CHEM 2411 - Organic Chemistry I
Course Syllabus - Fall 2017

Individuals with disabilities who need to request accommodations should contact
the Disability Services Coordinator, Student Center 214, 678-466-5445,
disabilityservices@mail.clayton.edu.

Course Description:

Number and Title:

CHEM 2411(CRN 80147)
Organic Chemistry I

Credit Hours:

3.0 semester credit hours

Catalog Description:

A study of the common classes of carbon compounds, including their physical and chemical properties, methods of preparation, and reactions utilizing modern theories of electronic structure and reaction mechanisms.

Course Prerequisite:

CHEM 1212, CHEM 1212L with a grade of C or better.

Course Co-requisite:

Co-requisite: CHEM 2411L.

Note: Due to the co-requisite nature of CHEM 2411 and CHEM 2411L, students dropping one of the two courses must also drop the other.

Notebook Computer Requirement:

Each CSU student is required to have ready access throughout the semester to a notebook computer that meets faculty-approved hardware and software requirements for the student's academic program. Students will sign a statement attesting to such access. For further information on CSU's Official Notebook Computer Policy, please go to http://www.clayton.edu/hub/itpchoice/notebookcomputerpolicy.

Computer Skill Prerequisites:

- Able to use the computer's operation system (Windows®)
- Able to access and send e-mail (Outlook® or Outlook Express®)
- Able to use a Web browser (Internet Explorer®) and search engine
- Able to download files from a web site to your computer
- Able to use a word processor system (Word®)
- Able to use a spread sheet system (Excel®)

In-class Use of Student Notebook Computers:

Student notebook computers will not be used in the classroom in this course. Computers will be required to access course materials and to communicate with your instructor.

Desire2Learn (Online Classroom):

On-line activity will take place in Desire2Learn, the virtual classroom for the course. Posting of your work in D2L is a course requirement.

You can gain access to Desire2Learn, by signing on to the SWAN portal and selecting: "D2L" on the top right side. If you experience any difficulties in Desire2Learn, please email or call The HUB at TheHub@mail.clayton.edu or (678) 466-HELP. You will need to provide the date and time of the problem, your SWAN username, the name of the course that you are attempting to access, and your instructor's name.

Commented [j1]: If you use D2L or other on-line resources where students post work, this section is required.

Commented [JC2]: Required (if applicable to your course). This statement is now required to implement FERPA. If you use other on-line systems besides D2L where students are required to post materials or discussions or complete homework or exams, those sites must also be included in this statement.

Course Objectives:

- To learn the basic principles of organic chemistry.
- To learn organic nomenclature.
- To learn organic reactions and apply them to multistep syntheses.
- To apply basic principles of organic chemistry to predict plausible mechanisms for organic reactions.

Student Learning Outcomes:

General education outcomes:

The Clayton State University Core Curriculum outcomes (see Area D) are located in the Graduation Requirements section of the Academic Catalog and Student Handbook.

Chemistry Outcomes:
CHEM2411 supports outcomes 1, 5 and 6 of the chemistry major:

- Outcome 1: Demonstrate knowledge of the basic principles of major fields of chemistry.
- Outcome 5: Communicate scientific information in a clear and concise manner both orally and in writing.
- Outcome 6: Collect, evaluate and interpret scientific data, and employ critical thinking to solve problems in chemistry and supporting fields.

Biology Outcomes:

- Outcome 3: Knowledge of physical science, mathematics, and statistics required to support an understanding of biology.

Instructor Information:

Dr. Susan F. Hornbuckle
Phone: (678) 466-4780
E-mail: SusanHornbuckle@clayton.edu
Internet: www.susanhornbuckle.com
Office: LDS 235B

Office hours:	9:50 AM - 11:05 AM	T	LDS235B
	11:30 AM - 12:30 PM by appointment*	Th	LDS222
	1:10 PM - 2:10 PM	T	LDS235B
	2:30 PM - 3:30 PM by appointment*	Th	LDS222
	3:00 PM - 4:00 PM by appointment*	T	LDS235B
	8:00 PM - 9:00 PM	M,W	Online

*You may phone, email or talk to me in person to make an appointment.

