

DISCLAIMER: This is an example syllabus that is subject to change at faculty discretion.



Term, Year

Course Information

CHM-215

Lab Experiments in Organic Chemistry I

1 Credit Hour

Academic Calendar:

https://web.doane.edu/sites/default/files/2025-02/25-26%20OLA%20Calendar%202.25_1.pdf

Instructor Information

InstructorName:

Instructoremail:

Office Hours: by appointment

If you need to contact me directly, my preference is that you will email me. Please allow 24 hours for me to respond to emails Monday through Friday and 48 hours on the weekend.

Communicating With the Instructor

When questions arise throughout the course, please remember to check the following resources for an answer before reaching out to me:

1. Course Syllabus
2. Announcements
3. The Question Center discussion board

Question Center Discussion

The Question Center Discussion is a great place for you to ask questions and get answers from your peers and from me. You are encouraged to post your questions here before reaching out directly to me unless it is a time-sensitive matter. If you have questions of a personal nature such as relating to a personal emergency, questioning a grade on an assignment, or something else that needs to be communicated privately, you are welcome to contact me directly via email or phone.



Technology Help

If you have a question about the technology being used in the course, please contact the Doane University Service Center for assistance, their contact information is listed later in the syllabus. If there are third-party tools utilized in the course, please reach out to them directly.

Course Details

Catalog Description

This course provides hands-on and virtual organic chemistry lab experiments designed specifically for distance learners. In this course, students will gain competencies in organic chemistry modeling, synthesis, and physical and spectroscopic characterization of molecules.

Outcome statement: Through hands-on and virtual experimentation, students will execute the building of molecules by using molecular models, prepare new compounds by using starting material chemicals provided in a chemical lab kit, and characterize the physical and structural properties using physical equipment from lab kits and virtual characterization techniques. Through experimentation, students will record observations and make conclusions based on experimental results.

Course Prerequisites

General Chemistry 1 and 2

Course Materials

Science Interactive: Lab Kit

For this course, you will be required to purchase a lab kit from our educational partner Science Interactive, as your course will include both virtual and hands-on lab activities. Instructions how to order the voucher for the lab kit are on the Canvas course shell.

As this is a 1-credit course, you can expect to complete three hands-on labs and on virtual lab to fulfill the course requirements.

Required Technology

1. Canvas
2. Printer
3. Smartphone or computer to make videos and take photos



Learning Objectives and Course Outline

Program Objectives

1. Demonstrate conceptual understanding and ability to apply fundamental chemical concepts and theory and apply to lab experiments.
2. Effectively communicate scientific concepts, data, results, and arguments through hands-on experiments.
3. Represent data appropriately, interpret results, and defend conclusions based on experimental evidence.
4. Demonstrate understanding of and competent use of the tools and experimental techniques of chemistry.

Course Objectives

By the end of the course, you will be able to:

1. Assess chemical safety measures and equipment for hands-on experiments.
2. Through hands-on molecular modeling visualize how the three dimensionality of molecules.
3. Illustrate through drawing and molecular modeling how atoms form single and multiple bonds.
4. Apply techniques and concepts of organic chemistry to hands-on experiments and analyze lab results.

Course Outline

Module	Topic	Assessments & Activities	Aligned Objectives
1	Getting Started	<ol style="list-style-type: none">1. Experimentation2. Student Supplied Materials3. Recording Data and Answers4. Competency Review5. Final Report	<ol style="list-style-type: none">1.1. Understand the navigation of Science Interactive Cloud.1.2. Explain the three sections of each lab: Exploration, Experimentation, and Evaluation.1.3. Describe the available Science Interactive resources.



Module	Topic	Assessments & Activities	Aligned Objectives
2	Lab Safety	<ol style="list-style-type: none"> 1. Experimentation 2. Home Lab Review 3. Safety Hazards 4. Material Safety Sheets 5. Safety Agreement and Contract 6. Competency Review 7. Final Report 	<p>2.1 Describe safety guidelines for using Science Interactive lab kits.</p> <p>2.2 Define terms associated with common laboratory safety equipment.</p>
3	Lab Kit Inventory	<ol style="list-style-type: none"> 1. Science Interactive Kit Inventory 2. Competency Review 3. Final Report 	<p>3.1 Perform a complete kit inventory.</p>
4	Drawing Organic Compounds	<ol style="list-style-type: none"> 1. Drawing Structures of a Compound from the IUPAC Name 2. Drawing Structures from Molecular Formulas 3. Drawing Cis/Trans-Isomers 4. Competency Review 5. Final Report 	<p>4.1 Discuss different ways of drawing organic compounds.</p> <p>4.2 Define molecular formula, Lewis structure, condensed structural formula, and line-angle drawing.</p> <p>4.3 Describe three-dimensional shapes of organic compounds.</p> <p>4.4 Compare structural isomers and stereoisomers.</p> <p>4.5 State the rules for drawing organic compounds from the IUPAC name, molecular formula, and cis/trans-isomers.</p>

