Introductory Chemistry (Allied Health Emphasis)- Chem 1406

Course Syllabus: Summer 2020

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

Bryan Trickey

Office: NA, online presence only.
Phone: 903.434.8292 (Jo Ann Rodriguez, Dept. Secretary)
Email: btrickey@ntcc.edu

Online Hours (I check emails and monitor the class throughout the day, 7 days a week.)	**Monday**	**Tuesday**	**Wednesday**	**Thursday**	**Friday**	**Online**
	6 PM-9 PM	6 PM-9 PM	6 PM-9 PM	6 PM-9 PM	6 PM-9 PM	Email me to arrange web or phone conference.

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.

Catalog Course Description (include prerequisites):
A survey course designed to meet the needs of allied health majors. An introduction to the science of chemistry including scientific measurements, atoms and elements, compounds and their bonds, chemical reactions, energy, solutions, acids and bases, and gasses. Recommended as preparation for CHEM 1411 . May not be substituted for CHEM 1411 . 4 credit hours. Lecture/Lab/Clinical: The course is presented as an online course with the lecture, homework, and labs presented online using Blackboard.

Prerequisite: MATH 0305 or above or equivalent.

Required Textbook(s):
General, Organic, and Biological Chemistry by Frost and Deal, 3rd Ed.
Publisher: Pearson
ISBN Number: 9780134143705

Other Required Materials:
Introductory Chemistry Abbreviated Term Version 4: Kit #4604 *from eScience Labs*

Student Learning Outcomes:
1. Demonstrate the ability to convert units of measure, including dosage, nutritional, and temperature conversions;
2. Be able to define the fundamental properties of matter; to classify matter, compounds, and chemical reactions; and to identify trends in chemical and physical properties of the elements using the periodic table;
3. Demonstrate an understanding of atomic theory, and be able to use the octet rule and VSEPR theory to predict chemical formulas and structures.
4. Write chemical formulas, and use the rules of nomenclature to name inorganic chemical compounds.
5. Define the types and characteristics of chemical reactions, write and balance equations.
6. Be able to solve and apply simple gas law problems using Boyle's, Charles, and Gay-Lussac's Laws.

7. Be able to solve chemical equations for solution formation and solution concentration.
8. Identify strong acids and bases, conjugate acid/base pairs including the effect of concentration on equilibrium using LeChatelier's Principle.
9. Be able to calculate pH and/or hydronium ion concentration.
10. Be able to distinguish organic from inorganic compounds, identify functional groups and name simple organic compounds.
11. Be able to identify the fundamental structure and function of carbohydrates, lipids, proteins and nucleic acids and their building blocks.
12. Demonstrate safe and proper handling of laboratory equipment and chemicals.
13. Carry out experiments and experimental work completely and accurately and calculate, interpret and communicate experimental results clearly in lab notebooks or written reports.

Lecture:
This online course is meant to cover the same concepts and topics covered in the traditional face-to-face introductory chemistry course. The textbook and the online learning system called "MasteringChemistry" are essential to this course. "MasteringChemistry' provides simulations, tutorials, visualization to key topics as well as practice to reach mastery through problems and questions.

The following schedule provides a brief outline of the scope and sequence of the course:
Week 1: Introduction, login to "Mastering Chemistry", introduction to lab safety and lab procedures.
Week 2: Atoms and isotopes, radioactivity, nuclear changes, lab over data analysis and graphing. Electrons in atoms, octet rule, using the mole, covalent bonds and VSEPR.
Week 3: Representing organic compounds, functional groups, nomenclature of organic compounds, isomers, periodic trends(lab).
Week 4: Thermodynamics, kinetics, types of chemicals reactions, investigating atoms and atomic theory (lab).
Week 5: Classes of carbohydrates, stereochemistry of monosaccharides, electron configuration and bonding(lab).
Week 6: Types of attractive forces, gas laws, liquids and solids, dietary lipids, valence shell electron pair repulsion(lab).
Week 7: Factors affecting solutions formation, electrolytes, concentration, dilution osmosis and diffusion, chemical reactions(lab).
Week 8: Identifying and naming acids and bases, equilibrium constants, weak acids/bases and pH. Components and formation of nucleic acids, DNA, RNA and protein synthesis, acids/bases and the pH scale(lab).
Week 9: Metabolism and nucleotides, digestion chemistry,
Week 10: Citric acid cycle, electron transport and ATP production.
Week 11: Final Exam

