

# Hudson County Community College

## Organic Chemistry I, CHP 225

**Credits: 4**

**Course:** CHP – 225-01

**Course Title:** Organic Chemistry 1

**Instructor:**

**Day(s) and Time (s):**

**Location:**

**Office Location:**

**Office Hours:**

**Email:**

**Course Description:** This is the first of a two-course sequence of introductory organic chemistry. The physical and chemical properties of organic compounds, including aliphatics, alicyclics, and aromatics are studied through an examination of their structure, preparation, reactivity, and spectral properties. The study of organic functionality centers in the hydroxyl and carbonyl groups. The laboratory component includes separation and purification techniques and other synthetic procedures.

**Lab:** You MAY NOT make-up a lab experiment missed. Lab reports will be graded. Lab reports may not be hand written. Lab reports should be submitted individually. The reports are due one week after completion of each experiment and cumulatively count with lab performance as one lab grade.

Each lab report must have:

- Cover page which includes: The experiment name.
- Introduction/ Background
- Data and calculation (submit the page from your lab manual)
- Conclusion

**Course Prerequisite:** CHP – 211, College Chemistry II

### Student Learning

**Outcome:** Learning objectives in Organic Chemistry I include student understanding of:

1. Classify organic compounds according to their functional groups.
2. Write structural formula for each compound.
3. Name aliphatic organic compounds with both IUPAC and common systems.
4. Compare melting point, boiling point, solubility, and density of a homologous series.
5. Compare melting point and density of isomers based on their structure.
6. Relate reactivity of a compound to its transition state and activation energy.
7. Comprehend seven reaction mechanisms: SN1/SN2 and free-radical substitutions; E1/E2 eliminations; and electrophilic and free-radical additions.
8. Discuss the competition of reaction mechanisms under the effects of steric hindrance, charge induction, resonance, and solute-solvent interaction.
9. Discuss how chain reaction proceeds.
10. Understand acid/base catalysis by Lewis concept and Lowry-Bronsted concept.
11. Compare stability of conformational isomers: eclipsed, anti, gauche, and staggered.
12. Assign geometric isomers: cis / trans, zusammen (Z) / entgegen (E).
13. Identify optical isomers from measurement: dextrorotatory (+) / levorotatory (-).
14. Designate configurational isomers by chiral specification: rectus (R) / sinister (S).
15. Distinguish stereoisomers as enantiomers, diastereomers, racemic, and meso compound from their physical and chemical properties.
16. Explain how chiral molecules and cyclic compounds take part in reactions.
17. Know sources and industrial preparation of some common organic compounds.
18. Possess some basic techniques to do organic experiments: separation, purification, identification, and reactions.
19. Write a formal organic lab report.

**Text Book:** “Organic Chemistry” 9<sup>th</sup> Edition, Cengage Learning Publishing

**Author(s):** John McMurry

**ISBN-13:** 978-1-305-08211-3

*Lab Manual specific to CHP-225*

**Book Purchase:** Since we use the book extensively in and out of the class, you must buy them before our second meeting. In case you need to wait for the book voucher, it is your responsibility to find a way to make copies of the readings assigned from the books. Any student who has true financial need is eligible to apply for a book scholarship through the Office of the Dean of Students located at 70 Sip Avenue.

**Attendance:** The college policy is generally that a student may fail a course due to lack of attendance if she/he missed more than 6 hours of instructional time for a 3-credit course.

<b>Grading Policy:</b>	Three exams	75 points (25 each)
	Quizzes	5 points

Lab	10 points
Homework	5 points
Class Participation	5 points

You are required to attend all classes even if you get A in first two tests.

**Breakdown of Grading:**

100 - 94 = A	69 - 64 = C+
93 - 90 = A-	63 - 54 = C
89 - 84 = B+	53 - 50 = D
83 - 75 = B	Below 50 = F
74 - 70 = B-	

**Safety in the Lab:** Students are required to read the laboratory safety rules, ask any question they may have, sign and return the bottom part of safety rule sheet.

**NO EATING or DRINKING** in the lab.

I do not wish to see even any closed soda, juice, coffee, tea on the desk while we are in the chemistry lab.

