# Organic Chemistry I

**CHEM 2423.001**

**Course Syllabus:** Fall 2019

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

**Dr. Drew Murphy**
**Office:** MS 115
**Phone:** 903.434.8214
**Email:** dmurphy@ntcc.edu

| | Monday | Tuesday | Wednesday | Thursday | Friday | Online |
|---|---|---|---|---|---|---|
| **Office Hours** | 730-750<br>1100-1220 | 730-750<br>1100-1220 | 730-750<br>1100-1220 | 730-750<br>1100-1220 | 730-750 | via<br>NTCC email |

*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:**
Fundamental principles of organic chemistry will be studied. Topics include: bonding and molecular structure, nomenclature, conformational analysis and stereochemistry, nucleophilic substitution and elimination reaction mechanisms, energy diagrams, synthesis and reactions of alkenes and alkynes, radical reactions, and infrared spectroscopy.

Successful completion (final grade of C or better) of CHEM 2423 will allow the student to continue on to CHEM 2425.

Prerequisite: CHEM 1412

**Required Textbooks:**
*Organic Chemistry* – Klein; 3rd Edition with WileyPLUS
Digital Version with Access Code (ISBN # 9781119340515)
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 Mastering Chemistry.

A discounted physical textbook is also available at an additional cost ($50 + tax) 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.

You can find additional information about exclusive access on the NTCC College Store's Exclusive Access website (https://www.ntccbookstore.com/Exclusive_Access.asp?).

*A Small Scale Approach to Organic Laboratory Techniques* – Pavia, Lampman, Kriz, & Engel; 4th Edition
(ISBN # 8781305253926)
Publisher: Cengage

Molecular Model Set for Organic Chemistry
(ISBN # 0205081363)
Publisher: Prentice Hall

A National Brand Laboratory Notebook (# 43649) is required for the laboratory portion of the course. Additional details will be provided on the first day of lab.

Lab Safety Glasses/Goggles:

Approved safety glasses are available in the college store, and many safety glasses and safety goggles are also available from online retailers. ***Always check with your instructor before purchasing eye protection from somewhere other than The NTCC College Store.*** Students who wear corrective-vision glasses must have elastic-strap safety goggles that cover the entire glasses and seal against the forehead.

***Beginning Wednesday September 18, 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.

**Student Learning Outcomes:** Students will…

1. Classify organic compounds by structure, molecular orbitals, hybridization, resonance, tautomerism, polarity, conformation, and functionality and demonstrate a basic understanding of stereochemistry.
2. Identify organic molecules using appropriate organic nomenclature.
3. Describe the principle reactions for syntheses of molecules, ions, and radicals, and describe organic reactions in terms of radical and ionic mechanisms.
4. Describe the use of infrared spectroscopic data to identify the functional groups in organic molecules.
5. Formulate appropriate reaction conditions for the synthesis of simple organic molecules.
6. Perform chemical experiments, analysis procedures, and waste disposal in a safe and responsible manner, and identify and utilize appropriate separation techniques such as distillation, extraction, and chromatography to purify organic compounds.
7. Perform organic syntheses of molecules, and use infrared spectroscopic data to identify the functional groups in organic molecules.
8. Record experimental work completely and accurately in laboratory notebooks, and describe organic reactions in terms of radical and ionic mechanisms and communicate experimental results clearly in written reports.

**Lectures & Discussions:**

We will cover nearly all of the material in Chapters 1-10 and 14 in the Klein text.

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| Week 1 | Review of General Chemistry |
| Week 2 | Drawing Structures & Resonance |
| Week 3 | Acids & Bases |
| Week 4 | **EXAM 1**; Alkanes & Conformations (bring model kit to class) |
| Week 5 | Stereoisomers (bring model kit to class) |
| Week 6 | Stereoisomers (bring model kit to class) |
| Week 7 | Reactivity and Mechansims |
| Week 8 | **EXAM 2**; Substitution & Elimination I |
| Week 9 | Substitution & Elimination II |
| Week 10 | Substitution & Elimination III |
| Week 11 | **EXAM 3**; Infrared Spectroscopy & Addition Reactions I |
| Week 12 | Addition Reactions II |
| Week 13 | **EXAM 4**; Alkynes |
| Week 14 | Radical Reactions |
| Week 15 | **EXAM 5** |
| Week 16 | **FINAL EXAM & ACS FINAL EXAM** |

More detail can be found by examining the Table of Contents in the text and the "Topical Course Outline" provided as a handout and posted on Blackboard. You should bring a reliable scientific calculator to class every day. Programmable calculators, graphing calculators, and cell phone calculators are not allowed. Sharing calculators will not be permitted.

