THE UNIVERSITY OF TEXAS RIO GRANDE VALLEY
DEPARTMENT OF CHEMISTRY

CHEM 2125 / Organic Chemistry II Laboratory / Course Syllabus

*Course syllabus may be subject to change

Instructor: Ms. Vanessa L. Garcia, M.S. E-mail address: vanessa.garcia@utrgv.edu
Office: SETB 1.504 Office Hours: MW 3:00pm-5:00pm Th 11:00am-12:00pm or by appointment (send email)

Course Description: Syntheses are more advanced, with greater emphasis on aromatic compounds. Laboratory activities reinforce advanced principles of organic chemistry, including the structure, properties, and reactivity of aliphatic and aromatic organic molecules; and properties and behavior of organic compounds and their derivatives. Emphasis is placed on organic synthesis and mechanisms. Includes study of covalent and ionic bonding, nomenclature, stereochemistry, structure and reactivity, reaction mechanisms, functional groups, and synthesis of simple molecules.

Prerequisites: Credit and/or concurrent enrollment in CHEM 2325.

REQUIRED SUPPLIES
1. Laboratory coat (long sleeve)
2. Safety eye-glasses
3. Scientific calculator

Learning Outcomes for CHEM 2125
Upon successful completion of this course, students will:
1. Perform chemical experiments, analysis procedures, and waste disposal in a safe and responsible manner.
2. Utilize scientific tools such as glassware and analytical instruments to collect and analyze data.
3. Identify and utilize appropriate separation techniques such as distillation, extraction, and chromatography to purify organic compounds.
4. Record experimental work completely and accurately in laboratory notebooks, and communicate experimental results clearly in written reports.
5. Correlate molecular structure with physical and chemical properties of aliphatic and aromatic organic molecules.
6. Predict the mechanism and outcome of aliphatic and aromatic substitution and elimination reactions, given the conditions and starting materials.
7. Predict the chirality of reaction products based on enantiomeric and diastereomeric relationships.
8. Describe reaction mechanisms in terms of energetics, reaction kinetics, and thermodynamics.
9. Use spectroscopic techniques to characterize organic molecules and subgroups.

Spring 2018 ACADEMIC CALENDAR
January 16 First day of classes
January 19 Last day to add a course or register for spring 2018
March 12 – 17 SPRING BREAK – NO classes
March 30 – 31 EASTER HOLIDAY – NO classes
April 12 Last day to drop a course; will count toward the 6-drop rule
May 2 Last day of classes
May 3 Study Day – NO class
May 4 – 10 Spring 2018 Final Exams
May 11 - 12 Commencement Ceremonies
BLACKBOARD & EMAIL
I will make extensive use of Blackboard. All of the experiments will be posted ahead of time under Course Materials and will be available for students to access. Make sure to periodically check your Blackboard and UTRGV e-mail accounts for announcements and posting from the instructor. Email communication with the instructor will only occur via your UTRGV email address.

LAB ATTENDANCE
Attendance to the lab is strictly enforced. Students are required to do all the laboratory experiments at the scheduled time. After 10 minutes of the beginning of the laboratory, students will not be allowed in the lab, resulting in a “0” for that particular lab. No make-up labs are given unless you can show a verifiable, and a legitimate reason for missing. If a verifiable, and legitimate reason is presented and accepted, you must fill out the MAKE-UP LAB FORM and return to Ms. Garcia the next class.

LAB SAFETY
Students are required to wear the proper laboratory personal protective equipment (PPE - long pants that cover the entire legs, closed shoes, laboratory coat, safety eye-glasses, and restriction of long hair) for each lab at all times. Students will not be allowed to perform the experiment without the proper PPE resulting in a “0” for that particular lab. Do not begin laboratory exercises unless Ms. Garcia is present. Follow the Experimental Procedures – do not perform unauthorized experiments! Absolutely no horseplay, food, drinks, or chewing gum allowed.

- No jeggings, workout pants, or synthetic bottoms are allowed!
- Your entire legs must be covered. Therefore, if any part of your skin on your legs is exposed, you will be dismissed from the laboratory.
- Do not “weigh” chemicals directly on balance surfaces; use weighing paper or beakers.
- Dispose of solid wastes in appropriately labeled containers – NOT in wastes basket!
- Dispose of liquid, organic wastes in appropriately labeled containers – NOT down the sink!
- Dispose of broken glassware in the designated box – NOT in wastes basket!
- Add reactive chemicals only to clean & dry beakers, flasks, graduated cylinders, etc.
- Use flames (Bunsen burners) only when authorized; most organic solvents are highly flammable!
- Do not leave experiments unattended.
- Put chemicals and equipment back to where you found them.
- Do not pour chemicals back into reagent containers.
- Condenser water should flow through equipment at a moderate rate only.
- Clean up your and your partner’s work area before leaving.
- Use common sense – ask if you do not know!
- Before you perform an experiment, I will spend ≈10 min. going over the theory, techniques, and safety aspects associated with each experiment.
- You will work with a partner throughout the semester.