**Cell Phone Use Policy:**

Cell phones should be on manner mode. In case of emergency, notify me and then leave. Leaving classroom for non-emergency calls will result a zero grade in one test. **NO texting during lectures or exams!** Cell phones may **NOT** be used during exams

**Mandatory Use of**

**HCCC Email Address:** Members of the HCCC community are required to check their official HCCC email address in order to stay current with College and course communications. All college business communication between faculty, students, and staff must be sent via an official HCCC email address. If an employer or student elects to forward or link his/her HCCC email to a separate and private account, that individual remains responsible for all material transmitted to that account. Employees of HCCC shall not be responsible for any material that remains undelivered, due to defects in the private non-HCCC accounts. Failure in the operations of private email accounts shall not be cause for excuse from communications between the students and the employee. Students that encounter difficulty with HCCC email should view the FAQ's section on the Portal.

**Incomplete:**

An INCOMPLETE grade for the course is given under specific conditions when a student, because of serious and unexpected reasons, cannot complete the requirements of the course. For example, if a student did not attend the final because of illness his or her excuse must be verified by a physician. Other absences from other assigned activities must be made up at another appointed time. To arrange for an incomplete grade, the student must see the instructor before final exam, so proper documentations could establish and submitted to Division and The office of Academic Affairs.

**Disability Support Services:**

Students with disabilities who believe that they might need accommodations in this class are encouraged to contact Disability Support Services at (201) 360-4157, as soon as possible to better ensure that such accommodations are implemented in a timely fashion. All disabilities must be documented by a qualified professional such as a Physician, Licensed Learning Disabilities Teacher Consultant (LDTC), Psychiatrist, Psychologist, Psychiatric Nurse, Licensed Social Worker or Licensed Professional Counselor, who is qualified to assess the disability that the student claims to have and make recommendations on accommodations for the student. All information provided to the Disability Support Services Program will be confidential between the program, professors involved with the student, and individual student.

**Academic Integrity Standards:**

Academic integrity is central to pursuit of education. For students at HCCC, this means maintaining the highest ethical standards in completing their academic work. In doing so, students earn college credits by their honest efforts. When they are awarded a certificate or degree, they have attained a goal representing genuine achievement and can reflect with pride on their accomplishment. This is what gives college education its essential value.

**Violations of the principals of academic integrity include:**

- Cheating on exams
- Reporting false research data or experimental results
- Allowing other students to copy one's work to submit to instructors
- Communicating the contents of an exam to other students who will be taking the same test

- Submitting the same project in more than one course, without discussing this first with instructor
- Submitting *plagiarized* work. *Plagiarism* is the use of another writer's words or ideas without properly crediting that person. This unacknowledged use may be from published books or articles, the Internet, or another student's work.

### **Violation of Academic**

#### **Integrity:**

When students act dishonestly in meeting their course requirements, they lower the value of education for all students. Student who violate the college's policy on academic integrity are subject to failing grades on exams or projects, or for the entire course. In some cases, serious or repeated instances of academic integrity violations may warrant further disciplinary action.

Detailed information on the College's Academic Integrity policy may found in the *HCCC Student Handbook*. The handbook also contains useful information for students on completing research projects and avoiding plagiarism.

## **Hudson County Community College Classroom Recording Policy**

### **Student Classroom Recording Policy**

\* Hudson County Community College prohibits the audio-visual recording, transmission, and distribution of classroom sessions. Classes may only be recorded with the advance written permission of the instructor. The Hudson County Community College classroom recording policy must be listed in all syllabi.

\* All classroom recordings can only be used for academic purposes by students enrolled in that class. Recordings may not be shared, reproduced, or uploaded to public websites or other mediums, and these recordings may contain copyrighted material and are prohibited from any form of commercial use.

\* All students and guests must be informed that the class may be recorded. Due to issues related to privacy and the possible inhibition of student participation, instructors should be mindful of the effects of permitting classroom recording.

\* Instructors should retain electronic or paper copies of their written consent to grant classroom recordings.

\* Students must destroy their recordings at the end of the semester.

\* Students who are granted permission to record their class by the office of Disability Support Services should inform the instructor beforehand and are subject to the policies outlined in this document.

\* Violation of this policy is subject to disciplinary action listed under the code of conduct as included in the Student Handbook.

