



# CHEM 2425.001 Organic Chemistry II

Course Syllabus: Spring 2022

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

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	Monday	Tuesday	Wednesday	Thursday	Friday
on Campus	930-1050	1100-1220	930-1050	1100-1220 300-500	None
via Zoom	by appointment only				1000-1220

*Other times available by appointment.*

***This syllabus serves as the documentation for all course policies and requirements, assignments, and instructor/student responsibilities. Information relative to the delivery of the content contained in this syllabus is subject to change. Should that happen, the student will be notified.***

## Course Description:

- Continuation of CHEM 2423. Advanced principles of organic chemistry will be studied, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules. THIS COURSE IS INTENDED FOR STUDENTS IN SCIENCE OR PRE-PROFESSIONAL PROGRAMS.

This course consists of both lecture (3 hours) and laboratory (4 hours) each week.

- Prerequisite(s):* CHEM 2423 with final grade of C or better

## Course Structure and Overview:

- Course Format: Face-to-Face
  - Both the lecture and laboratory portions of this course will be conducted in the traditional face-to-face format during the scheduled times as posted.
  - Contingencies are in place, should the course need to transition to a virtual format. (see last page)
- Lecture Sessions: **Mondays & Wednesdays 130-250pm**
  - The lecture portion of this course is in the partially-flipped style. Students are required to read assigned portion of the text before coming to class to prepare for that day's activity. Lecture will take approximately half of the class time, while the other half of the class time students will be working in small groups. Students will be required to work a paper quiz in small groups during each class period. Additionally, students are expected to work on assignments, reading, and studying a minimum of 3 hours outside of class for every one hour of class time.
  - Additional course material may also be presented fully online through the course Blackboard page.
  - Exams consist of multiple-choice questions, short answer questions, calculation problems, and essay questions. For more information about exams, see the syllabus section on exams.
- Laboratory Sessions: **Wednesdays 300-650pm**
  - Detailed instructions, guidelines and descriptions of what is expected for laboratory sessions can be found on the following pages under the heading "Institutional/Course Policy". The course Blackboard page contains detail about what will be conducted in the laboratory sessions, what laboratory assignments are due, due dates, and rubrics.
  - Some days there will not be an experiment, and some days there may be additional lecture sessions during the lab time. Students are expected to follow posted schedules and the professor's instructions. On days with experiments scheduled, students should plan to be working in the lab for at least four hours.
- NOTE:** Although not required or mandated by the college, dual-layer cloth face coverings are **highly recommended** during this current, ongoing pandemic; especially as the format of this course makes social distancing difficult.

### Required Instructional Materials:

- Lecture Textbook
  - *Organic Chemistry* – Klein; 4<sup>th</sup> Edition with WileyPLUS  
Digital Version with Access Code (ISBN # 9781119761075)  
Publisher: Wiley
  - The required materials for the lecture portion of this course are available using INCLUSIVE ACCESS. This means that you paid a discounted price for the eText and WileyPLUS when you paid tuition for this course. You automatically have your access code for WileyPLUS.
  - A discounted physical textbook may also be available at an additional cost once the semester is underway. If you would like a physical book, you can only purchase one at this discounted price through the NTCC College Store.
- Lab Supplies
  - *A Small Scale Approach to Organic Laboratory Techniques* – Pavia, Lampman, Kriz, & Engel; 4<sup>th</sup> Edition  
Hardcover (ISBN # 8781305253926)  
Publisher: Cengage
  - *Lab Notebook* – 100 Carbonless Self-Copying Pages; Copy Page Perforated  
Spiral Bound (ISBN # 9780978534424)  
Publisher: Barbakam
  - Lab Safety Personal Protective Equipment (PPE)
    - Approved safety glasses are available in the college store, and many safety glasses and safety goggles are also available from online retailers. Students who wear corrective-vision glasses must have elastic-strap safety goggles that cover the entire glasses and seal against the forehead.  
**Always check with your instructor before purchasing eye protection from somewhere other than The NTCC College Store.**
    - **Beginning Wednesday, September 15, students arriving to lab without proper safety glasses or goggles will not be allowed to participate in the experiment and will receive a grade of zero for that experiment.** Before that date, safety glasses/goggles may be rented from the instructor for the cost of five (5) points deducted from the behavior, safety, and teamwork (BST) grade.
- Molecular Model Set for Organic Chemistry  
(ISBN # 0205081363)  
Publisher: Prentice Hall
- Scientific Calculator  
A scientific calculator is required for this course. A model TI-36x Pro or TI-30Xa is suggested, but many models will work; check with your instructor. **You will NOT be allowed to use a graphing calculator, programmable calculator, or cell-phone calculator during any exam in this course.**
- Pencils and Erasers  
Pencil is mandatory for writing on quizzes and exams. A strong, sturdy eraser is required to ensure that your work is professionally presentable. Any papers submitted in pen will not be graded and will receive a grade of zero. **Any papers that are too sloppy, messy, or unreadable will incur severe point deduction or earn a grade of zero.**