LAB REPORTS
Here is the basic outline you should incorporate for typing your lab report:

- Double spaced
- 12 pt font
- Times New Roman font
- Black ink only
- NO LATE REPORTS WILL BE ACCEPTED (see Calendar below)!
- Helpful Tip: Produce a report so understandable, easy to follow, and as detailed as possible that if you were to lose your lab manual/results your report was the only way you/someone else can reproduce the same results.
I. a. Title of Experiment                             Notes/Suggestions
b. Date performed (MM/DD/YY) ← Title Page
c. Your name/partner’s name

II. Purpose of experiment (min. two coherent sentences) ← Show chemical reaction
Reagent data (table form) ← Show MWs, d, mp/bp

III. Experimental Procedure ← Include sketches & label major apparatus
(no plagiarism; past tense paragraph form)

IV. Experimental Results (tables with written descriptions) ← Show important calculations

V. Conclusion (min. ten coherent sentences) ← Comment on yield, purity, theory, etc.

VI. Answers to assigned questions (where applicable) ← 2 points each

EXAMS
There will be 2 major exams given during the semester. **SEE THE CALENDER BELOW for exam dates.**
ABSOLUTELY NO CELL PHONES OR OTHER ELECTRONICS will be permitted during the exams! If caught with a device that is prohibited, the exam will be taken away and a zero "0" will be given as the official grade for the exam.

EXAM MAKE-UP POLICY
Make up exams, including exams need to be taken early, will only be given due to a major medical illness requiring immediate treatment, there is a death of an immediate family member, you must participate in a required university activity, you are observing a religious holy day, or you are currently serving in the military. Documentation is required for all of these cases. In the cases of your illness or a family member’s death, documentation is required when you return to campus. In the case of a required university activity, a religious holy day, or military service, documentation is required at least one week prior to the activity. In case a make-up exam is given, it will be at the discretion of the instructor and at a time convenient to her schedule. Please note, however, that a makeup exam might be different than the regularly scheduled exam.

QUESTIONS ON GRADES AND GRADED REPORTS/EXAMS
Grades will only be discussed during office hours (NOT DURING CLASS TIME OR VIA EMAIL). If a student believes that a question on an reports/exam has been miss graded, the student should bring it up to the instructor’s attention during office hours (NOT DURING CLASS TIME OR VIA EMAIL) without delay. The student MUST support his/her claim by working out the problem in advance and present a written solution to it. If the question entails theory, then the student must provide the textbook page or place in the class notes were his or her claim is supported. Please make sure to take care of any problems before the next exam or assignment. I will NOT discuss any grading concerns after this period.

GRADING POLICY
Here is a list of these sources with their point values and grades:

<table>
<thead>
<tr>
<th>Pt. Source</th>
<th>No.</th>
<th>Pts.</th>
<th>Totals</th>
</tr>
</thead>
<tbody>
<tr>
<td>Experiments</td>
<td>9</td>
<td>70</td>
<td>630</td>
</tr>
<tr>
<td>Exams</td>
<td>2</td>
<td>100</td>
<td>200</td>
</tr>
<tr>
<td>Evaluation</td>
<td>1</td>
<td>70</td>
<td>70</td>
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</table>

**Sum**: 900

<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
</tr>
</thead>
<tbody>
<tr>
<td>%</td>
<td>100-90</td>
<td>89-80</td>
<td>79-70</td>
<td>69-60</td>
<td>&lt;60</td>
</tr>
<tr>
<td>(range)</td>
<td>(900-810)</td>
<td>(809-720)</td>
<td>(719-630)</td>
<td>(629-540)</td>
<td>&lt;540</td>
</tr>
<tr>
<td>GPA Points</td>
<td>4.00</td>
<td>3.00</td>
<td>2.00</td>
<td>1.00</td>
<td>0.00</td>
</tr>
</tbody>
</table>

†Points assigned at end of semester; criteria include punctuality, safe practices and lab stewardship.
*You are guaranteed **at least** these grades if your scores fall within these ranges.
CALENDAR

