



## Introductory Chemistry II - Chem 1407 (dual credit) Course Syllabus: 2021

*"Northeast Texas Community College exists to provide personal, dynamic learning experiences empowering students to succeed."*

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| Office Hours | Monday                | Tuesday               | Wednesday             | Thursday              | Friday                | Online |
|--------------|-----------------------|-----------------------|-----------------------|-----------------------|-----------------------|--------|
|              | 7:00 AM to<br>5:00 PM | 7:00 AM to<br>5:00 PM | 7:00 AM to<br>5:00 PM | 7:00 AM to<br>5:00 PM | 7:00 AM to<br>5:00 PM |        |

*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):**

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

Prerequisite: CHEM 1405

**Inclusive Access:** We have negotiated with the Publisher to obtain a discounted price for your lecture course materials. Your eBook and **MasteringChemistry Access Code** are included with your tuition and will be available through Blackboard on the first class day (use the link found on the Bb course homepage). The materials are required for your class and essential in your success. If you also determine that you would like a print copy of your text in addition to your inclusive access loose-leaf copies will be available in the College Store at a discounted price. You may opt out of purchasing your materials from the College Store through the Census Date for the course. If you choose to opt out you will be responsible for purchasing your Connect Access Code from another vendor. You will receive a refund for the Inclusive Access if you opt out.

### **Required Textbook(s):**

Chemistry: The Central Science; Brown & LeMay 14<sup>th</sup> Ed.

**Publisher:** Prentice Hall

**ISBN Number:** 0-13-061142-5

### **College Student Learning Outcomes:**

#### Critical Thinking Skills

CT.1

Students will demonstrate the ability to 1) analyze complex issues, 2) synthesize information, and 3) evaluate the logic, validity, and relevance of data.

#### Communication Skills

CS.1

Students will effectively develop, interpret and express ideas through written communication.

## Empirical and Quantitative Skills

### EQS.1

Students will manipulate numerical data or observable facts by organizing and converting relevant information into mathematical or empirical form.

### EQS.2

Students will analyze numerical data or observable facts by processing information with correct calculations, explicit notations, and appropriate technology.

## Team Work

TW2. Students will work with others to support and accomplish a shared goal.

## **Student Learning Outcomes:**

1. recognize factors that affect reaction rates; demonstrate the ability to determine reaction rate laws from experimental data; write equilibrium constant expressions for reversible reactions and demonstrate the use of Le Chatelier's principle.
2. identify characteristics of acids and bases and solve problems involving pH, the ionization constant of water, ionization constant values and acid-base titrations.
3. identify characteristics of salts, determine the solubility product constant for a salt and the corresponding implication on solubility including the impact of the common ion effect.
4. solve simple problems involving enthalpy and entropy to determine the effect of temperature on spontaneity.
5. Identify substances that are oxidized and reduced in a chemical reaction; identify and balance oxidation-reduction equations, and determine standard cell potentials in electrochemical cells.
6. demonstrate safe and proper handling of laboratory equipment and chemicals.
7. carry out experiments and experimental work completely and accurately and calculate, interpret and communicate experimental results clearly in lab notebooks or written reports.

## **Lectures & Discussions:**

This hybrid online course is meant to cover the same concepts and topics covered in the traditional face-to-face introductory chemistry course. The textbook and communication with the instructor are still critical resources and available. You may contact me any time by email and I will respond as soon as possible. In some cases I may schedule an online conference utilizing blackboard. Traditional lectures are replaced by PowerPoint slides containing notes and examples and assorted instructional videos. An important resource to any course is the ability to discuss questions with peers. To foster peer teaching/assistance online discussions will be utilized. Details can be found on blackboard.

## **Evaluation/Grading Policy:**

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

The percent break down is as follows:

Grades will be determined using the following breakdown

|                        |     |
|------------------------|-----|
| Quizzes/Homework       | 20% |
| Discussions            | 10% |
| Laboratory assignments | 25% |
| Exams                  | 30% |
| Final Exam             | 15% |

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

| <u>Grade</u> | <u>% of Total Points</u> |
|--------------|--------------------------|
| A            | 90 to 100                |
| B            | 80 to 89                 |
| C            | 70 to 79                 |
| D            | 60 to 69                 |
| F            | 0 to 59                  |

**Tests/Exams:**

Test will be scheduled throughout the semester to correspond topics covered in specific chapters of the textbook. All exams will be administered during the normal class period. In the event that a student misses a scheduled exam they must make arrangements with the instructor to come in before or after regular class hours.

**Assignments:**

All assignments will be announced in class and due dates identified. In addition to homework a mixture of virtual labs and traditional wet labs will be utilized. Traditional wet labs will take place during normal class periods. Virtual labs will be completed outside of class. These virtual labs require a computer with internet access.

**Other Course Requirements:**

N/A

**Minimum Technology Requirements:**

Laptop or computer with webcam

Access to high speed daily internet

Microsoft Office 365 (available as a free download for all NTCC students)

Calculator such as TI-30Xa or equivalent. No programmable calculators or cell phones are allowed on exams.

**Required Computer Literacy Skills:**

Ability to use a web browser to access NTCC Blackboard System for course information, eBook and Connect assignments.

Ability to access NTCC student email system and communicate professionally and competently with instructor.

Ability to create and complete Word documents, save on your computer and upload into Bb assignment links.

**Core Curriculum Purpose and Objectives:**

Through the core curriculum, students will gain a foundation of knowledge of human cultures and the physical and natural world; develop principles of personal and social responsibility for living in a diverse world; and advance intellectual and practical skills that are essential for all learning. Courses in the foundation area of life and physical sciences focus on describing, explaining, and predicting natural phenomena using the scientific method. Courses involve the understanding of interactions among natural phenomena and the implications of scientific principles on the physical world and on human experiences.

**Student Responsibilities/Expectations:**

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 of me or

your peers you should 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. You are choosing to take this online course which requires a computer and a dependable broadband internet connection. As a result of this choice do not ask for extensions to due dates. Any assignment, lab, or test that is not completed by the assigned due date will be graded as is or assigned a zero.

### **Alternate Operations During Campus Closure and/or Alternate Course Delivery Requirements**

In the event of an emergency or announced campus closure due to a natural disaster or pandemic, it may be necessary for Northeast Texas Community College to move to altered operations. During this time, Northeast Texas Community College may opt to continue delivery of instruction through methods that include, but are not limited to, online through the Blackboard Learning Management System, online conferencing, email messaging, and/or an alternate schedule. It is the responsibility of the student to monitor NTCC's website (<http://www.ntcc.edu/>) for instructions about continuing courses remotely, Blackboard for each class for course-specific communication, and NTCC email for important general information.

Additionally, there may be instances where a course may not be able to be continued in the same delivery format as it originates (face-to-face, fully online, live remote, or hybrid). Should this be the case, every effort will be made to continue instruction in an alternative delivery format. Students will be informed of any changes of this nature through email messaging and/or the Blackboard course site.

### **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