Description
Catalog: The chemistry of carbon compounds, including their structure, nomenclature, preparation, reactions, analysis, and properties. Reaction mechanisms are stressed within a functional group framework. Includes laboratory sessions. Prerequisite: CHEM 2310.

This course is the first part in the two-semester Organic Chemistry sequence.

Outcomes
Upon the completion of the course, the student is expected to be able to:
- Apply the rules of systematic organic nomenclature to hydrocarbons and organic compounds with functional groups, including the ability to name and draw organic compounds accurately.
- Recognize various types of isomeric structures (functional, structural, geometric and stereo).
- Recognize major organic functional groups, their properties and reactivities.
- Understand and apply basic concepts such as acidity, basicity, electrophilicity and nucleophilicity.
- Master the mechanistic aspects of their major types of organic reactions.
- Understand and apply the regio- and stereo-chemical constraints in organic reaction.
- Apply laboratory techniques related to isolation purification, synthesis and analysis of organic compounds.
- Connect the relevance of organic chemistry in biochemistry and reactions of biomolecules.

Required Material
Accessories: A scientific calculator (TI 30 or equivalent), a set of index cards, and a couple of 3.5”1.44Mb floppy disks, White lab coat, goggles, lab notebook, hand soap, and paper towels.

Recommended Material
Molecular model kit, Chemsketch (free) software (www.acdlabs.com)

Course Evaluation
The grades are computed by weighing lecture course work (75%) and laboratory work (25%)
The classroom performance will be based on four examinations, homework and quizzes. First three exams will be conducted during the class time and the final exam is comprehensive and will be conducted during the last week of classes. Class exams will be based on the material covered up to and including the material discussed in the previous class. The test may have some multiple choice and some free response questions. Quizzes will be administered at the beginning of each lab.

Lecture grade weight
| Exam 1 | 20% |
| Exam 2 | 20% |
| Exam 3 | 20% |
| Quizzes | 15% |
| Final Exam | 25% |

Final grade criteria
- 90% and above: A
- 80% to 89.9%: B
- 70% to 79.9%: C
- 60% to 69.9%: D
- Others: F
A +/- system may be used

Important Dates
- Last day to drop: November 25
- Exam # 1: Sept 22
- Exam #2: Oct. 25
- Exam #3: Nov. 22
- Final Exam: Dec. 13 - 17

Lab grade weight
| Lab reports | 60% |
| Mid term exam | 10% |
| Quizzes | 15% |
| Lab Notebook | 15% |

Lab report grades are based upon
- Pre-lab quiz /preparation
- Safety, behavior in lab, work quality
- Quality of write-up, data presentation
- Conclusions, explanation of results
Guidelines and Classroom Etiquette

- Attendance is required and will be recorded in all lecture and lab periods.
- You will be responsible for all the material covered in the class.
- Unprofessional behavior and academic dishonesty (defined below) will not be tolerated and dealt with administratively.
- There will be no makeup exams or makeup labs.
- Calculator must be used for computing purposes only.
- Lab reports are due within the prescribed time. Late reports will not be accepted. No drop labs.
- Unpreparedness and Unsafe behavior in the laboratory will result in immediate dismissal from the lab.
- Academic dishonesty (cheating, plagiarism, bribery, etc.) on exams, assignments, and lab reports will be dealt with harsh penalty, at minimum, with a failing grade in the course. **As a general policy in this course, a penalty for cheating will always be greater than the penalty for doing the work poorly, or not doing it at all.** Any sign of cheating during the examination will result with a zero on that test and will be immediately referred to the student Honor court. This may result in probation or suspension.

**What is unprofessional behavior?**

Consistent late arrival, leaving the class early, disruptiveness by beepers or cell phones, eating food, drinking beverages, leaving to the restroom, general disruptive behavior due to not studying prior to class.

**What constitutes cheating/plagiarism?**

The use of notes, books and any other resources such as programmable calculators with stored information during the exam, copying from another student during a test, submitting work without proper citation of source, submitting lab reports where information is lifted from another person's work (present or past), shared prelab write-ups. A student can become an unwilling participant in the cheating process by not being careful to cover the test so that a neighbor would not cheat. Whether you are a willing or an unwilling participant, the penalties are the same!

**ADA Policy**

Nova Southeastern University provides reasonable accommodations for students with documented disabilities. If you have a disability for which you believe you require accommodations, please contact Ms. Sue Mills, Assistant Director of Academic Services (e-mail: smills@nova.edu; telephone: 954-262-8405 or 1-800-338-4723, ext. 8405)

**Writing across Curriculum (WAC) Policy**

In keeping with the University's Writing Across the Curriculum Policy, this course will include evaluation through written work. Students will be graded on their knowledge of the subject and their ability to communicate in writing. Students are expected to use standard English and demonstrate college level writing skills.