### Minimum Technology Requirements:

- Scientific Calculator - TI-36x Pro and TI-30Xa are recommended (Graphing calculators are not allowed)
- Wireless Internet capable laptop computer or tablet (Chromebooks are not recommended)

### Required Computer Literacy Skills:

- Web browsing skills for working with the online homework system
- Ability to use Blackboard for access to course information
- Competent and professional emailing skills
- Functional use of MS Word and Excel for writing lab reports

### Communications:

- The major communication pathway between instructors and students in this course is face-to-face during lecture and laboratory sessions and during office hours. Students are expected to ask questions and participate in discussions during lecture and laboratory sessions.
- NTCC email is the official form of communication used by the college. Email communications from non-NTCC email addresses will not be answered.
- Course announcements that occur outside of lecture and lab sessions will be announced via Blackboard's

announcement feature. These will be cc'd to students via NTCC email.

- **Students are expected to check Blackboard and their NTCC email accounts regularly.**
- All grading policies and due dates for online homework assignments are listed in the online homework system and the course Blackboard page.

#### **Evaluation/Grading Policy:**

- Course Grade Breakdown
  - WileyPLUS 10%
  - Assignments\* & Attendance 15%
  - Unit Exams 45%
  - Laboratory 25%
  - ACS Final Exam 5%
  - Total Course Grade 100%

*\* Assignments are anything assigned by the instructor that does not fit into any of the other categories.*
- Grading Scale
  - A = 100-90%
  - B = 89-80%
  - C = 79-70%
  - D = 69-60%
  - F = 59-0%

*Final course grades are rounded to the nearest whole number percent, and letter grades assigned using the grading scale.*
- Grades will be posted to Blackboard throughout the course. Blackboard provides an approximate course grade, which is typically within 1-3% of the actual course grade. The instructor's gradebook is the last word in grades and is what decides the final grades for the course. At any time during the term, students can request to view their grades in the instructor's gradebook or can request a pdf copy of their grades.
- *Questions about what score on the Final Exam is required to earn a particular grade in the course will not be answered. Please do not ask.*