**Evaluation/Grading Policy:**

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| Lecture Content | 55% |
| Regular Exams (5 exams) | |
| WileyPLUS (1 exam) | |
| Assignments* & Attendance (1 exam) | |
| Laboratory | 25% |
| Final Exams | 20% |
| Total | 100% |

Grading Scale

A = 100 – 90%
B = 89 – 80%
C = 79 – 70%
D = 69 – 60%
F = <59%

Final course grades are rounded to the nearest whole number percent, and letter grades assigned using the above scale.

* Assignments include anything assigned by the instructor including, but not limited to quizzes, homework, and problem sets.

Grades will be posted to Blackboard throughout the course. Blackboard provides an approximate course grade, which is typically within 2-4% 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 administered on the following dates:

| | **CHEM 2423.001** |
|---|---|
| **Exam 1** | Wednesday, September 18 |
| **Exam 2** | Wednesday, October 16 |
| **Exam 3** | Wednesday, November 6 |
| **Exam 4** | Wednesday, November 20 |
| **Exam 5** | Wednesday, December 4 |

Exams will be administered in the lecture classroom from 100-230pm and will be followed by additional lecture material. 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.***

***There will be a comprehensive Final Exam*** during the laboratory period of finals week. You MUST take the final exam at your scheduled laboratory time:

| | **CHEM 2003.001** | **CHEM 2003.002** |
|---|---|---|
| **Final Exam** | Monday, December 9<br>130-320pm | Tuesday, December 10<br>130-320pm |

***The American Chemical Society (ACS) Standardized First Semester Organic Chemistry Final Exam*** will be administered at the following date and time. The ACS Exam is a nationally administered exam that covers topics typically covered in the first semester of organic chemistry. Some questions on this exam may cover topics that are not covered in this course. 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, December 11 130-320pm

***Guidelines for exams in this course:***

- 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, and can be stowed in the chemistry lab or in the hallway during the exam.
- Cell phones are not permitted. Phones should be turned off and stowed in a bag that is not in the exam room 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.

- Watches are not permitted in the exam room; watches, and other personal electronic devices, must be stowed in a bag that is not in the exam room.
- Students will be provided with scratch paper and a formula sheet for each exam. Other papers or notes will not be permitted in the exam room.
- Students that leave the testing room during the exam must turn in the exam to be graded and can not return to the exam room until the testing period is over.
- At the instructor's discretion, students may be assigned seats during an exam period.
- 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 who wish to review their graded exams must come to the instructor's office to view the exam. Exams are not to leave the office. Students must surrender their phones while reviewing exams. No notes or corrections may be made on exams or scratch paper.

You will be allowed to use your model kit on exams, if you choose to. You may need a reliable scientific calculator for exams and quizzes. Programmable calculators, graphing calculators, and cell phone calculators are not allowed on exams. Sharing calculators and/or model kits will not be permitted.

**Quizzes and Assignments:**
Assignments throughout this course include anything assigned by the instructor and collected for a grade, excluding exams and laboratory work. This includes, but is not limited to, problems from the text, WileyPLUS online homework, and handouts from class. ***Students should expect 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.

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. In-class quizzes are due by the end of the lecture period; in-class quizzes that are not in the instructor's possession when he/she returns to his/her office are late. Take-home quizzes are due at the beginning of the next lecture period; take-home quizzes that are not in the instructor's possession when the lecture begins are late. ***Late quizzes are not accepted; you will earn a grade of zero and be marked as absent from class.*** In special cases, outside-of-class paper assignments may be accepted late; this requires prior authorization in advance of the due date.

Attendance is mandatory for this course. Every in-class quiz includes attendance points for that class period. A grade of zero on an in-class quiz counts as being absent from class that day. In rare cases, you may be excused from a class period; proof of a legitimate reason for being absent is required, and the instructor is the final judge of what constitutes a legitimate reason. Excused absences refund the missing attendance points, but do not award quiz grades.

This course will be using 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.

The WileyPLUS system will be used both inside the classroom and outside the classroom. You are expected to have a laptop computer, tablet, cell phone, or similar device to access WileyPLUS during the class period. This course will be a *partially flipped classroom*, which means you will be required to read material from the text (or etext) before coming to class. During class, it will be expected that you have a baseline knowledge of the topic of the day from completing the reading assignment before class, and more in-class time will be devoted to discussions and problem solving rather than purely lecture. You will be working in groups during lecture.