Module	Topic	Assessments & Activities	Aligned Objectives
5	Molecular Modeling and Lewis Structures	<ol style="list-style-type: none"> 1. Practice with Modeling and Structures 2. Lewis Structures and Molecular Modeling 3. Competency Review 4. Final Report 	<p>5.1 Define allotropes, valence electrons, and lone pairs.</p> <p>5.2 Describe the duet rule and octet rule.</p> <p>5.3 Define and create Lewis structures.</p> <p>5.4 Describe the valence shell electron pair repulsion (VSEPR) model.</p>
6	Chromatography of Food Dyes	<ol style="list-style-type: none"> 1. Paper Chromatography 2. Competency Review 3. Final Report 	<p>6.1 Describe chromatography and how it is used to identify unknown mixtures.</p> <p>6.2 Discuss the different types of chromatography and their applications.</p> <p>6.3 Explain how paper chromatography is used to separate compounds.</p> <p>6.4 Define R_f (Retention factor) values.</p> <p>6.5 Describe FD&C dyes and their uses.</p>
7	Isolation and Purification of Caffeine	<ol style="list-style-type: none"> 1. Caffeine Extraction 2. Isolation and Purification 3. Competency Review 4. Final Report 	<p>7.1 Describe caffeine and its natural sources.</p> <p>7.2 Define phase changes.</p> <p>7.3 Discuss crystallization.</p> <p>7.4 Explain chemical extraction.</p>



Module	Topic	Assessments & Activities	Aligned Objectives
8	Wrapping Up	Final Lab Exam	8.1 Demonstrate a cumulative theoretical and practical understanding of all experiments performed.

Course Requirements

This is an online course and there will **not be any face-to-face class sessions**. All communications, submissions of assignments, course interactions, and posting of grades will utilize Canvas LMS (<https://doane.instructure.com>). You must have a **reliable internet connection** throughout the duration of the course.

Attendance/Participation

Attendance in an online course means logging onto Canvas regularly and participating in all the activities that are posted in the course. In addition, check your Doane University email account and the Canvas Announcements regularly, as I may send important information about the course.

Class Preparation

Preparation for class means reading the assigned readings and reviewing all information required for that module. You should plan to work on this course every day. Regular engagement is expected for online courses.

Netiquette Guidelines

At heart, Netiquette (etiquette for the Internet) is simple, good manners and business courtesy. Some of it may seem basic, but some infringements can result in major problems for others or can create an unintended insult to another user. The guidelines are adapted from The Core Rules of Netiquette by Virginia Shea (1994). For more information, please review the [Netiquette Guidelines](#) in the Student Resource Center.

Computer Requirements

For the successful use of Canvas please refer to Doane University's [minimum computer requirements](#). This also includes:



- Reliable computer and internet connection
- A web browser (Chrome or Mozilla Firefox)
- Adobe Acrobat Reader (free)
- Word processing software—Microsoft Word or Google Docs
- Webcam and mic*

*For privacy purposes, use of a webcam is **optional** during video conferencing and recording.

Campus Network or Canvas Outage

When access to Canvas is not available for an extended period of time (greater than one entire evening - 6 pm until 11 pm) you can reasonably expect that the due date for assignments will be changed to the next day.

Drop and Add Dates

If you feel it is necessary to withdraw from the course, please contact your advisor for full details on the types of withdrawals that are available and their procedures.

Federal requirements state that students must complete 75% of the coursework to be eligible to receive an incomplete for the course. If students fall more than two weeks behind, they cannot meet this requirement.

Academic Integrity

Fundamental to our mission, our core values, and our reputation, Doane University adheres to high academic standards. Students of Doane University are expected to conduct themselves in a manner reflecting personal and professional integrity. Disciplinary actions may be taken against students whose academic behavior is not congruent with the expectations of the University. Students are responsible for adhering to the standards detailed in this policy. Not being familiar with these standards does not mean that the students will not be accountable for adherence to them. Additional details on the Academic Integrity policy for violating academic integrity are published in the undergraduate and graduate catalogs. Please review [Doane University's Academic Integrity Policy](#).

Course Grading

Submitting Assignments

All assignments, unless otherwise communicated to me, must be submitted via Canvas. Each assignment will have a designated place to submit your work. All materials, assignments, and deadlines are subject to change without prior notice. It



is your responsibility to stay in touch with me and review the course site (Canvas), including Announcements, regularly to learn about changes to assignments or due dates.

Grading Scale

Assignment of letter grades is based on a percentage of points earned. The letter grade will correspond with the following percentages achieved. All course requirements must be completed before a grade is assigned.

Grade	Percentage
A+	97-100%
A	93-96%
A-	90-92%
B+	87-89%
B	83-86%
B-	80-82%
C+	77-79%
C	73-76%
C-	70-72%
D+	67-69%
D	63-66%
D-	60-62%
F	<60%

F < 60%

Grading Scheme

The following outlines the weighted breakdown for how grades will be calculated:

Getting Started	5% of grade
Lab Safety	5% of grade
Lab Inventory	5% of grade
Virtual Lab (1)	15% of grade
Hands-On Labs (3)	60% of grade
Final Lab Exam	10% of grade
Total	100%



Tutor Me

Students will have access to a **free online tutoring service** within their Canvas account. You can connect with a live free tutor or submit a paper to get feedback before submitting.