Class Meetings:

Days	Times	Room
T,Th	8:25 AM - 9:40 AM	LDS 110

Textbook Information:

Text:

Organic Chemistry **(Required)**
by David Klein
Edition 2
ISBN 978-1-118-45228-8

PRENTICE HALL MOLECULAR MODEL SET FOR ORG CHEM **(Required)**
by PRENTICE HALL
Copyright 1984
ISBN 0-205-08136-3

Text Coverage:

Chapters 1 - 8 plus nomenclature from various chapters

Evaluation:

Your evaluation in CHEM2411 will be based upon the following components:

component	points
Classroom Assessments 3 x 100 points	300
Group Homework in D2L 10 x 10 points	100
Comprehensive Final Exam	200
Total	600

Mid-term Progress Report

The mid-term grade in this course which will be issued on October 3rd, reflects approximately 20% of the entire course grade. Based on this grade, students may choose to withdraw from the course and receive a grade of "W." Students pursuing this option must fill out an official withdrawal form, available in the Office of the Registrar, by mid-term, which occurs on October 6th.

Grading:

The grade you receive in Chemistry 2411 will be based upon the following distribution:

letter grade	percentage range
A	90% or greater
B	80% - 89%
C	70% - 79%
D	60% - 69%
F	< 60%

Tentative Course Schedule*:

Date	Topic	Chapter	Suggested Problems (**blue # are in the chapter)** Assigned Group Problems are in D2L.
August 14 - Outside of class **If you do not remember the information covered in these sections from Principles of Chemistry 1 and 2, please come by during my office hours for help.**	Student Review Sections: Electrons, Bonds, and Lewis Structures Induction and Polar Covalent Bonds Atomic Orbitals Valence Bond Theory VSEPR Theory: Predicting Geometry Dipole Moments and Molecular Polarity Intermolecular Forces and Physical Properties Solubilty Acids and Bases	1.3 1.5 1.6 1.7 1.10 1.11 1.12 1.13 3.1	**1: 5-12,** 35,38,42 **1: 15(a-f),16,** 36(a-d),37,48(a-h),57(a-c) **1: 17(a-f),18(a-d),** 44(a-e) **1: 25(a-h),26(a-c),27,28,** 39(a-d),40,41,50(a-e),55,56,58 **1: 29(a-l),30,31,** 37,40,43(a-f),52(a-c),61(a-d),62 **1: 32(a-d),33,** 52,53(a-h),60
August 15, 17	Syllabus and Introduction to Organic Chemistry The Structural Theory of Matter	1.1 1.2	**1: 1-4,** 34(a-f),46,47,54(a-d)

	Formal Charge Drawing Chemical Structures Resonance Curved Arrows in Resonance Formal Charge in Resonance Patterns of Resonance Stability of Contributors Delocalized vs. Localized	1.4 2.1-2.2 2.7 2.8 2.9 2.10 2.11 2.12	**1: 13(a-i),14(a-c),** 41 **2: 1(a-j),2,5(a-l), 6,7,8(a-r),9,10,** 39-41,49(a-h),50, 52,54,57,58(a-f) **2: 21(a-l),22,23(a-h),24(a-d),25(a-h),26(a-d),27(a-c),28(a-c),29,30,32(a-j),33(a-l),34,35,36(a-f),37,38,**44,45,47,48,53,59,60,61,62,65,66
August 22, 24	Organic Classification - Functional Groups Carbon Atoms with Formal Charges Bond-line Structures and Lone Pair Electrons Alkanes (Structures and Nomenclature) Alkyl Halide Nomenclature	 2.3 2.4 2.5 4.1-4.3 7.2	**2: 11** **2: 12,13** **2: 14(a-j),15,16(a-h),17(a-f),18(a-d)**,43 **4: 1(a-i),2-4,5(a-g),6,7(a-e),8,9,10(a-q),11,14,15,**39(a-d),40(a-d),41(a-d),42,45 **7: 1,** 36
August 29 -31	Cycloalkane Nomenclature including cis & trans Alkanes and Their Stereochemistry	4.14 4.4-4.8 4.9-4.13	**4: 36-38** **4: 16-21,** 43,44,46,47,50-52,56,58-60 **4: 22-30,31(a-h),32,33(a-f),34,35,** 48,49,53,54(a-d),55(a-d),57,66(a-l)

