NOVA SOUTHEASTERN UNIVERSITY
Halmos College of Natural Sciences and Oceanography

CHEM 2400 - Organic Chemistry I/Lab

I. Course Information

Course: CHEM 2400 - Organic Chemistry I/Lab
Semester Credit Hours: 4.0
Course CRN and Section: 20147 - EV1, 20148 - EV2
Semester and Year: Fall 2017
Course Start and End Dates: 08/21/2017 - 12/10/2017
Building and Room: Carl DeSantis Building - 3047

II. Instructor Information

Professor: Dr. Nagaraju Birudukota
Email: nbirudukot@nova.edu
Phone: 9542628125
Office Hours:

Day	Time	Location
MW	8:00am - 10:00am	Parker339

Office Hours:
Instructor: Dr. Nagaraju Birudukota-office Parker 124
OFFICE HOURS: W= 2pm-5pm and R= 3pm – 5pm

III. Class Schedule and Location

CRN	Day	Date	Time	Location	Building/Room
20147	T	08/22/2017 - 10/03/2017	6:00 PM - 8:30 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047
20147	W	08/23/2017 - 10/04/2017	6:00 PM - 8:45 PM	Ft Lauderdale/Davie Campus	Panza Science Annex-5
20147	T	10/10/2017 - 10/10/2017	6:00 PM - 8:00 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047
20147	T	10/17/2017 - 11/28/2017	6:00 PM - 8:30 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047
20147	W	10/18/2017 - 11/29/2017	6:00 PM - 8:45 PM	Ft Lauderdale/Davie Campus	Panza Science Annex-5

20147	T	12/05/2017 - 12/05/2017	6:00 PM - 8:00 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047
20148	T	08/22/2017 - 10/03/2017	6:00 PM - 8:30 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047
20148	R	08/24/2017 - 10/05/2017	6:00 PM - 8:45 PM	Ft Lauderdale/Davie Campus	Panza Science Annex-5
20148	T	10/10/2017 - 10/10/2017	6:00 PM - 8:00 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047
20148	T	10/17/2017 - 11/28/2017	6:00 PM - 8:30 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047
20148	R	10/19/2017 - 11/30/2017	6:00 PM - 8:45 PM	Ft Lauderdale/Davie Campus	Panza Science Annex-5
20148	T	12/05/2017 - 12/05/2017	6:00 PM - 8:00 PM	Ft Lauderdale/Davie Campus	Carl DeSantis Building-3047

IV. Course Description

This course and the related lab is the first part of a two-semester sequence that studies the chemistry of carbon compounds, including their structure, nomenclature, preparation, reactions, analysis, spectroscopy, and properties. Reaction mechanisms are stressed within a functional group framework. The laboratory session introduces basic laboratory techniques frequently utilized in organic syntheses. Prerequisite: CHEM 1310 or CHEM 1310H. Frequency: Every Fall and Winter.

V. Course Objectives / Learning Outcomes

1) Apply the rules of organic nomenclature, including the ability to name organic compounds and draw correct structures from names.
2) Describe chemical structures and relate them to physical properties of organic compounds.
3) Correlate molecular structure and spectroscopic behavior.
4) Describe and apply fundamental reactivity concepts such as acidity, basicity, electrophilicity, nucleophilicity, electron delocalization and rules of resonance.
5) Describe the mechanisms and outcomes of addition, substitution and elimination reactions of simple organic compounds.
6) Describe and perform basic organic laboratory techniques.

VI. Materials and Resources

Book Url: NSU Book Store

Section Required Texts and Material:

Organic Chemistry; Author: David Klein

Publisher: Wiley; Year: 2015, Edition: 2

ISBN-13: 9781118454312 Microscale Organic Laboratory: with Multistep and Multistep

Author: Mayo, Pike, Forbes; Publisher: Wiley, John & Sons

Year: 2015 Edition: 6

ISBN-13: 9781118083406

Section Recommended Texts and Materials:

Molecular Model Kit

Publisher: Molecular visions (or) Pearson

VII. **Course Schedule and Topic Outline**

Course Schedule:

COURSE SCHEDULE AND TOPIC OUTLINE:

Week of	**Tentative Topic** ***Class schedule subject to modification as needed to meet the flow of concept"***
Aug. 21	**Chapter 1.** A review of general chemistry, **Chapter 2.** Molecular representations
Aug. 28	**Chapter 3.** Acids and Bases**Chapter 4.** Alkanes and cycloalkanes
Sep. 4	**Chapter 4.** *continued,* **Chapter 6.** Chemical reactivity and mechanism
Sept.11	**Chapter 6** *continued,* **Chapter 7.** Substitution reactions
Sept. 18	**Chapter 7.** Continued, **Exam 1**
Sept. 25	**Chapter 8**: Alkenes
Oct 02	**Chapter 8** *continued,* **Chapter 9.** Addition reactions of alkenes
Oct. 09	**Chapter 9.** Continued (midterm week)
Oct. 16	**Chapter 10.** Alkynes, **Exam II**
Oct. 23	**Chapter 10.** Continued, **Chapter 11.** Radical reactions
Oct 30	**Chapter 11** *continued,* **Chapter 12**: Synthesis
Nov. 06	**Chapter 13:** Alcohols and Phenols
Nov. 13	**Chapter 13** *continued,* **Chapter 14**: Ethers and epoxides
Nov. 20	**Chapter 17**: Conjugated Pi systems (other chapters or uncovered chapters will be covered in the lab) **Exam III**
Nov. 27	**Syllabus cover up**
Dec. 05	Final *http://www.fcas.nova.edu/coursewizard/crninfo.cfm?txtTerm=201720&txtCRN=20148*

Tentative Lab Schedule Actual experiments may vary, appropriate information will be provided