Evaluation/Grading Policy:
Evaluations will be based on homework utilizing MasteringChemistry, lab assignments conducted at home using the eScience lab pack, chapter exams and a comprehensive midterm and final exam.
The percent break down is as follows:

Mastering Chemistry assignments (homework)	25%
Chapter Exams	15%
Labs	20%
Midterm Exam	20%
Semester Exam	20%

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:

- Chapter exams are assessments of a student's mastery of topics covered in assigned chapters. Students should use these exams as feedback for progress in the course and readiness for the mid-term and final exam. Chapter exams are found in Blackboard and are taken without supervision.
- The midterm and final exams are proctored exams meaning students must take these exams under a supervised setting

  Student's have three options for taking proctored exams-

  Using a test center

  NTCC's testing center is located on the main campus of NTCC in the Student Services Building. The hours of the testing center are: Monday—Thursday 8:00 a.m. to 6:00 p.m. and Friday 8:00 a.m. to 12:00 p.m. If a student does not reside near NTCC's service center they may choose to take these exams at another college test center. If you opt to use an alternate test center you will be required to contact the instructor with test center contact information including physical address, email, and a phone number. I will contact the test center to determine if it will be acceptable. Please be aware that it will be your responsibility to find this alternate test center and that they may charge a fee for this service.

  Using Respondus Monitor

  Respondus monitor uses a web cam to monitor students as they work on proctored exams. If your computer has a web camera you may also opt to take these proctored exams using a service called "Respondus Monitor". A one time fee of $10 allows you to be monitored at home while you are completing proctored exams. More information is available in Blackboard concerning this service.

  Other-If the first two options are not available students should contact the instructor to make alternative arrangements.

Labs:

Lab is an integral part of the chemistry class. Computer based virtual labs are useful, but they fail to provide the true hands on experience that comes with the traditional chemistry laboratory. To overcome this obstacle students will purchase and use a home lab pack for experiments. This lab pack from eScience Lab (Introductory Chemistry abbreviated term Ver 4 Kit 4606) adds some expense but it allows the student to complete all course requirement at home without physically meeting to complete lab work.

Homework:

Homework will be assigned and graded utilizing an online delivery system separate from blackboard called Mastering Chemistry. Homework assignments will target each section of all chapters that are

covered. Students should read the appropriate sections of the textbook, view the *optional* MasteringChemistry simulations, tutorials, then attempt the *mandatory* MasteringChemistry questions. Each mandatory question set is made up of end-of-chapter questions that must be answered correctly to get credit. Students that do not correctly answer the minimum number of questions for mastery will have unlimited attempts. MasteringChemistry does randomize numbers for problems from one attempt to the next. The student's best grade will be recorded. Students will receive specific instructions on how to access MasteringChemistry from within blackboard.

Other Course Requirements:
Students will need a scientific calculator. This simply means that the calculator is capable of utilizing scientific notation. This does not have to be a graphing calculator. You will be required to use your calculator on the midterm and semester exams.

Student Responsibilities/Expectations/Deadlines:
This online course allows you the flexibility of completing assignments at a pace and location of your choosing. If you manage your time, work hard, utilize all available resources and ask questions in a timely manner you will be successful. This will not be the case if you procrastinate or try to fit a weeks worth of assignments into the final two hours before they are due. Due dates for each assignment, lab, exam will be posted within Blackboard. Due dates are necessary to ensure students to work on the course in a timely manner and to give the instructor time to review student work. You are choosing to take this online course which requires a computer and a dependable broadband internet connection however, things happen. If you should have difficulty meeting a due date because of technical issues contact me about an extension. These technical difficulties should be rare. Numerous requests for extensions may not be honored. Assignments not completed by their due dates may result in a grade of zero for that assignment.
The last day to drop the course with a grade of W is **Thursday, July 30, 2020.** If circumstances require you to withdraw from this course, you must do so by that date. It is the **student's responsibility** to initiate the withdrawal with the registrar's office. **Failure to officially withdraw will result in your receiving a grade of F.**

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 request accommodations. An appointment can be made with Shannin Garrett, Academic Advisor/Coordinator of Special Populations located in the College Connection. She can be reached at 903-434-8218. For more information and to

obtain a copy of the Request for Accommodations, please refer to the NTCC website - Special Populations.

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.

Other Course Policies:
NA