	Cycloalkanes and Their Stereochemistry		
September 5, 7	Stereochemistry	5.1 - 5.3	**5: 1-4, 7-11,** 32-35,36(c,d,e,f,i),38, 39,45,48
September 12**	**EXAM 1**		
September 14,19	Stereochemistry	5.4-5.12	**5: 12-18, 21,** 22-30, 37,40-44,46-47, 50-54,55(a-c), 56,62-67
September 21,26	*Hybrid Orbitals Alkene Nomenclature including cis & trans and E & Z Designation Alkyne Nomenclature	1.9 8.3-8.4 10.2	**1: 19-24,** 51,55(a-c),56,58 **8: 4-6,** 50a,b,51 **17:** 32a-e (diene problems) **10: 1-4,** 35a-d,36a-c
September 28, October 3	Alcohol and Phenol Nomenclature Aldehyde and Ketone Nomenclature Ether Nomenclature Aromatic Nomenclature (Phenyl, Benzyl)	13.1 20.2 14.2 18.2	**13: 1a-e, 2a, 2b**, 30a-d, 31a-f, 32 **20: 1a-e, 2a-c, 4**, 44a-d, 45a-I, 46-49 **14: 1a-e, 2a, 2b, 3,** 30a-f, 32 **18: 1a-e, 3a, 3b,** 28a-e, 29a-f, 30-33
October 5	Acids and Bases	3.1-3.9	**3: 1-35,** 36(a-h),37(a-h),38-40,42,44-46,47(a-h),48-50,51(a-h),52-54,57-61
October 10	**Fall Break - No Class**		
October 12,17	Acids and Bases continued		
October 19, 24, 26	An Overview of	6.1-6.10	**6: 1-13,** 14-41, 42 -48,53,54

	Organic Reactions		
October 31**	**EXAM II**		
November 2	Carboxylic Acids Nomenclature Carboxylic Acid Derivatives Nomenclature Amine Nomenclature	21.2 21.6 23.2	**21:1(a-f),2(a-c),3(a-c),**41(a-g),43 **21:12(a-i),13(a-d),**42,44 **23:1(a-f),2(a-e),3,**42(a-d),45(a-f),46,47
November 7,9,14	Substitution Reactions	7.1,7.3--7.9	**7: 2-7(a-c),8,9(a-d),10,11,13—15,16(a-c),17--20, 21(a-h),22,23,24(a-d),26-30,31(a-f),33(a-h),34,**38-53,54(a-d),55(a-d),56-58,59(a-e),60(a-f),61-63(a-c),64-68
November 16,21,28,30	Alkenes: Structure and Preparation	8.1-8.2, 8.5-8.14	**8: 4,7,9(a-c),10(a-c),11-14,15(a-f),16,17,18(a-f),19-21,22(a-f),23-28,29(a-d),30-33,34(a-d),35,36,37(a-c),39,40-45,46(a-n),47-49,**52,54-60,61(a-d),62-65,66(a-e),67(a-d),68-71,73-75,76(a-e),77(a-l),78,79(a-j),83
November 23	Thanksgiving Holiday		
November 30**	**EXAM III**		
December 5th, 8:00AM	**FINAL EXAM (Cumulative)**		

*The instructor reserves the right to alter the course schedule at any time during the semester.

Exams will be announced **in class as least one week before each assessment.