Week of	**Lab**	**Chap**	**Description**
Aug. 21	**0**		Instructions, Safety
Aug. 28			Lab Lecture
Sep. 04	**1**	**handout**	Synthesis and purification techniques, Aspirin, Tylenol, Caffeine
Sept.11	**2**	**4, 6.1**	Purification: Crystallization, Melting point
Sept. 18	**3**	**5**	Separation: Simple and Fractional Distillation
Sept. 25	**4**	**5**	Separation: Thin Layer Chromatography

Oct 02	**5**	**6.4C**	Separation: Extraction methods
Oct. 09			Midterm week Lab/ lecture
Oct. 16	**6**	**handout**	Stereochemistry Exercises
Oct. 23	**7**	**handout**	Green Chemistry: Bromination and debromination of Cholesterol
Oct 30	**8**	**7A**	Addition and elimination: Stilbene - to - diphenylacetylene
Nov. 06	**9**	**6.9**	Dehydration of Alcohol
Nov. 13	**10**	**6.14**	Diels Alder Reaction
Nov. 20			No lab or lecture catch up
Nov. 27			Lecture Catch-up
Dec. 04			No Lab

**** This schedule is intended only as a guide. Class schedule subject to modifications as needed during the course of the semester.**

VIII. Assessments

- Exam I, II, III (15% each): 45%
- Final Exam (ACS Exam): 26%
- Homework, Assignments, Quizzes: 4%
- Lab (Pre-lab, in-lab, and post-lab assignments): 25%

IX. Grading Criteria

Grading Scale:

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

X. Course Policies

General Policy:

Lecture:

- Attendance is **required** in all lecture sessions (attendance will be recorded).
- You will be responsible for all the material covered in the class and assigned to read

- Not attending lectures will limit your success in this course. If you miss class, you are responsible for any material and announcements during that class.
- Read assigned material **before** the class and take class notes.
- The more practice on chemistry problems you do the better you will perform in this course. Doing all end-of-chapter problems and studying in groups to review the course material will help tremendously.

Lab:

- Attendance **must be required** in all the lab sessions.
- Not attending lab will result in a zero for that specific lab assignment. **There are no make-up labs**.
- Attend lab sessions and **arrive on time**. You will not have the opportunity to perform a missed experiment in an alternate lab section.
- You must attend the lecture prior to your lab or you will not be allowed complete the laboratory experiment that day.
- **If you do not come to lab with your notebook, lab coat, safety goggles, and closed toe shoes, you will not be allowed to perform the experiment.**
- **Consuming food/drinks during the lab sessions considered against safety rules and strictly prohibited**
- Quizzes will be administered prior to the start of each lab. The quizzes will include concepts that will be covered that day in the lab. Only lab notebooks can be used during a quiz. **There will be no makeup quizzes**.
- You are responsible for pre-lab assignment, pre-lab reading and preparation for performing the experiment in the lab.
- A Pre-Lab assignment is completed prior to the start of each lab experiment and must be hand-written in your laboratory notebook.
- The Post-Lab assignment is due at the start of class exactly one week after the completion of the experiment. **Late lab reports are not accepted**.
- Observe all laboratory safety precautions and procedures. Unsafe behavior in the laboratory will result in immediate dismissal from the lab.
- You are responsible to address any concerns regarding your graded lab reports and quizzes within a week time
- Partners in the lab can share only the data they jointly produce, but each student needs to complete the lab report, including data analysis and report writing, independently. Producing the lab report in any joint effort or fashion by lab partners will be considered plagiarism and will not be tolerated.

General Policies:

- **Communication:** Response to e-mails will be given within 24 hours of time
- Turn off all devices (cell phone, tablet, computer, etc.) during the class and lab.
- You will need a scientific calculator, and during exams it must only be used for computing purposes.
- Recording lectures is not allowed unless you get approval from the instructor.
- **Miss conduct:** Plagiarism and unauthorized use of resources during tests and lab report writing.
- **Unprofessional behavior:** Consuming food during class/lab, consistent late arrival, leaving the class early, talking with others during class/lab, interrupting other students, and going out several times during the class are strictly prohibited
- It is the student's responsibility to take all exams and attend all lab sessions on the scheduled dates. Failure to do so will result in a zero for that exam or that lab session. You will not be allowed to perform lab experiment in an alternate lab section.
- **There will be NO makeup exams, quizzes or labs unless your absence is due to special circumstances beyond your control (documentation in written form must be presented either BEFORE the exam or WITHIN 24 HOURS following the exam).**
- **No exams, quizzes, homework assignments or lab reports will be dropped.** Academic dishonesty (cheating, plagiarism, etc.) on exams, homework assignments and lab reports will be dealt with harsh penalty, at minimum, with a failing grade.

XI. University Policies

Students should visit http://www.nova.edu/academic-affairs/nsu-syllabus-policy.html to access additional required college-wide policies. It is your responsibility to access and carefully read these policies to ensure you are fully informed. As a student in this class, you are obligated to follow these college-wide policies in

addition to the policies established by your instructor.
The following policies are described on this website:

- Academic misconduct
- Last day to withdraw
- Email policy
- Student course evaluations
- Student responsibility to register
- Student responsibility for course prerequisites

Academic Resources

Nova Southeastern University offers a variety of resources that may aid in student success. Among these resources are:

Accommodations for students with documented disabilities: For more information about ADA policy, services, and procedures, students may call the Office of Student Disability Services at 954-262-7189 or visit http://www.nova.edu/disabilityservices.

Tutoring and testing center:

Students are encouraged to use the free, individualized tutoring services offered by the Tutoring and Testing Center (TTC). TTC provides a supportive atmosphere in which tutors and students work collaboratively on improving students' writing, math and/or science skills. http://www.nova.edu/tutoring-testing/index.html