ORGANIC CHEMISTRY II – CHEM 3412.001
Department of Physical and Environmental Sciences
Summer II 2015

A. COURSE INFORMATION
Course number/section: #55003 / 001
Class meeting time: MTWR – 10:00-11:55
Class location: CS-115
Course Website: Organic Chemistry II at the University Catalogue

B. INSTRUCTOR INFORMATION
Instructor: Dr. Cesar A. Marquez
Office location: CS-206
Office hours: F – 10:00-14:00
Telephone: (361) 825 5701
e-mail: cesar.marquez@tamucc.edu
Appointments: By email

C. COURSE DESCRIPTION
This course is a continuation of CHEM 3411. The course concludes with a survey of the structures of biomolecules. Laboratory involves spectroscopy and qualitative analysis techniques.

Extended Course Description
The course covers the structure, nomenclature, synthesis, reactions and reaction mechanisms of the principal classes of organic compounds. It also includes stereochemistry and spectroscopy of organic compounds. It is designed for the science major.

D. PREREQUISITES AND COREQUISITES
Prerequisites
CHEM 3411. Safety training given during a laboratory meeting early in the semester is required for continued participation in this course.

E. REQUIRED TEXTBOOK(S), READINGS AND SUPPLIES
Required Textbook(s)
Organic Chemistry by John McMurry; 8th ed.; Brooks Cole Publisher (reqd.) and Study Guide.

F. STUDENT LEARNING OUTCOMES AND ASSESSMENT
Assessment is a process used by instructors to help improve learning. Assessment is essential for effective learning because it provides feedback to both students and instructors. A critical step in this process is making clear the course’s student learning outcomes that describe what students are expected to learn to be successful in the course. The student learning outcomes for the course are listed below. By collecting data and sharing it with students on how well they are accomplishing these learning outcomes students can more efficiently and effectively focus their learning efforts. This information can also help instructors identify challenging areas for students and adjust their teaching approach to facilitate learning.
By the end of this course, students should be able to:

- Molecular spectroscopy for the identification and characterization of organic compounds (Nuclear Magnetic Resonance Spectroscopy, Mass Spectrometry, Infrared Spectroscopy, and UV-Vis Absorption Spectroscopy)
- Molecular functionality
- Rational design of synthetic protocols
- The chemistry of aromatic systems, ethers, aldehydes, ketones, carboxylic acids, carboxylic acid derivatives, nitrogen containing functional groups, and heterocycles
- Prediction of synthesis products
- Reaction mechanisms
- Multi-step molecular synthesis and retrosynthesis

G. INSTRUCTIONAL METHODS AND ACTIVITIES
The course implement high-impact practices (HIPs) such as ‘weekend challenges’ and ‘real life’ applications of course material, to encourage my students’ engagement with their studies both in and out of the classroom. Although its lecture style necessarily adapts to class size, it is in general based upon a constructivist approach where the acquisition of knowledge is conceived as a student-centered and dynamic process, rather than objective and static.

H. MAJOR COURSE REQUIREMENTS AND GRADING
The course includes lectures and laboratories. They will be graded separately, and the final course grade (100pts) will consider the following distribution:

Lecture (75% of the final course grade): There will be a final exam and it is comprehensive (50%). Weekly exams (25%, 5% each) will include the material that has been covered in class by that time. Attendance is mandatory and it will not be considered when grading.

Laboratory (25% of the final course grade): After completed all lab assignments and exam, you will be assigned a lab grade by your lab instructor. All complaints and concerns about the lab grade should be directed to the lab instructor. You will receive more information about the Organic Chemistry II Laboratory Course (CHEM-3412.10X) in the lab syllabus.

