Syllabus

CHE*K211 Organic Chemistry I
Three Rivers Community College
Norwich, CT 06360

Instructor: Michael P. Carta, M.S.
Professor of Chemistry

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Office hours: M 1:00-2:00 p.m.
T 2:00-3:00 p.m.
R 11:00 a.m.-12:00 p.m.

Course Description: CHE* K211 - Organic Chemistry I
4 CREDIT HOURS
Prerequisites: CHE K121 and CHE* K122, courses passed with a "C" grade or better.*
This course is a comprehensive study of organic compounds. Topics covered will include bonding, formulation and molecular shapes of organic molecules, reaction mechanisms, and nomenclature. Reactions of alkanes, cyclolkanes, alkenes, alkynes, and aromatic hydrocarbons will be presented. The laboratory exercises will be integrated with the theory through preparations and reactions. Three-hour lecture; one three-hour lab period each week.

Lecture (CRN 33357): M 6:00-8:45 p.m. Room E225

Lab (CRN 33358): W 6:00-8:55 p.m. Room B222

Text: *Organic Chemistry*, 5th ed., Smith. McGraw-Hill.

McGraw-Hill Connect: http://connect.mheducation.com/class/m-carta-fall2018

Lab Manual: *A Microscale Approach to Organic Laboratory Techniques*, Pavia, et. al., 6th ed., Cengage. On reserve from TRCC library.

Other Required Materials: Chemical safety goggles, scientific calculator.

Learning Portfolio: All students are required to maintain an online learning portfolio in Digication that uses the college template.

Disabilities Notice:
If you have a disability that may affect your progress in this course, please meet with a Disability Service Provider (DSP) as soon as possible. Please note that accommodations cannot be provided until you provide written authorization from a DSP.

College Disabilities Service Providers	
Matt Liscum, Counselor (860) 215-9265 Room A113	• Learning Disabilities • ADD/ADHD • Autism Spectrum • Mental Health Disabilities
Elizabeth Willcox, Advisor (860) 215-9289 Room A113	• Medical Disabilities • Mobility Disabilities • Sensory Disability

Board of Regents for Higher Education and Connecticut State Colleges and Universities Policy Regarding Sexual Misconduct Reporting, Support Services and Processes Policy:

Public Act No. 14-11: An Act Concerning Sexual Assault, Stalking and Intimate Partner Violence on Campus:
"The Board of Regents for Higher Education (BOR) in conjunction with the Connecticut State Colleges and Universities (CSCU) is committed to insuring that each member of every BOR governed college and university community has the opportunity to participate fully in the process of education free from acts of sexual misconduct, intimate partner violence and stalking."

Title IX Statement of Policy:
"Title IX of the Education Amendments Act of 1972 protects students, employees, applicants for admission and employment, and other persons from all forms of sex discrimination, including discrimination based on gender identity or failure to conform to stereotypical notions of masculinity or femininity. All students are protected by Title IX, regardless of their sex, sexual orientation, gender identity, part or full-time status, disability, race, or national origin, in all aspects of educational programs and activities." Please Report Student Incidents to: Maria Krug, Title IX Coordinator, Three Rivers Community College, 574 New London Turnpike Norwich, CT 06360 Room C131, (860) 215-9208, **mkrug@trcc.commnet.edu**

Non-discrimination policy:
Three Rivers Community College does not discriminate on the basis of race, color, religious creed, age, sex, national origin, marital status, ancestry, present or past history of mental disorder, learning disability or physical disability, sexual orientation, gender identity and expression, or genetic

information in its programs and activities. In addition, the College does not discriminate in employment on the basis of veteran status or criminal record.
The following person has been designated to handle inquiries regarding the non-discrimination policies: Ken Saad, Equity and Diversity Officer, Three Rivers Community College, 574 New London Turnpike Norwich, CT 06360, (860) 215-9319, **KSaad@trcc.commnet.edu**

Academic Integrity:
Academic integrity is essential to a useful education. Failure to act with academic integrity severely limits a person's ability to succeed in the classroom and beyond. Furthermore, academic dishonesty erodes the legitimacy of every degree awarded by the College. In this class and in the course of your academic career, present only your own best work; clearly document the sources of the material you use from others; and act at all times with honor.