#### **Exams:**

- Five regular exams will be given during the semester. Regular exams are administered on campus in the lecture classroom during the scheduled lecture time.
  - Exam 1 Wednesday, February 9
  - Exam 2 Wednesday, March 9
  - Exam 3 Monday, April 11
  - Exam 4 Wednesday, April 20
  - Exam 5 Wednesday, May 4
- Exam dates are subject to change, if circumstances dictate it. Ample notice will be given verbally during class, in such instances. Under some rare circumstances, students may take exams in advance; this will be decided on a case-by-case basis in advance of the exam date. **There will be no make-up exams for missed exams without authorization before the exam date.**
- **The American Chemical Society (ACS) Standardized Two-Semester Organic Chemistry Final Exam** will be administered during the scheduled time according to the published Final Exam Schedule (also shown below). The ACS Exam is a nationally administered exam that covers topics from the year-long course in organic chemistry. Questions on this exam will cover topics from all of CHEM 2423 and 2425. This is a 70-question multiple choice exam with strict guidelines that will be discussed in class. This exam is challenging and will give students an idea as to how they perform relative to other students across the nation (community college and university) that take this test.
  - **Wednesday, May 11 – 200pm (110 minutes)**
- **Guidelines for in-person exams in this course:**
  - During this pandemic time, face-coverings and social distancing will be required to take in-person exams in this course. Students' noses and mouths must be covered during the entire duration of the exam. Students will sit distanced from one another during the exam, and exam papers will be handed out and collected with as little contact as possible.
  - At the instructor's discretion, students may be assigned seats during an exam period.
  - Students are only allowed to bring pencils, erasers, and scientific calculators into the testing room.
  - **Programmable calculators, graphing calculators, and cell-phone calculators are not allowed.** Sharing calculators will not be permitted.
  - Bags, purses, etc. are not allowed at the student tables and should be stowed at the front of the room
  - Cell phones are not permitted. Phones should be turned off and stowed in a bag or surrendered to the instructor during the exam. A student in possession of phone once the exam has started will earn a grade of zero on that exam. If a student's phone sounds, disrupting the exam, that student will earn a grade of zero on the exam and be asked to leave the testing room.

- Watches are not permitted in the exam room; watches, and other personal electronic devices, must be stowed in a bag.
- Students will be provided with scratch paper and a formula sheet for each exam. Other papers or notes will not be permitted during the exam.
- Students that leave the testing room during the exam must turn in the exam to be graded and cannot return to the exam room until the testing period is over.
- A student found in violation of any of these guidelines during an exam period will earn a grade of zero on that exam.
- **Graded Exams will not be handed back to the student.** Students are required to review their graded exams with the instructor. Students can make an appointment to review their exams with the instructor at times outside of office hours as well. Reviewing the exam is an exam score out of five points. Students must review their exam before the start of the next exam to earn the full five points.

### **Institutional/Course Policy:**

- Students are expected to be working on assignments outside of class on their own time throughout the entire duration of this course. For each hour that you spend in class, plan to spend a minimum of three hours out of class studying, reading the book, working on homework problems, etc.
- Quizzes
  - A quiz will be given during all lectures. Students who are absent from class will earn a zero on the quiz, and makeup quizzes will not be given.
  - Quizzes that are not in the instructor's possession when they leave the classroom are considered late.
  - Take Home Quizzes that are not in the instructor's possession at the start of the class are considered late.
  - **Late quizzes are not accepted; you will earn a grade of zero.**
  - In special cases, outside-of-class paper assignments may be accepted late; this requires prior authorization in advance of the due date.
- Attendance
  - Attendance is mandatory for this course. Points will be earned for attendance.
  - Attendance points may be lost for attitude, teamwork, and/or other interpersonal issues.
  - You are expected to attend all classes. Chemistry is too hard to learn on your own. Some lecture material not found in the text may be presented during the semester that may show up on exams.
- Online Homework
  - This course uses the WileyPLUS online homework system. Details about registering in WileyPLUS will be discussed on the first day of class.
  - Assignments and due dates will be listed in the WileyPLUS system.
  - Access to a computer with the internet is required for this course.
- Electronic Devices Policy
  - Use of cell phones is prohibited during class and lab time. Students using phones for unapproved purposes during lab will be asked to leave lab and will earn a grade of zero on material for that lab period.
  - Wearing headphones during class, lab, or an exam is not allowed. Use of listening devices will earn the student a zero on work for that class session.
  - Students are not to be in possession of electronic devices (phones, music players, watches, etc) during an exam. Student found with devices other than scientific calculators during an exam will earn a grade of zero on that exam.
- Laboratory Experiments
  - There will 11 experiments performed during the laboratory periods over the course of the term.
  - Any experiments not completed and turned in will receive a grade of zero.
  - Any student earning a zero grade on three or more experiments will earn a grade of "F" in this course.
  - A schedule of experiments will be provided as a separate handout.
  - It is the responsibility of the student to arrive to lab prepared for the correct scheduled experiment.
- Laboratory Conduct and Attire
  - Students are expected to adhere to the guidelines set forth in the "Commitment to Laboratory Safety Pledge" and in the safety video.
  - Students must wear long pants covering their ankles (leggings are unacceptable), closed shoes (no exposed skin or sock), and shirts that cover their shoulders.
  - Approved safety glasses/goggles at all times in the lab. Students who wear corrective-vision glasses must have elastic-strap safety goggles that cover the entire glasses and seal against the forehead.
  - Long hair should be pulled back. Failure to follow laboratory safety protocols could result in injury to yourself or others and will result in reduction of your laboratory grade.
  - Students not dressed appropriately for lab will be asked to leave and will earn a grade of zero on that

