Introductory Chemistry (Allied Health Emphasis) - Chem 1406
Course Syllabus: Summer 2014

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

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<table>
<thead>
<tr>
<th>Online Hours</th>
<th>Monday</th>
<th>Tuesday</th>
<th>Wednesday</th>
<th>Thursday</th>
<th>Friday</th>
<th>Online</th>
</tr>
</thead>
<tbody>
<tr>
<td>(I check emails and monitor the class throughout each day)</td>
<td>Evening</td>
<td>Evening</td>
<td>Evening</td>
<td>Evening</td>
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<td>Email me to arrange web or phone conference.</td>
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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: 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):
Introduction to General, Organic and Biochemistry 10th edition with Owl-24 Month by Bettelheim
OWL is the online learning program the correlates to the textbook is mandatory for this course.
Publisher: Cengage Learning
ISBN Number: 1-1331-0982-9

Other Required Materials:
Introductory Chemistry Version 1 Kit #4001 from eScience Labs

Student Learning Outcomes:
1. Students will develop a familiarity with the metric system similar to their sense of weights and measures in the U.S. system.
2. Students will demonstrate the ability to carry out conversion problems including dosage problems, nutritional calculations and temperature conversions, and express their results with the correct precision.
3. Students will demonstrate an understanding of atomic theory and related concepts such as atomic mass, isotopes, the structure of the atom, and periodicity.
4. Students will be able to use the octet rule to predict the formulas for ionic and molecular substances, and VSEPR theory to predict the three-dimensional structures of simple molecules.
5. Students will be able to derive chemical formulas from chemical names, and chemical names from chemical formulas.
6. Students will become familiar with the concept of the mole and its uses.
7. Students will be able to write and balance simple chemical equations, recognize reaction types, and understand the factors that influence reaction rate.
8. Students will be able to work simple gas law problems.
9. Students will gain an understanding of concepts associated with solutions such as electrolytes and nonelectrolytes, solubility and equivalents; and be able to work simple concentration problems.
10. Students will demonstrate an understanding of acids and bases, and related concepts such as pH and buffers.
11. Students will learn about environmental issues relevant to their lives such as global warming, air pollution, and acid rain.
12. Students will demonstrate competence in the laboratory including the ability to carry out simple experiments in a safe and efficient manner.

Exemplary Educational Objectives:
The state of Texas has established the following assessment goals for the lecture and laboratory portions of this course:

EEO 1: To understand and apply method and appropriate technology to the study of natural sciences.
EEO 2: 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.
EEO 3: To identify and recognize the differences among competing scientific theories.
EEO 4: To demonstrate knowledge of the major issues and problems facing modern science, including issues that touch upon ethics, values, and public policies.
EEO 5: To demonstrate knowledge of the interdependence of science and technology and their influence on, and contribution to, modern culture.

SCANS Skills:
Scan Skills- NA
Academic Transfer-NA

Lectures:
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 OWL provide 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, measurements and math skills, conversions, factor label method, density
Week 2: Classification of matter, energy and matter, the periodic table and atomic theory
Week 3: Bonding theory, nomenclature, molecular geometry
Week 4: Chemical equations and reactions, the mole and molar mass, stoichiometry
Week 5: Gases and their properties
Week 6: Solutions concept and terms, measuring concentration
Week 7: Reaction rates and equilibrium
Week 8: Defining acids and bases, pH and titrations
Week 9: Radiation, nuclear equations, half-life, medical applications of nuclear chemistry
Week 10: Final Exam

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

<table>
<thead>
<tr>
<th>Grade</th>
<th>% of Total Points</th>
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<tbody>
<tr>
<td>A</td>
<td>90 to 100</td>
</tr>
<tr>
<td>B</td>
<td>80 to 89</td>
</tr>
<tr>
<td>C</td>
<td>70 to 79</td>
</tr>
<tr>
<td>D</td>
<td>60 to 69</td>
</tr>
<tr>
<td>F</td>
<td>0 to 59</td>
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Tests/Exams:
Chapter exams are taken online and at home using Blackboard. Blackboard is the course management site used by NTCC. Chapter exams will cover specific chapters and they will be timed. The midterm and final exams are proctored exams meaning students must take these exams at NTCC’s test center. If NTCC is not convenient then students should make arrangements with the instructor for taking the midterm/final exam at another college or university test center. 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.

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 (Intro Chemistry Version 1, #4001) 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 OWLS. Homework assignments will target each section of all chapters that are covered. Students should read the appropriate sections of the textbook, view the optional OWL simulations, visualizations, then attempt the mandatory OWL mastery questions. Each mandatory question set is made up of 3 or 4 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. OWL 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 OWLS 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 week’s 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 force 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.

**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.

Other Course Policies:
NA