Syllabus for
CHE 212--Organic Chemistry II Lecture
3 Credit Hours
Spring 2016

I. COURSE DESCRIPTION

A treatment of organic reactions and mechanisms as applied to synthesis. Gives special emphasis to spectroscopic methods of molecular structural identification. Emphasizes the major functional groups and arene chemistry.
Prerequisites: CHE 211 Lecture and Lab.
Co requisite: CHE 212 Lab.

II. COURSE GOALS

The purpose of this course is to provide students with the knowledge of organic reactions of various functional groups. The course gives students the opportunities to understand the relationship between the chemical structures of molecules and their functions. The course is an excellent preparation for the Medical College Admissions Test and for the Graduate Record Exam.

The CHE 212 is designed for both chemistry majors and non-majors. The primary concern of this course is with organic reaction mechanisms. The biological and medicinal applications of significant reactions of various functional groups are emphasized. The application of spectroscopy (IR, UV, NMR, MS) for the solution of organic and biological structural problems is discussed

III. STUDENT LEARNING OUTCOMES FOR THIS COURSE

Terminal Objectives
As a result of successfully completing this course, the student will be able to do the following:

A. Discuss the structure of benzene, electrophilic aromatic substitution, and arenes.

B. Plan a Grignard synthesis and discuss the synthesis and reactions of alcohols and ethers.

C. Discuss and apply the principles of IR, NMR and MS to organic molecules.

D. Describe the synthesis and reactions of the major carbonyl compounds: aldehydes and ketones, carboxylic acids, and the derivatives of carboxylic acids.

E. Describe the preparation and reactions of amines and phenols; describe the synthesis of several polymers.

IV. TEXTBOOKS AND OTHER LEARNING RESOURCES

A. Required Textbooks

1. Smith, Janice Gorzynski, Organic Chemistry, 4th Ed., New York, New York: McGraw-Hill, 2011 ISBN: 978-0-07-340277-2 with ConnectPlus.
2. Smith, Janice Gorzynski, Student Study Guide/Solutions Manual to accompany Organic Chemistry, 2nd Ed.: ISBN: 978-0-07-304987-8.

B. Optional Materials

1. Molecular Model kit from W. B. Benjamin Company or similar.

V. POLICIES AND PROCEDURES

A. University Policies and Procedures

1. Attendance at each class or laboratory is mandatory at Oral Roberts University. Excessive absences can reduce a student's grade or deny credit for the course.
2. Students taking a late exam because of an unauthorized absence are charged a late exam fee.
3. Students and faculty at Oral Roberts University must adhere to all laws addressing the ethical use of others' materials, whether it is in the form of print, electronic, video, multimedia, or computer software. Plagiarism and other forms of cheating involve both lying and stealing and are violations of ORU's Honor Code: "I will not cheat or plagiarize; I will do my own academic work and will not inappropriately collaborate with other students on assignments." Plagiarism is usually defined as copying someone else's ideas, words, or sentence structure and submitting them as one's own. Other forms of academic dishonesty include (but are not limited to) the following:
   a. Submitting another's work as one's own or colluding with someone else and submitting that work as though it were his or hers;
   b. Failing to meet group assignment or project requirements while claiming to have done so;
   c. Failing to cite sources used in a paper;
   d. Creating results for experiments, observations, interviews, or projects that were not done;
   e. Receiving or giving unauthorized help on assignments.

   By submitting an assignment in any form, the student gives permission for the assignment to be checked for plagiarism, either by submitting the work for electronic verification or by other means. Penalties for any of the above infractions may result in disciplinary action including failing the assignment or failing the course or expulsion from the University, as determined by department and University guidelines.
4. Final exams cannot be given before their scheduled times. Students need to check the final exam schedule before planning return flights or other events at the end of the semester.
5. Students are to be in compliance with University, school, and departmental policies regarding the Whole Person Assessment requirements. Students should consult the Whole Person Assessment handbooks for requirements regarding general education and the students' majors.
   a. The penalty for not submitting electronically or for incorrectly submitting an artifact is a zero for that assignment.
   b. By submitting an assignment, the student gives permission for the assignment to be assessed electronically.