experiment.

- You are expected to attend all laboratory periods. There is no make-up experiment, and failing to attend lab will earn you zero points for that experiment. "I have to work" is not an acceptable excuse for missing a laboratory period.
- Leaving lab early is not permitted; students leaving lab before the experiment is completed without permission of their lab partner(s) or instructor may earn a grade of zero on that experiment.
- **Keep in mind that teamwork is 10% of your lab grade!**

- Laboratory Assignments

- Details about laboratory assignments can be found in the "Organic Chemistry: Safety, Notebook, and Report Information" packet and on the course blackboard page.
- **Prelaboratory Assignments are due by the beginning of the laboratory period.** Students not turning in a complete Prelaboratory Assignment will not be allowed to participate in that experiment and will receive a grade of zero on that experiment.
- Unless otherwise stated, Lab Notebook Pages are due at the end of the laboratory period.
- The typed Written Report will be submitted electronically via blackboard and is typically due one week after completion of the experiment.
- Postlab Questions are due at the start of the following laboratory period.
- Specific experimental and report details and due dates are listed on the course Blackboard page, and it is the students' responsibility to check for current requirements and due dates.

- Lab Practical Exam

- A Lab Practical is required and is worth 15% of the laboratory grade.
- This will consist of hands-on laboratory work related to one of the experiments performed during the semester. More details will be given during the laboratory periods
- The Lab Practical is an exam, and all Exam Guidelines must be followed (see above).
- Students not completing the Lab Practical will earn a grade of "F" in the course.
- In the event that the course must move to a fully online mode during the semester, the Lab Practical Exam will be administered virtually.

- Laboratory Evaluation/Grading Policy

- *The laboratory portion of the course counts towards 25% of your overall course grade.*
  - Regular Experiments 75%
  - Lab Practical 15%
  - Behavior, Safety, & Teamwork 10%
  - Total 100%
- Copying answers on any work will not be tolerated. Lab papers that appear to have answers copied from other students or internet sources or that appear to have cheated in any way will earn a grade of zero.
- Details about what is expected for laboratory assignments can be found in the "Organic Chemistry: Safety, Notebook, and Report Information" packet and on the course blackboard page.
- Specific experimental and report details and due dates are listed on the course Blackboard page, and it is the students' responsibility to check for current requirements and due dates.
- Additionally, relevant rubrics can be found on the course blackboard page.

- Withdrawal Date (Drop Date)

- **Thursday, April 7** is the last day to withdraw from the course with a grade of "W". If you stop attending class and fail to officially withdraw, expect to earn a grade of "F" in the course.

### Tentative Course Timeline:

- The instructor reserves the right to make adjustments to this timeline at any point in the term.
- This course will cover most of the material in Chapters 11-13 and 16-22 in the Klein text, additional material may be included if time permits. More detail can be found by examining the Table of Contents in the text and the "Topical Course Outline" posted on Blackboard.
  - Week 1 Organic Synthesis
  - Week 2 Mass Spectrometry & <sup>1</sup>H-NMR
  - Week 3 <sup>1</sup>H- and <sup>13</sup>C-NMR
  - Week 4 Alcohols & EXAM 1
  - Week 5 Alcohols, Ethers, & Epoxides
  - Week 6 Dienes & Diels-Alder Reactions
  - Week 7 Electrocyclic & Sigmatropic Reactions
  - Week 8 UV-Vis & Color & EXAM 2
  - Week 9 SPRING BREAK
  - Week 10 Aromatics
  - Week 11 Electrophilic Aromatic Substitution