Proctored Assessments

This course **may contain proctored quizzes and exams, which are not optional**. For these proctored events, Doane uses Examity, which is a secure, online proctoring service that allows you to complete your exam from any chosen location at any time. Proctoring provides your instructor with the assurance that any suspicious activity by test takers will be monitored and reported. The cost of the proctoring is included in the tuition and fees for this course.

Late or Missed Assignments

All lab assignments must be completed and turned in to finish the course. Once all lab assignments have been completed your instructor will submit your final grade.

Assignment & Assessment Feedback

Please allow 1-3 days for feedback on assignments. Be sure to review all of my feedback, as this will help you reflect on what you have learned while receiving suggestions for improvement.

There is no extra credit offered in this course.

Administrative Withdrawal

Open Learning Academy (OLA) students are required to complete 75% of the course material in order to receive credit for the course. If a student falls more than two weeks behind, they cannot meet this requirement and will be administratively withdrawn (W) from the course. Withdrawing from a course occurs within the first four weeks. After the fourth week, students will receive an F grade.

Grade Appeals

Students who believe that their grade was miscalculated due to a mathematical error should contact the instructor within **ten (10) days of the grade posting**. A student is encouraged to talk with their advisor to offer an assessment of the concern and to clarify the steps of the appeal process. More information is published in the [Undergraduate and Graduate Catalogs](#).



Tutor Me

Students will have access to a free Tutor Me service within their Canvas account. You can connect with a live free tutor or submit a paper to get feedback before submitting.

Support and Services

Technical Support

If you are in need of technical assistance, please access the [Self-Service Portal](#). You may reach the help desk at 402-826-8411 or by email at helpdesk@doane.edu.

Accessibility Statement

In compliance with the Rehabilitation Act of 1973, Section 504, and the Americans with Disabilities Act of 1990, professional disability specialists and support staff at Doane University facilitate a comprehensive range of academic support services and accommodations for qualified students with disabilities. Doane University staff coordinate student transitions from high schools and community colleges, conduct in-service training for faculty and staff, enable the resolution of accessibility issues, conduct community outreach, and facilitate collaboration among Doane University staff on disability policies, procedures, and accommodations.

Accommodations & Disability Services

[Doane University's Disability Services Office](#) will provide guidance on accommodations and universal access. To request accommodations please complete the [Self-Identification Form](#) and visit the website for additional information as soon as possible.

Academic Support

Doane University offers all of its students access to [Academic Support](#) services.

Title IX Requirements: Mandatory Reporting

At Doane, all university employees, including faculty, are considered Mandatory Reporters. As a Mandatory Reporter, I am required to report incidents of sexual misconduct and relationship violence to the Title IX Coordinator and, thus, cannot guarantee confidentiality. This means that if you tell me about an incident of sexual harassment, sexual assault, domestic violence, dating violence, stalking and/or other forms of prohibited discrimination, I have to share the information with the



University's Title IX Coordinator. My report does not mean that you are officially reporting the incident. This process is in place to ensure you have access to and are able to receive the support and resources you need. For additional information, including confidential resources, please visit the [Campus Advocacy, Prevention, and Education \(CAPE\) Project](#).

Anti-Harassment Policy

Doane University, referred to as the "University", is committed to providing a safe and non-discriminatory learning, living, and working environment for all members of the University community. This policy addresses the University's responsibilities under Title IX, the Violence Against Women Reauthorization Act of 2013, and the Jeanne Clery Disclosure of Campus Security Policy and Campus Crime Statistics Act ("Clery Act"). More information is published in the [Student Handbooks](#).

Instructional Technology Accessibility and Privacy Policies

[Technology accessibility and privacy policies](#) are available on the Student Resource Center within the Canvas LMS.

Regular and Substantive Interaction

The U.S. Department of Education mandates that online courses include "regular and substantive interaction" (RSI) between students and instructors to be considered distance education. This course adheres to the RSI expected of all distance education courses. The course adheres to the regular component through

- a clear schedule of due dates for lessons, readings, and assessments
- an instructor of record who monitors student progress in the course and alerts the students who are not engaging adequately in the course.

The substantive interaction is achieved through

- assessment of students' work with feedback on a scheduled basis
- an active discussion board about course content monitored by the instructor
- providing information about the course content on a regular basis or in response to questions.

Syllabus Addendum & Disclaimer

I (the instructor) view the course syllabus as an educational contract between myself and each student. Every effort will be made to avoid changing the course schedule but the possibility exists that unforeseen events will make syllabus changes necessary. I reserve the right to make changes to the syllabus as deemed



necessary. Students will be notified in a timely manner of any syllabus changes via email or in the course site Announcements. Please remember to check your Doane University email and the course site Announcements often.

Syllabus Changes

The instructor and Doane University reserve the right to make changes as necessary to this course syllabus. All students will be notified of any changes.

Syllabus Addendum

Each student is responsible for being aware of the policies, resources, and expectations as specified in the [Doane Syllabus Addendum](#).