Academic and Classroom Misconduct:
The instructor has primary responsibility for control over classroom and laboratory behavior and maintenance of academic integrity, and can request the temporary removal or exclusion from the classroom or laboratory of any student engaged in conduct that violates the general rules and regulations of the institution, or any student engaged in conduct deemed hazardous in the laboratory. Extended or permanent exclusion from lecture or laboratory activities or further disciplinary action can only be effected through appropriate procedures of the institution. Plagiarism, cheating on quizzes or tests, or any form of academic dishonesty is strictly prohibited. Students guilty of academic dishonesty directly or indirectly will receive a zero for the exercise or quiz or test and may receive an "F" grade for the course in addition to other possible disciplinary sanctions which maybe imposed through the regular institutional procedures. Any student that believes that he or she has been erroneously accused may appeal the case through the appropriate institutional procedures if their grade was affected.

Class Attendance Policy:
Attendance of all lecture and laboratory periods is required. Attendance is taken at each class meeting, usually at the start of class. Students should make every effort to arrive on time. However, if you are late for class it is your responsibility to notify me so you are not marked absent. An explanation of the cause of any absence should be provided prior to the next class meeting (or in advance if it applies).

Course Withdrawal:
- Course withdrawals are recommended if you cannot complete the course and are accepted up until the week before classes end.
- Specific deadline dates are posted in the academic calendar and are strictly enforced.
- A grade of "W" will be assigned after you formally withdraw.
- If you stop attending classes without withdrawing, a grade of "W" will not be automatically assigned. Neglecting to withdraw may result in a grade of "F".
- It is strongly advised that you speak with your instructor before withdrawing. Instructor signature is not required to withdraw.

Revisions to the Syllabus:
Students are responsible for learning all of the course objectives and material discussed in lecture and lab. The instructor reserves the right to revise the objectives or academic schedule contained in this syllabus as necessary.

Make-Ups:
Make-ups are granted only if a test is missed due to extenuating circumstances such as illness, bereavement, work commitment, travel emergency, or other condition beyond the control of the student. Students must contact the instructor as soon as possible, prior to the next class meeting to explain the absence and arrange for a make-up. Labs can only be made up during the same week if another instructor can accommodate the student.
NOTE: Students with documented testing accommodations should schedule tests well in advance to ensure seat availability.

- Testing Center: Room A117. Phone 860-215-9061. Email: testing@threerivers.edu
- Students can also schedule make-ups via the school website, under student services/placement testing.

Cell phones and other electronic devices: Electronic devices must be silenced at all times. Under no circumstances are phones to be answered in class. When there are extenuating circumstances requiring a student to be available by phone, the student must notify the instructor prior to class, so that together they can arrive at an agreement. *A cell phone is not permitted as a substitute for a calculator on exams.*

Grade Determination:

Lecture (33357): Based on 4 exams (80%) and homework in *Connect* (20%)- **75% of overall grade**.

Lab (33358): Based on lab notebook (80%) and lab final exam (20%)- **25% of overall grade**.

EXAMPLE:

33357	Exams				sum	80%		Connect	20%		Lect Point total	75%
	100	100	100	100	400	320		1320	264		584	438
33358	Exps					80%		Lab exam	20%		Lab Point total	25%
	100					80		100	20		100	25
											Course Total	AVG
											463	**100**
33357	Exams				sum	80%		Connect	20%		Lect Point total	75%
	86	92	84	79	341	272.8		1210	242		514.8	386.1
33358	Exps					80%		Lab exam	20%		Lab Point total	25%
	90					72		83	16.6		88.6	22.15
											Course Total	AVG
											408.25	**88.17**

Grade Scale:

A ≥ 94	B+ 87-89	C+ 77-79	D+ 67-69
A- 90-93	B 84-86	C 74-76	D 64-66
	B- 80-83	C- 70-73	D- 60-63
			F ≤ 59

Course Objectives:

1. The student will be able to list the major classes of organic compounds.
2. The student will be able to write condensed and structural formulas for saturated and unsaturated hydrocarbons, including cyclic hydrocarbons.
3. The student will be able to apply the I. U. P. A. C. rules for naming saturated and unsaturated hydrocarbons, including cyclic hydrocarbons.
4. The student will be able to draw structures of simple organic compounds.
5. The student will be able to describe the structure and properties of organic compounds.
6. The student will be able to describe the basic structural differences between aliphatic and aromatic compounds.
7. The student will understand the physical and chemical properties of alkenes, alkanes, and alkynes.
8. The student will be able to write and understand basic reaction mechanisms.
9. The student will be able to distinguish between constitutional and stereoisomers and give examples of each type.
10. The student will understand the covalent bonding in organic compounds containing single, double, and triple bonds.
11. The student will be able to predict the molecular geometry of various organic compounds.
12. The student will be able to write the structure formulas of various hydrocarbon derivatives including alcohols, phenols, halides, amines, carboxylic acids, amides, ethers, aldehydes, ketones, and esters.
13. The student will understand the concept of resonance.
14. The student will be able to distinguish between substitution, addition, and elimination reactions and give examples of each.
15. The student will understand reaction coordinate diagrams, activation energy, transition state, and reaction intermediate.

Lab-related:

16. The student will be able to purify organic compounds by recrystallization and distillation.
17. The student will be able to measure melting points of organic compounds.
18. The student will be able to analyze compounds and reactions by thin-layer chromatography.
19. The student will be able to analyze compounds and reactions by gas chromatography.
20. The student will understand the basics of liquid chromatography.
21. The student will be able to perform liquid-liquid extraction using a separatory funnel.
22. The student will be able to interpret IR, NMR, MS, and UV spectra.
23. The student will be able to use molecular models to explain structural features of molecules.
24. The student will be able to calculate theoretical and percent yields of organic reactions.
25. The student will be able to synthesize selected organic compounds.
26. The student will be able to document laboratory exercises in a laboratory notebook.

CHE*K211 Organic Chemistry I- Tentative Academic Schedule FA18
33357 Lecture: M 6:00-8:45 p.m. E225
33358 Lab: W 6:00-8:55 p.m. B222

week 1
M 8/27
W 8/29 Syllabus/Lab orientation/Safety/Lecture: Ch 1- Structure and Bonding.

week 2
9/03 LABOR DAY- College closed.
9/05 Lecture: Ch 1- Structure and Bonding/Ch 2- Acids and Bases.

week 3
9/10 Lecture: Ch 2- Acids and Bases.
9/12 Lab: Solubility

week 4
9/17 Lecture: Ch 3- Introd to Organic Molecules and Functional Groups.
9/19 Lab: Liquid-Liquid Extraction

week 5
9/24 **Exam 1** (Ch 1-3)
9/26 Lab: Recrystallization and Melting Points

week 6
10/01 Lecture: Ch 4- Alkanes.
10/03 Lab: Thin-layer Chromatography

week 7
10/08 Lecture: Ch 5- Stereochemistry.
10/10 Lab: Distillation

week 8
10/15 Lecture: Ch 6- Understanding Organic Reactions.
10/17 Lab: IR, MS, and NMR/Review laboratory notebooks.

week 9
10/22 **Exam 2** (Ch 4-6)
10/24 Lab: Synthesis of Isopentyl Acetate (banana oil).

week 10
10/29 Lecture: Ch 7- Alkyl Halides and Nucleophilic Substitution.
10/31 Lab: S_N1 and S_N2 Reactions

week 11
11/05 Lecture: Ch 8- Alkyl Halides and Elimination.
11/07 Lab: Preparation of 4-Methylcylcohexene

week 12
11/12 **Exam 3** (Ch 7-8)
11/14 Lecture: Ch 9- Alcohols, Ethers, and Related compounds.

week 13
11/19 Lecture: Ch 10- Alkenes.
11/21 CLASSES NOT IN SESSION

week 14
11/26 Lecture: Ch 11- Alkynes.
11/28 Lab: Isolation of Caffeine from Tea

week 15
12/03 Lecture: Ch 12- Oxidation and Reduction.
12/05 Lab: Steam Distillation/Isolation of Clove Oil

week 16
12/10 **Exam 4** (Ch 9-12)
12/12 **Lab Final**/Review of laboratory notebooks.