- Week 12 Electrophilic Aromatic Substitution & Aldehydes and Ketones
  - Week 13 EXAM 3 & Aldehydes and Ketones & Alpha Carbons
  - Week 14 Carboxylic Acids and Derivatives & EXAM 4
  - Week 15 Carboxylic Acids and Derivatives
  - Week 16 Amines & EXAM 5
  - Week 17 ACS FINAL EXAM
- NTCC Spring Graduation – Saturday, May 14

### Student Responsibilities/Expectations:

- This course covers a lot of material and moves rapidly, so do not fall behind.
- Material in this course is cumulative and builds on itself, and future chemistry courses requires knowledge from this course.
- ***The only way to learn chemistry is through practice.*** You must be willing to spend time working problems from the textbook to be successful. If you are having problems with a particular topic, it may even be necessary to work problems from the textbook that are not assigned.
- At the first sign of trouble you should seek help immediately. I am happy to help you with any of your chemistry coursework. However, if you wait too long to seek help, there is a point where there will be nothing I can do to help you.
- Work with a classmate on the homework, but do not just copy answers that you do not understand. There is a difference between working together and cheating.
  - If it feels like cheating, then it is cheating.
  - Assignments that appear to be copies of each other will earn grades of zero.
  - Students caught cheating will earn a zero on that quiz, lab, or any non-exam assignment and may earn a grade of “**F**” in the course for such actions.
  - Students caught cheating on an exam, midterm exam, or final exam will earn an “**F**” in the course.
  - Students with multiple instances academic dishonesty will earn a grade of “**F**” in this course.
- Do not wait until the night before a test to study. Almost everything we cover will come up again later in the class. If you learn the material only long enough to take an exam, you will not recognize it when we encounter it again. This will cause you to struggle through the entire course and to struggle through future chemistry courses.
- Questions and/or observations are encouraged during the class period. Courteous and attentive behavior is always expected. Students who consistently misbehave can expect to have their grade lowered.
- Like all colleges, Northeast Texas Community College strives to be a “community of scholars.” Please remember that you and all of the students in this class are pursuing very important goals in your lives. As human beings and as scholars, I expect every student to be courteous and considerate toward other students throughout the lecture and laboratory portions of this course.

### Course Student Learning Outcomes: Upon successful completion of this course, students will...

1. Correlate molecular structure with physical and chemical properties of organic molecules, and predict the chirality of reaction products based on enantiomeric and diastereomeric relationships.
2. Predict the mechanism and outcome of reactions, given the conditions and starting materials.
3. Describe reaction mechanisms in terms of energetics, reaction kinetics, and thermodynamics.
4. Use spectroscopic techniques to characterize organic molecules and subgroups.
5. Perform chemical experiments, analysis procedures, and waste disposal in a safe and responsible manner; utilize scientific tools such as glassware and analytical instruments to collect and analyze data; and identify and utilize appropriate separation techniques such as distillation, extraction, and chromatography to purify organic compounds.
6. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
7. In conjunction with laboratory experiments, correlate molecular structure with physical and chemical properties of organic molecules, and describe reaction mechanisms in terms of energetics, reaction kinetics, and thermodynamics.
8. In conjunction with laboratory experiments, predict the mechanism and outcome of reactions, given the conditions and starting materials, and predict the chirality of reaction products based on enantiomeric and diastereomeric relationships.
9. Use spectroscopic techniques to characterize organic molecules and subgroups, in conjunction with laboratory experiments

### NTCC Academic Honesty/Ethics Statement:

NTCC upholds the highest standards of academic integrity. The college expects all students to engage in their academic pursuits in an honest manner that is beyond reproach using their intellect and resources designated as allowable by the course instructor. Students are responsible for addressing questions about allowable resources with the course instructor. Academic dishonesty such as cheating, plagiarism, and collusion is unacceptable and may result in disciplinary action. This course will follow the NTCC Academic Honesty and Academic Ethics policies stated in the Student Handbook. Refer to the student handbook for more information on these subjects.