**Supplemental Instruction:**
Supplemental Instruction (SI; aka tutoring) is available for this course. Many hours of FREE SI tutoring are available each week, beginning in the second week of the semester (**Tuesday, September 3**). Tutoring is optional and recommended for all students in this course. If a student earns an exam score less than 70.00%, the student is ***required to attend a minimum of 3 SI sessions for at least an hour each***. These students will have 5 points added to their exam score. To receive points, students must sign in with the tutor on the sign-in sheet upon arrival and sign out with the tutor when leaving. ***Students that are not both signed in and signed out will not earn any points for that session.*** Students that have earned 70.00% or more on an exam are not eligible for additional points for SI tutoring sessions. SI tutors are chemistry majors who have earned As in CHEM courses and may attend current lecture sessions. The SI tutoring schedule will posted to the course blackboard page during the first week of classes.

**Laboratory Experiments:**
Laboratory attendance is mandatory. There will be approximately 11 experiments performed during the laboratory periods over the course of the term. Some experiments may span more than one laboratory period. There will be no make-up lab sessions. Any experiments not completed and turned in will receive a grade of zero. A list of experiments will be provided as a separate handout. A total of 7 experiments must be completed and receive a non-zero grade in order to pass this course.

**Laboratory Conduct and Attire:**
Students are expected to adhere to the guidelines set forth in the safety video and in the lab safety handout. In addition, students must wear long pants covering their ankles, closed shoes (no exposed skin or sock), shirts that cover their shoulders, and approved safety glasses/goggles at all times in the lab. Long hair should be pulled back. Lab coats should be worn while working in the lab; however, they are not a substitute for proper lab attire. 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 material for that lab period.

**Laboratory Evaluation/Grading Policy:**
*The laboratory portion of the course counts towards 25% of your overall course grade.*

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| Experiments | 75% |
| Lab Practical | 15% |
| Behavior, Safety, & Teamwork | 10% |
| Total | 100% |

Prelaboratory Assignments must be completed prior to the laboratory period. Prelaboratory Assignments are due at 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, and the typed Written Report and Questions are due 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.

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.

***Students who leave lab early without permission from the instructor and their lab partner(s) will incur a point reduction.***

***Keep in mind that teamwork is 10% of your lab grade!***

**Laboratory Practical Exam:**
There will be a Laboratory Practical Exam held **Monday and Tuesday, December 2 and 3 at 130-520pm**. This exam will be worth 15% of the laboratory grade in the course and is a combination of hands-on laboratory techniques and paper-and-pencil questions related to the experiments performed during the semester.

**Student Responsibilities/Expectations:**
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 and will show up on exams.

Use of cell phones is prohibited during class and lab time. Students using phones during class will lose his/her attendance points for the day and will have his/her phone confiscated or be asked to leave class. 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.
This course covers a lot of material and moves rapidly, so do not fall behind.

For each hour that you spend in class, plan to spend at least three hours outside of class studying, reading the book, and working on homework problems. This means you should be working a minimum of 9 hours per week outside of class on your chemistry work. You should always have chemistry work to be doing outside of class during the entire 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 is 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. Your classmate will not be able to help you on the exam.

Do not fall behind in the class. If you do not understand Chapter 1, you will probably not understand Chapter 2 either, because the material for this course is cumulative.

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.

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.
**Tuesday, November 19** is the last day to withdraw from the course with a grade of "**W**". Students who withdraw from the lecture must also withdraw from the lab. If you stop attending class and fail to officially withdraw, expect to earn a grade of "**F**" in the course.

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.

As your instructor, I will attend all classes on time and prepared to teach what you are expected to learn each day. I will make a conscientious effort each class period to teach to the best of my ability and to provide you with clear, well-organized explanations of class material. I care deeply about your learning experience and your success in this course. However, that ultimate success does depend largely on you. Your success can be maximized and your potential achieved by making a commitment to meet the following classroom expectations:

a) Attend ALL classes – physically and mentally. Wherever you are, be all there.
b) Be on time for class. Attitude is not everything but it is very important. Remain in class for the entire instructional period.
c) Be an active learner – participate in class. Be attentive, answer questions, and ask questions. Smile, be interested, and act as if you care. (OK, I'll admit that occasionally things get a little boring; work through that boredom by participating!)
d) Read ahead. This will help make the next lecture much more effective.
e) A good student acts like a good student, which includes not sleeping in class, not talking in class, and not reading unrelated material or doing other work in class. All cellular phones must be turned off during class time.
f) Realize that I do not GIVE grades. You EARN grades based upon your performance. That performance includes turning all assignments in on time. You shouldn't expect less of me because of my other commitments. I don't expect less of you because of your other commitments.
g) Be respectful of yourself, your classmates, and your instructors.
h) Learning is hard work but it is also invigorating and fun. Work hard and have fun doing so.

**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 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.