<table>
<thead>
<tr>
<th>ACTIVITY</th>
<th>% of FINAL GRADE</th>
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<tbody>
<tr>
<td>Weekly Exams</td>
<td>25</td>
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<tr>
<td>Final Exam</td>
<td>50</td>
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<tr>
<td>Lab Assignments</td>
<td>25</td>
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I. COURSE CONTENT/SCHEDULE
The schedule below is a preliminary outline of the course. It is your responsibility to keep up with changes to this schedule. The reading and problems assignments that will be assigned in class should be completed before the next class meeting. Failure to stay current on reading and problem assignments will greatly affect your ability to keep up during lecture and, therefore, will have an indirect affect on your grade in this course.
<table>
<thead>
<tr>
<th>DAY – DATE</th>
<th>TOPIC</th>
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<tbody>
<tr>
<td>01 - 07/06</td>
<td>Structure Determination: Mass Spectrometry and Infrared Spectroscopy</td>
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<tr>
<td>02 - 07/07</td>
<td>Structure Determination: Nuclear Magnetic Resonance Spectroscopy</td>
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<td>03 - 07/08</td>
<td>Conjugated Compounds and Ultraviolet Spectroscopy</td>
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<tr>
<td>04 - 07/09</td>
<td>Exercises - Exam 01</td>
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<td>05 - 07/13</td>
<td>Benzene and Aromaticity</td>
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<td>06 - 07/14</td>
<td>Chemistry of Benzene: Electrophilic Aromatic Substitution</td>
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<td>07 - 07/15</td>
<td>Alcohols and Phenols</td>
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<td>08 - 07/16</td>
<td>Exercises - Exam 02</td>
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<td>09 - 07/20</td>
<td>Ethers and Epoxides; Thiols and Sulfides</td>
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<td>10 - 07/21</td>
<td>Aldehydes and Ketones: Nucleophilic Addition Reactions</td>
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<td>11 - 07/22</td>
<td>Carboxylic Acids and Nitriles</td>
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<td>12 - 07/23</td>
<td>Exercises - Exam 03</td>
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<td>13 - 07/27</td>
<td>Carboxylic Acid Derivatives: Nucleophilic Acyl Substitution Reactions</td>
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<tr>
<td>14 - 07/28</td>
<td>Carbonyl Alpha-Substitution Reactions</td>
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<tr>
<td>15 - 07/29</td>
<td>Carbonyl Condensation Reactions</td>
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<tr>
<td>16 - 07/30</td>
<td>Exercises - Exam 04</td>
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<td>17 - 08/03</td>
<td>Amines and Heterocycles</td>
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<td>18 - 08/04</td>
<td>Reaction Mechanisms</td>
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<td>19 - 08/05</td>
<td>Multi-step Molecular Synthesis and Retrosynthesis</td>
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<td>20 - 08/06</td>
<td>Exercises - Exam 05</td>
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<td>21</td>
<td>Final Exam</td>
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Note: Changes in this course schedule may be necessary and will be announced to the class by the instructor. The assignments and exams shown are directly related to the Student Learning Outcomes described in Section F.

J. COURSE POLICIES

Attendance/Tardiness
The student is expected to be on time and attend every class. If absent, it is the responsibility of the student to obtain missed information from a classmate. Missed information includes not only lecture notes, but also any possible information regarding syllabus changes. The student is expected to arrive on time prepared to take notes, i.e., with pen, paper, and colored markers/pencils.

Late Work and Make-up Exams
There is no make-up exam for this class. Students with a university approved scheduled absence (athletics, military duty, etc.) MUST contact the instructor well in advance of the scheduled absence. Exams may be taken early in those specific cases. Students who do not arrange to take the exam ahead of time will not be eligible for this special consideration. A written excuse from the university department involved or the Office of the Dean of Students is required.
Extra Credit
There is no extra credit in this course.

Cell Phone Use
Before you enter the lecture hall turn OFF your cellular phone! Beepers must also be turned off or put on silent mode. Electronic interruptions absolutely will NOT be tolerated.

Laptop Use
Laptops are allowed in this course. Before you enter the lecture hall turn OFF the volume.

Food in Class
Food is allowed in this course.

Missed Exam
Students who do not arrange to take the exam ahead of time will not be eligible for this special consideration. A written excuse from the university department involved or the Office of the Dean of Students is required.

Participation
Students are expected to participate during the classes, this way contributing to the learning process of the group. The classes are designed as an active environment where every new concept is applied to real synthetic examples. The students are expected to participate as a team, applying critical thinking to the resolution of the different practical challenges proposed.

K. COLLEGE AND UNIVERSITY POLICIES

Academic Integrity (University)
University students are expected to conduct themselves in accordance with the highest standards of academic honesty. Academic misconduct for which a student is subject to penalty includes all forms of cheating, such as illicit possession of examinations or examination materials, falsification, forgery, complicity or plagiarism. (Plagiarism is the presentation of the work of another as one’s own work.) In this class, academic misconduct or complicity in an act of academic misconduct on an assignment or test will result in a failing grade.