**Tentative Laboratory Schedule**

<table>
<thead>
<tr>
<th>Week of</th>
<th>Lab</th>
<th>Title</th>
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<tbody>
<tr>
<td>Aug. 25, 27</td>
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<td>Lab lecture</td>
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<tr>
<td>Sept 1, 3</td>
<td>1</td>
<td>Lab Safety and Orientation</td>
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<tr>
<td>Sep. 8, 10</td>
<td>2</td>
<td>Distillation</td>
</tr>
<tr>
<td>Sep. 15, 17</td>
<td>2</td>
<td>Lab Lecture</td>
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<tr>
<td>Sep. 22, 24</td>
<td>3</td>
<td>Unknnowns I (Extraction)</td>
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<td>Sep. 29 Oct.1</td>
<td>4</td>
<td>Unknnowns II (Recrystallization)</td>
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<td>Oct. 6, 8</td>
<td>5</td>
<td>Unknnowns III (Melting Points)</td>
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<tr>
<td>Oct. 13, 15</td>
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<td>No Lab (Fall Break)</td>
</tr>
<tr>
<td>Oct. 20, 22</td>
<td>6</td>
<td>Thin Layer Chromatography</td>
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<td>Oct. 27, 29</td>
<td>7</td>
<td>Molecular Models</td>
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<tr>
<td>Nov. 3, 5</td>
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<td>Kinetic and Thermodynamic Control of Reaction</td>
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<td>Nov. 10, 12</td>
<td>9</td>
<td>Diels-Alder Reaction</td>
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<tr>
<td>Nov. 17, 19</td>
<td>10</td>
<td>Addition of Bromine; Reaction of Triphenylmethyl Cation</td>
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<td>Nov. 24, 26</td>
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<td>No Lab (Thanksgiving)</td>
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<td>Dec. 1, 3</td>
<td>-</td>
<td>Lab Lecture/Catch-up</td>
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<tr>
<td>Dec. 8, 10</td>
<td>-</td>
<td>Lab Lecture/ catch-up</td>
</tr>
<tr>
<td>Dec. 13 --17</td>
<td></td>
<td>Final Exam Week (no lab)</td>
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HOW TO STUDY CHEMISTRY?

Listening to Lectures
Read assigned material before coming to class. You will be sufficiently familiar with the material so you will more readily understand the lecture.

Taking Notes
- Try to capture the ideas and concepts of a lecture.
- Don't recopy your notes. You don't learn while copying material.
- Don't use a tape recorder. It takes too long to review the material.
- Take notes and review them immediately after class. In some research, a group that reviewed material immediately after a class recalled more than a group that didn't.
- Remembering what you have heard is usually more difficult than remembering what you have read. Therefore, take class notes so that you will have something to read.
- Don't do your remembering by memorizing. We need to be selective in what we memorize. William James said, "The essence of genius is to know what to overlook."
- Memorization should only be done with material that is understood. It should not be used as a means of escaping the effort to understand. Do not learn by memorizing what can be learned by reasoning. Use the five R's of note taking (the Cornell system):
  - Record: The meaningful ideas and concepts
  - Reduce: After class, summarize the main ideas and concepts
  - Recite: Say out loud in your own words the main ideas of the class.
  - Reflect: Take a few minutes to ponder over the main ideas of the class
  - Review: Once a week, review the ideas of all the semester's lectures.

Asking Questions
- During class, ask questions of yourself. It helps to keep you mentally alert. It helps you to look for answers in class.
- Always have at least two questions that you would like to ask each time you go to your class.

Making a Schedule
- Schedules are crucial to student success. They are a means of gaining extra time by making you more efficient and by helping you use small blocks of time that usually are wasted without a schedule.
- Schedules also help you prevent avoiding your study.

Studying
- Use daylight hours. Research shows that each hour used for study during the day is equal to one and a half hours at night.
- Study before each class. The material will be fresh in your mind.
- Study each subject in a one-hour block of time. It makes you more efficient. You don't become bored. Longer blocks of time lead to a waste of time.
- Allow time for sleep.
- Set realistic goals for yourself. You can reward yourself for being successful. If you waste all afternoon and then set a goal of studying chemistry from 6:00 p.m. to midnight, you may not be realistic. The chances are that you won't be successful; you will become frustrated.
- Study at a desk.
- Recite while studying. If you recite while writing, you will be learning while using your eyes and ears. If you can't say it, you don't know it.