Important Dates	
Last day to withdraw with academic penalty	October 6th
Labor Day	September 2nd - 4th
Fall Break	October 7th and 10th

Thanksgiving Break	November 22nd - 25th
Last day of class	December 4th
Final Exam	December 5th, 8:00 AM-10:00 AM

Course Policies:

Homework:

I. **Some lecture materials will be posted as video lectures. It is imperative that students watch these videos when assigned before coming to class. The knowledge will be needed to do group activities and individual activities in class.**

II. Each student will be assigned to a group at the start of the semester. Groups will be assign problems for each chapter (and nomenclature). The following process shall occur for each assignment:

1. Each member of the group should work all of the assigned group problems.

2. The group should meet to compare answers.

3. Once answers are agreed upon, the group should divide up the problems as evenly as possible and each group member should post the answers to these questions on the appropriate discussion board in D2L. This will typically require taking a picture of your work or scanning it to create the post. Deadlines for this step will be posted in D2L and announced in class. (6 points)

4. Each student should then comment on at least 8 problems posted by other groups. Deadlines for this step will be posted in D2L and announced in class. (4 points)

Students are encouraged to work all recommended problems listed in the syllabus.

Attendance:

Class roll will be taken, however, attendance is not required except for classroom assessments. You are responsible for all attendance requirements for external programs (i.e. financial aid). It is your responsibility to sign the roll sheet at every class meeting you attend. This roll sheet is the instructor's official record. You will be held responsible for all announcements and material covered in lecture in addition to text, references, hand-outs and study guides. Note: Lectures will contain valuable

explanations of content and thought processes which are difficult for most students to extract from the text book on their own. Therefore, regular attendance is strongly encouraged.

Academic Irregularity:

Academic Dishonesty

Any type of activity that is considered dishonest by reasonable standards may constitute academic misconduct. The most common forms of academic misconduct are cheating and plagiarism. All instances of academic dishonesty will result in a grade of zero for the work involved. All instances of academic dishonesty will be reported to the Office of Community Standards. Judicial procedures are described in the section of the Academic Catalog and Student Handbook titled, Procedures for Adjudicating Alleged Academic Conduct Infractions.

Commented [j3]: Required. Include a statement similar to this in your syllabus. Use the links provided.

Disruption of the Learning Environment:

Behavior which disrupts the teaching–learning process during class activities will not tolerated. While a variety of behaviors can be disruptive in a classroom setting, more serious examples include belligerent, abusive, profane, and/or threatening behavior. A student who fails to respond to reasonable faculty direction regarding classroom behavior and/or behavior while participating in classroom activities may be dismissed from class. A student who is dismissed is entitled to due process and will be afforded such rights as soon as possible following dismissal. If found in violation, a student may be administratively withdrawn and may receive a grade of WF. A more detailed description of examples of disruptive behavior and appeal procedures is provided at: http://a-s.clayton.edu/DisruptiveClassroomBehavior.htm

Weapons on Campus

Clayton State University is committed to providing a safe environment for our students, faculty, staff, and visitors. Information on laws and policies regulating weapons on campus are available at http://www.clayton.edu/public-safety/Safety-Security/Weapons

Commented [JC4]: Required – Please add this statement and the link to your syllabus.

Assessments:

There will be three classroom assessments and one 2-hour final (comprehensive). The assessments will be announced approximately one week in advance whenever possible and attendance is mandatory. If a student has an excused absence on an exam day, the student's final exam percentage score will be used in place of the missed exam score. No make-up exams will be given.

Grades will not be communicated via email or telephone. Exams will be handed back in the next lecture period after an exam. If absent, a student must come by during office hours to retrieve their exam. Final exam papers may be viewed the following semester during office hours.

Other Class Policies:

"Students must abide by policies in the Clayton State University Student Handbook, and the Basic Undergraduate Student Responsibilities."

- Arrive to class on time.
- Avoid disruptive behavior in class: talking, snoring, children, etc.
- Turn off phones, computers and other electronic devices.
- If you must leave early, leave quietly by a back door if possible.
- Use the pencil sharpener before class begins.
- No eating, smoking or drinking in the classrooms.
- No extra credit work will be assigned.

Last update: August 16, 2011