Classroom/Professional Behavior
Texas A&M University-Corpus Christi, as an academic community, requires that each individual respect the needs of others to study and learn in a peaceful atmosphere. Under Article III of the Student Code of Conduct, classroom behavior that interferes with either (a) the instructor’s ability to conduct the class or (b) the ability of other students to profit from the instructional program may be considered a breach of the peace and is subject to disciplinary sanction outlined in article VII of the Student Code of Conduct. Students engaging in unacceptable behavior may be instructed to leave the classroom. This prohibition applies to all instructional forums, including classrooms, electronic classrooms, labs, discussion groups, field trips, etc.

Statement of Civility
Texas A&M University-Corpus Christi has a diverse student population that represents the population of the state. Our goal is to provide you with a high quality educational experience that is free from repression. You are responsible for following the rules of the University, city, state and federal government. We expect that you will behave in a manner that is dignified, respectful and courteous to all people, regardless of sex, ethnic/racial origin, religious background, sexual orientation or disability. Behaviors that infringe on the rights of another individual will not be tolerated.
Deadline for Dropping a Course with a Grade of W (University)
The grade of W will be assigned to any student officially dropping a course. Please consult with the instructor before you decide to drop to be sure it is the best thing to do. Just stopping attendance and participation **WILL NOT** automatically result in your being dropped from the class. Should dropping the course be the best course of action, visit the Office of the University Registrar for the Course Drop Form that **must** be submitted. No student is eligible to receive a W without completing the official drop process by this deadline. Please consult the Academic Calendar ([http://www.tamucc.edu/academics/calendar/](http://www.tamucc.edu/academics/calendar/)) for the last day to drop a course.

Grade Appeals (College of Science and Engineering)
As stated in University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures, a student who believes that he or she has not been held to appropriate academic standards as outlined in the class syllabus, equitable evaluation procedures, or appropriate grading, may appeal the final grade given in the course. The burden of proof is upon the student to demonstrate the appropriateness of the appeal. A student with a complaint about a grade is encouraged to first discuss the matter with the instructor. For complete details, including the responsibilities of the parties involved in the process and the number of days allowed for completing the steps in the process, see University Procedure 13.02.99.C2.01, Student Grade Appeal Procedures. These documents are accessible through the University Rules website at [http://www.tamucc.edu/provost/university_rules/index.html](http://www.tamucc.edu/provost/university_rules/index.html), and the College of Science and Engineering Grade Appeals webpage at [http://sci.tamucc.edu/students/GradeAppeal.html](http://sci.tamucc.edu/students/GradeAppeal.html). For assistance and/or guidance in the grade appeal process, students may contact the chair or director of the appropriate department or school, the Office of the College of Science and Engineering Dean, or the Office of the Provost.

Disability Services
The Americans with Disabilities Act (ADA) is a federal anti-discrimination statute that provides comprehensive civil rights protection for persons with disabilities. Among other things, this legislation requires that all students with disabilities be guaranteed a learning environment that provides for reasonable accommodation of their disabilities. If you believe you have a disability requiring an accommodation, please call (361) 825-5816 or visit Disability Services in Corpus Christi Hall 116.

If you are a returning veteran and are experiencing cognitive and/or physical access issues in the classroom or on campus, please contact the Disability Services office for assistance at (361) 825-5816.

[http://disabilityservices.tamucc.edu/](http://disabilityservices.tamucc.edu/)

Statement of Academic Continuity
In the event of an unforeseen adverse event, such as a major hurricane and classes could not be held on the campus of Texas A&M University–Corpus Christi; this course would continue through the use of Blackboard and/or email. In addition, the syllabus and class activities may be modified to allow continuation of the course. Ideally, University facilities (i.e., emails, web sites, and Blackboard) will be operational within two days of the closing of the physical campus. However, students need to make certain that the course instructor has a primary and a secondary means of contacting each student.
L. OTHER INFORMATION

Academic Advising
The College of Science & Engineering requires that students meet with an Academic Advisor as soon as they are ready to declare a major. The Academic Advisor will set up a degree plan, which must be signed by the student, a faculty mentor, and the department chair. Meetings are by appointment only; advisors do not take walk-ins. Please call or stop by the Advising Center to check availability and schedule an appointment. The College’s Academic Advising Center is located in Center for Instruction 350 or can be reached at (361) 825-3928.

M. GENERAL DISCLAIMER
I reserve the right to modify the information, schedule, assignments, deadlines, and course policies in this syllabus if and when necessary. I will announce such changes in a timely manner during regularly scheduled lecture periods.