### 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.

#### 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 the Academic Advisor/Coordinator of Special Populations located in Student Services and can be reached at 903-434-8264. For more information and to obtain a copy of the Request for Accommodations, please refer to the special populations page on the NTCC website.

#### 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.

- **Extra Credit Opportunity:**
  - As a reward for making it this far, email me a picture of an otter before Spring Break to get five extra credit exam points.

#### Contingency Plan for Virtual Instruction:

- Course Format: Synchronous Lectures
  - *NTCC Definitions* – Synchronous classes will connect the instructor and the student in a virtual classroom where the student will receive live instruction and be able to interact directly with the faculty member during the course's class time.
  - *What this means for you* – Lectures in this course will be conducted via Zoom. You are expected to be online in the Zoom classroom video chatting during the scheduled lecture times. Additional course material may also be presented fully online through the course Blackboard page. Most assignments - including exams - will be submitted electronically through blackboard.
- Course Format: Online Laboratory Experiments
  - Laboratory experiments will be conducted online using the blackboard course page.
  - This will consist of recording observations and data using premade laboratory videos and/or simulations.
  - Lab papers will be submitted online through blackboard.
- Minimum Technology Requirements
  - Video conferencing capability using Zoom through computer or mobile phone.
  - Access to printer for required hand-written assignments.
  - Access to a scanner for electronic submission of hand-written assignments. ***NOTE: Free mobile phone applications are available that can substitute for a scanner. Hand-written assignments must be submitted in pdf format through Blackboard.***
- Required Computer Literacy Skills
  - Web browsing skills for working with the online homework system
  - Ability to use Blackboard for access to course information
  - Competent and professional emailing skills
  - Functional use of MS Word and Excel for writing lab reports
  - Ability to print and scan documents for electronic submission of hand-written assignment.
- Electronic Assignment Submission and Electronic Documents
  - All hand-written materials – quizzes, labs, exams, etc. – must be submitted for grading electronically through Blackboard.
  - Papers must be submitted in pdf format. All materials must be a single pdf.
  - Printing a given pdf and scanning answers is the preferred method of working assignments.
  - Lab assignments MUST be worked on the pages from the lab manual, scanned, and uploaded to blackboard.

- If a pdf is not supplied for an assignment or if a printer is not available, students may use their own paper to answer the questions. Students are expected to be clear about what they are answering, but copying the entire question onto the answer sheet is not required.
  - If a scanner is not available, there are free mobile phone applications available that can act as a scanner. More details can be discussed in class.
  - Typed lab assignments should be saved as pdf in MS Word – printing and scanning is not necessary.
  - Any materials that are submitted incorrectly will not be graded. Physical papers from students will not be accepted or graded.
  - All handouts and “paper” assignments for this course will be provided electronically via Blackboard.
  - **Any assignment (lab paper, quiz, exam, etc.) marked “Late” in the Blackboard system will earn a grade of zero.**
- **Guidelines for online exams in this course:**
    - Online exam materials will be available for 24 hours.
    - Students will have 60 minutes to answer multiple-choice questions using the Mastering Chemistry online homework system and will have the full 24 hours to answer the hand-written portion.
    - Programmable calculators, graphing calculators, and cell-phone calculators are not allowed. Sharing calculators will not be permitted.
    - Cell phones are not permitted. Phones should be turned off and stowed during the exam.
    - Students are not allowed to use any materials during the exam other than what has been given through Blackboard.
    - Students are not to discuss the exam with anyone other than the instructor during the exam time.
    - Hand-written portions of the exams must be submitted as a single pdf file to the Exam Blackboard Assignment. Exams not submitted correctly will not be graded.
    - A student found in violation of any of these guidelines during an exam period will earn a grade of zero on that exam.