B. School and/ or Department Policies and Procedures

1. The Department of Biology and Chemistry adheres to the Assessment policy concerning plagiarism as described in the University Catalog, "Written assignments using sources must demonstrate ethical and accurate use of source material. Plagiarism and any unethical or inappropriate use of sources are not

tolerated."

2. The following assessment actions will be taken in the of event of documented instances of plagiarism on written assignments, copying of homework assignments, or cheating during examinations:
   a. An automatic zero will be given for the assignment or exam.
   b. The original assignment or exam will be kept in the student file and a copy will be given to the student. This could have a negative impact on letters of reference and admission to graduate schools and other postgraduate programs.
   c. The Department of Biology and Chemistry will take repeated offences as grounds for further action.
3. Any Whole Person Assessment activity required in this course must be completed and assessed prior to the end of the semester to receive credit for that assignment, otherwise the assignment will receive a grade of zero. Refer to the General Education Whole Person Assessment handbook and/or the Department of Chemistry handbook for more information at http://eportfolio.oru.edu.

C. Course Policies and Procedures

1. Evaluation Procedures
   a. Grading System

Calculation of Points	Points
4 Hour Exams (4x150)	400
Connect Homework Assignments	100
In-class Quizzes	200
Final	200
Total	1000

   b. Final letter grades are calculated based on the grade distribution curve of total points for the course:
   90-100 = A; 80-89 = B; 70-79 = C; 60-69 = D; Below 60 = F
   The research paper is an assignment which will be submitted via ePortfolio and will represent 10% of the course grade.

2. Whole Person Assessment Requirements
   a. [CHE, BMC majors only]
   The research paper is a Whole Person Assessment requirement for this class.
   b. Depending on student enrollment in Whole Person Assessment the assignment should be submitted directly to WPA or given directly to the instructor for evaluation. Students failing to submit the assignment correctly will receive a grade of zero.

3. Other Policies and /or Procedures
   The instructor reserves the right to change the syllabus.

VI. COURSE CALENDAR

Refer to the handout in class for the detailed class schedule.

	TOPICS
1.	Nuclear Magnetic Resonance Spectroscopy
2.	Radical Reactions
3.	Conjugation, Resonance and Dienes
4.	Aromatic compounds and Electrophilic Substitution
5.	Carboxylic Acids and Derivatives
6.	Carbonyl Compounds: Aldehydes and Ketones Addition and Substitution Reactions
7.	Condensation Reactions
8.	Amines

Course Inventory for ORU's Student Learning Outcomes

Organic Chemistry II Lecture - CHE 212
Spring 2016

This course contributes to the ORU student learning outcomes as indicated below:
Significant Contribution – Addresses the outcome directly and includes targeted assessment.
Moderate Contribution – Addresses the outcome directly or indirectly and includes some assessment.
Minimal Contribution – Addresses the outcome indirectly and includes little or no assessment.
No Contribution – Does not address the outcome.

The Student Learning Glossary at http://ir.oru.edu/doc/glossary.pdf defines each outcome and each of the proficiencies/capacities.

OUTCOMES & Proficiencies/Capacities		Significant Contribution	Moderate Contribution	Minimal Contribution	No Contribution
1	**Outcome #1 – Spiritually Alive** Proficiencies/Capacities				
1A	Biblical knowledge			X	
1B	Sensitivity to the Holy Spirit			X	
1C	Evangelistic capability			X	
1D	Ethical behavior		X		
2	**Outcome #2 – Intellectually Alert** Proficiencies/Capacities				
2A	Critical thinking	X			
2B	Information literacy	X			
2C	Global & historical perspectives		X		
2D	Aesthetic appreciation			X	
2E	Intellectual creativity	X			
3	**Outcome #3 – Physically Disciplined** Proficiencies/Capacities				
3A	Healthy lifestyle				X
3B	Physically disciplined lifestyle				X
4	**Outcome #4 – Socially Adept** Proficiencies/Capacities				
4A	Communication skills		X		
4B	Interpersonal skills			X	
4C	Appreciation of cultural & linguistic differences			X	
4D	Responsible citizenship	X			
4E	Leadership capacity			X	