### Instructor Classroom Recording Policy

\* Instructors may record their classes if students are informed in writing in advance that recording will take place. Instructors may distribute their own lectures, but this must be limited to the lecture portion of the class. Recordings of student presentations or activities may be used in the class if the students are notified in advance of the recording. Recordings of student presentations or activities may not be distributed in any way without the advance written consent of the students.

Hudson County Community College has many supportive services available to help meet your goals. Below are resources available to you:

<p><b>SECURITY:</b> Main Campus: 201-360-4080 North Hudson Campus: 201-360-4777</p>	<p><b>NATIONAL SUICIDE PREVENTION LIFELINE:</b> 1-800-273-8255 <b>CRISIS TEXT LINE:</b> Text “HELLO” to 741-741</p>	
<p><b>IN AN EMERGENCY, PLEASE CONTACT SECURITY OR 911.</b></p>		
<b>Department</b>	<b>Journal Square Campus</b>	<b>North Hudson Campus</b>
<p><b>Counseling Services</b> <a href="mailto:counseling@hccc.edu">counseling@hccc.edu</a></p>	<p>201-360-4150 A Building, 2<sup>nd</sup> Floor <a href="https://my.hccc.edu/advisement">https://my.hccc.edu/advisement</a></p>	<p>201-360-4627 1<sup>st</sup> Floor, Enrollment Center <a href="https://my.hccc.edu/advisement">https://my.hccc.edu/advisement</a></p>
<p><b>Advising Services</b> <a href="mailto:advising@live.hccc.edu">advising@live.hccc.edu</a></p>		
<p><b>Accessibility Services</b> <a href="mailto:as@hccc.edu">as@hccc.edu</a></p>	<p>201-360-4163 A Building, 2<sup>nd</sup> Floor <a href="https://my.hccc.edu/as">https://my.hccc.edu/as</a></p>	<p>201-360-4163 1<sup>st</sup> Floor, Enrollment Center <a href="https://my.hccc.edu/as">https://my.hccc.edu/as</a></p>
<p><b>Career Services</b> <a href="mailto:career@hccc.edu">career@hccc.edu</a></p>	<p>201-360-4184 A Building, 3<sup>rd</sup> Floor <a href="https://my.hccc.edu/career-services">https://my.hccc.edu/career-services</a></p>	<p>201-360-4138 2<sup>nd</sup> Floor, Room 204 <a href="https://my.hccc.edu/career-services">https://my.hccc.edu/career-services</a></p>
<p><b>Food Pantry</b> <a href="mailto:foodpantry@hccc.edu">foodpantry@hccc.edu</a></p>	<p>201-360-4701 J Building, Lower Level Room 002 <a href="https://my.hccc.edu/hudson-helps">my.hccc.edu/hudson-helps</a></p>	<p>201-360-4709 5<sup>th</sup> Floor, Room 513A <a href="https://my.hccc.edu/hudson-helps">my.hccc.edu/hudson-helps</a></p>

<b>Financial Aid</b> <a href="mailto:financial_aid@hccc.edu">financial_aid@hccc.edu</a>	201-360-4200 A Building, 2 <sup>nd</sup> Floor <a href="https://my.hccc.edu/fa">https://my.hccc.edu/fa</a>	201-360-4214 1 <sup>st</sup> Floor, Enrollment Center <a href="https://my.hccc.edu/fa">https://my.hccc.edu/fa</a>
<b>Information Technology Services</b> <a href="mailto:itshelp@hccc.edu">itshelp@hccc.edu</a>	201-360-4310 A Building, Lower Level <a href="https://my.hccc.edu/its">https://my.hccc.edu/its</a>	201-360-4309 3 <sup>rd</sup> Floor, Room 309 <a href="https://my.hccc.edu/its">https://my.hccc.edu/its</a>
<b>Library</b> Journal Square <a href="mailto:librarian@hccc.edu">librarian@hccc.edu</a>  North Hudson <a href="mailto:librarynhc@hccc.edu">librarynhc@hccc.edu</a>	201-360-4360 L Building, 1 <sup>st</sup> Floor <a href="http://www.hccclibrary.net/">http://www.hccclibrary.net/</a>	201-360-4623 3 <sup>rd</sup> Floor <a href="http://www.hccclibrary.net/">http://www.hccclibrary.net/</a>
<b>Tutoring Center</b> <a href="mailto:tc@hccc.edu">tc@hccc.edu</a>	201-360-4187 L Building, Lower Level <a href="https://my.hccc.edu/tutoring">https://my.hccc.edu/tutoring</a>	201-360-4779 7 <sup>th</sup> Floor, Room 704 <a href="https://my.hccc.edu/tutoring/">https://my.hccc.edu/tutoring/</a>
<b>Writing Center</b> <a href="mailto:wc@hccc.edu">wc@hccc.edu</a>	201-360-4370 J Building, Room 204 <a href="https://my.hccc.edu/tutoring">https://my.hccc.edu/tutoring</a>	201-360-4779 7 <sup>th</sup> Floor, Room 704 <a href="https://my.hccc.edu/tutoring/">https://my.hccc.edu/tutoring/</a>

