry. Selected topics in organic and biochemistry will also be included. 4 credit hours. Prerequisite: CHEM 1405

Required Textbook(s):

- **Text:** *Chemistry, The Central Science by Brown and LeMay (provided by instructor)*
- **Lab Manual:** *Chemistry, The Central Science: Laboratory Experiments (provided by instructor)*

Publisher: Prentice Hall

ISBN Number: 0-13-061142-5

Student Learning Outcomes:

- State the characteristics of liquids and solids, including phase diagrams and spectrometry.
- Articulate the importance of intermolecular interactions and predict trends in physical properties.
- Identify the characteristics of acids, bases, and salts, and solve problems based on their quantitative relationships.
- Identify and balance oxidation-reduction equations, and solve redox titration problems.
- Determine the rate of a reaction and its dependence on concentration, time, and temperature.
- Apply the principles of equilibrium to aqueous systems using LeChatelier's Principle to predict the effects of concentration, pressure, and temperature changes on equilibrium mixtures.
- Analyze and perform calculations with the thermodynamic functions, enthalpy, entropy, and free energy.
- Discuss the construction and operation of galvanic and electrolytic electrochemical cells, and determine standard and non-standard cell potentials.
- Define nuclear decay processes.
- Describe basic principles of organic chemistry and descriptive inorganic chemistry.
- Use basic apparatus and apply experimental methodologies used in the chemistry laboratory.
- Demonstrate safe and proper handling of laboratory equipment and chemicals.

- M. Conduct basic laboratory experiments with proper laboratory techniques.
- N. Make careful and accurate experimental observations.
- O. Relate physical observations and measurements to theoretical principles.
- P. Interpret laboratory results and experimental data and reach logical conclusions.
- Q. Record experimental work completely and accurately in laboratory notebooks and communicate experimental results clearly in written reports.
- R. Design fundamental experiments involving principles of chemistry and chemical instrumentation.

Identify appropriate sources of information for conducting laboratory experiments involving principles of chemistry

Assessment and Grading

Evaluations will be based on homework and lab assignments, discussions, quizzes, exams and a comprehensive final exam.

The percent break down is as follows:

Homework and quizzes	20%
Labs	20%
Exams	40%
Final Exam	20%

Learning objectives will be assessed through: quizzes, exams, labs, discussions, and a comprehensive final exam. In some cases quizzes and labs will utilize online resources such as NTCC Blackboard accounts or Mastering Chemistry. In all cases the actual assignment and due dates will be communicated in class.

Quizzes/Homework

Quizzes will be short and very specific in their scope. The quiz format will vary and may take place in class or can be administered online. Homework will usually consist of problem sets from the text book or administered online.

Laboratory Assignments

Work in the laboratory is central to the topic of chemistry. Experiments performed in the chemistry laboratory can only be completed in the laboratory. If students miss an experiment it will be the student's responsibility for making up the experiment before or after school. Lab information will be provided by the instructor. Due to limitations of time in the classroom students will often be required to complete pre lab tasks or write lab procedures before working in the lab. Occasionally virtual lab experiments will be assigned utilizing internet resources. If a student does not have internet access at home they can complete these assignments in the high school library or my classroom before or after school.

Exams

All exams will be announced prior to taking the exam and will be posted online. Each exam will cover assigned readings, class lectures, discussion, homework and quizzes. The format of exams will generally be multiple choice and problem solving. During the course of each semester 7 exams will be administered. Students will be able to utilize instructor provide reference information such as periodic table and equations.

Final Exam

The final exam is comprehensive and covers all chapters and topics discussed during each semester. The format of the final exam will be multiple choice.

A final grade for the course will be based on the following scale:

Grade % of Total Points

A 90 to 100

B 80 to 89

C 70 to 79

D 60 to 69

F 0 to 59

Tests/Exams:

All exams are administered in class. The final exam is comprehensive. The tentative schedule is as follows:

Exam Textbook

1 Kinetics

#2 Solutions

#3 Acid and Base

4 Equilibrium

5 Electrochemistry and Thermodynamics (expanded upon: Gibbs)

#6 Nuclear

#7 Biochemistry and Organic topics

Final Exam all covered topics

Assignments:

All assignments will be listed and due dates identified in class and utilizing Mastering chemistry.

Student Responsibilities/Expectations:

Any assignment, lab, or test that is not completed by the assigned due date will be graded as is or assigned a zero.

NTCC Academic Honesty Statement:

"Students are expected to complete course work in an honest manner, using their intellects and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. NTCC upholds the highest standards of academic integrity. This course will follow the NTCC Academic Honesty policy stated in the Student Handbook."

Academic Ethics

The college expects all students to engage in academic pursuits in a manner that is beyond reproach. Students are expected to maintain complete honesty and integrity in their academic pursuit. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. Refer to the student handbook for more information on this subject.

ADA Statement:

It is the policy of NTCC to provide reasonable accommodations for qualified individuals who are students with disabilities. This College will adhere to all applicable federal, state, and local laws, regulations, and guidelines with respect to providing reasonable accommodations as required to afford equal educational opportunity. It is the student's responsibility to arrange an appointment

with a College counselor to obtain a Request for Accommodations form. For more information, please refer to the NTCC Catalog or Student Handbook.

Family Educational Rights And Privacy Act (Ferpa):

The Family Educational Rights and Privacy Act (FERPA) is a federal law that protects the privacy of student education records. The law applies to all schools that receive funds under an applicable program of the U.S. Department of Education. FERPA gives parents certain rights with respect to their children's educational records. These rights transfer to the student when he or she attends a school beyond the high school level. Students to whom the rights have transferred are considered "eligible students." In essence, a parent has no legal right to obtain information concerning the child's college records without the written consent of the student. In compliance with FERPA, information classified as "directory information" may be released to the general public without the written consent of the student unless the student makes a request in writing. Directory information is defined as: the student's name, permanent address and/or local address, telephone listing, dates of attendance, most recent previous education institution attended, other information including major, field of study, degrees, awards received, and participation in officially recognized activities/sports.