## Organic Chemistry I (CHP 225)

### *Tentative Course Schedule*

---

- September 04 (Wednesday) Introduction to the course, grading policy, course requirements. **Safety Rules** in the laboratory, Glassware  
Chapter 1: Structure and Bonding
- September 09 (Monday)** Chapter 1: Structure and Bonding
- September 11 (Wednesday) Chapter 2: Polar Covalent Bonds; Acids and Bases  
**Lab 1: Melting point**
- September 16 (Monday)** Review Chapter 2: Polar Covalent Bonds; Acids and Bases
- September 18 (Wednesday) Chapter 3: Organic Compounds: Alkanes and their Stereochemistry,  
**Lab 2: Boiling Point**

September 23 (Monday)	Review Chapter 3: Organic Compounds: Alkanes and their Stereochemistry
September 25 (Wednesday)	Chapter 4: Organic Compounds: Cycloalkanes and their Stereochemistry <b>Lab 3: Simple Distillation</b>
September 30 (Monday)	Review Chapter 4: Organic Compounds: Cycloalkanes and their Stereochemistry
October 02 (Wednesday)	School is closed (Convocation)
October 07 (Monday)	Review Chapter 1,2,3 and 4
October 09 (Wednesday)	Exam 1 (Chapter 1,2, 3 and 4)
October 14 (Monday)	Chapter 5: Stereochemistry at Tetrahedral Centers
October 16 (Wednesday)	Review Chapter 5: Stereochemistry at Tetrahedral Centers <b>Lab 4: Fractional Distillation</b>
October 21 (Monday)	Chapter 6: An Overview of Organic Reactions
October 23 (Wednesday)	Review Chapter 6: An Overview of Organic Reactions <b>Lab 5: Selection of solvents</b>
October 28 (Monday)	Chapter 7: Alkenes: Structure and Reactivity
October 30 (Wednesday)	Review Chapter 7: Alkenes: Structure and Reactivity <b>Lab 6: Crystallization</b>
November 04 (Monday)	Review Chapter 5, 6, 7
November 06 (Wednesday)	Exam 2 (Chapter 5, 6,7)
November 11 (Monday)	Chapter 8: Alkenes: Reactions and Synthesis
November 13 (Wednesday)	Review Chapter 8: Alkenes: Reactions and Synthesis <b>Lab 7: Sublimation</b>
November 18 (Monday)	Chapter 9: Alkynes: An Introduction to Organic Synthesis



- November 20 (Wednesday) Review Chapter 9: Alkynes: An Introduction to Organic Synthesis  
**Lab 8: Liquid-liquid Extraction**
- November 25 (Monday) Chapter 10: Organohalides
- November 27 (Wednesday) Review Chapter 10: Organohalides  
**Lab 9: Extraction of Caffeine from Tea**
- December 02 (Monday) Review Chapter 10: Organohalides
- December 04 (Wednesday) Chapter 11: Reactions of Alkyl Halides: Nucleophilic Substitutions & Elimination  
**Lab 10: Thin-Layer Chromatography**
- December 09 (Monday) Chapter 11: Reactions of Alkyl Halides: Nucleophilic Substitutions & Elimination
- December 11 (Wednesday) Review Chapter 11: Reactions of Alkyl Halides: Nucleophilic Substitutions & Elimination
- December 16 (Monday) Review (Chapter 8, 9, 10 and, 11)
- December 18 (Wednesday) **Exam 3 (Chapter 8, 9, 10, 11)**

*The course schedule may be subject to change depending on the progress of the course and needs of the student.*