<table>
<thead>
<tr>
<th>Week</th>
<th>Exp. No</th>
<th>Experiment</th>
<th>Due</th>
</tr>
</thead>
<tbody>
<tr>
<td>Jan. 22-26</td>
<td>--</td>
<td>Orientation, Syllabus, Safety</td>
<td>--</td>
</tr>
<tr>
<td>Jan. 29-Feb. 2</td>
<td>1</td>
<td>Synthesis of Aspirin</td>
<td>Safety Agreement</td>
</tr>
<tr>
<td>Feb. 5-9</td>
<td>2</td>
<td>Reaction of Iodoethane with Naphthol “Williamson Ether Synthesis”</td>
<td>Exp. #1 Report</td>
</tr>
<tr>
<td>Feb. 12-16</td>
<td>3☺</td>
<td>Nuclear Magnetic Resonance Spectroscopy</td>
<td>Exp. #2 Report</td>
</tr>
<tr>
<td>Feb. 19-23</td>
<td>4</td>
<td>Isolation of Clove Oil</td>
<td>Exp. #3 Worksheets</td>
</tr>
<tr>
<td>Mar. 5-9</td>
<td>--</td>
<td>Exam 1 (Exp. 1-5)</td>
<td>Exp. #5 Report</td>
</tr>
<tr>
<td>Mar. 12-16</td>
<td>--</td>
<td>SPRING BREAK (No classes)</td>
<td>--</td>
</tr>
<tr>
<td>Mar. 19-23</td>
<td>6☺</td>
<td>Aldehydes and Ketones</td>
<td>--</td>
</tr>
<tr>
<td>Mar. 26-30</td>
<td>--</td>
<td>EASTER HOLIDAY (No classes)</td>
<td>--</td>
</tr>
<tr>
<td>Apr. 2-6</td>
<td>7☺</td>
<td>Carboxylic Acids and Esters</td>
<td>Exp. #6 Worksheets</td>
</tr>
<tr>
<td>Apr. 9-13</td>
<td>8</td>
<td>Preparation of Synthetic Banana Oil</td>
<td>Exp. #7 Worksheets</td>
</tr>
<tr>
<td>Apr. 16-20</td>
<td>9</td>
<td>Preparation of Aldol Condensation Products</td>
<td>Exp. #8 Report</td>
</tr>
<tr>
<td>Apr. 23-27</td>
<td>--</td>
<td>Exam 2 (Exp. 6-9)</td>
<td>Exp. #9 Report</td>
</tr>
</tbody>
</table>

☺There is no lab reports for these experiments; there will be worksheets to complete instead.

STUDENTS’ CODE OF CONDUCT
Students are expected to carry themselves and to behave as adults and to show respect for fellow students, the professor and the university setting. A high degree of decorum is expected from the students while in this class. No class room misconduct such as talking in class, using cell phones or any other way that disturbs the lecture delivery will be tolerated. Student(s) behaving in such matter will be asked to leave the class room. If the problem persists, the student(s) will be permanently barred from class.

STUDENTS WITH DISABILITIES
Students with a documented disability (physical, psychological, learning, or other disability which affects academic performance) who would like to receive academic accommodations should contact Student Accessibility Services (SAS) as soon as possible to schedule an appointment to initiate services. Accommodations can be arranged through SAS at any time, but are not retroactive. Students who suffer a broken bone, severe injury or undergo surgery during the semester are eligible for temporary services.

Brownsville Campus: Student Accessibility Services is located in Cortez Hall Room 129 and can be contacted by phone at (956) 882-7374 (Voice) or via email at ability@utrgv.edu.

Edinburg Campus: Student Accessibility Services is located in 108 University Center and can be contacted by phone at (956) 665-7005 (Voice), (956) 665-3840 (Fax), or via email at ability@utrgv.edu.

MANDATORY COURSE EVALUATION PERIOD
Students are required to complete an ONLINE evaluation of this course, accessed through your UTRGV account (http://my.utrgv.edu); you will be contacted through email with further instructions. Students who complete their evaluations will have priority access to their grades. Online evaluations will be available:

Spring 2018 Module 1   February 14 – February 20
Spring 2018 Module 2   April 11 – April 17
Spring 2018 (full semester) April 11 – May 2
ATTENDANCE
Students are expected to attend all scheduled classes and may be dropped from the course for excessive absences. UTRGV’s attendance policy excuses students from attending class if they are participating in officially sponsored university activities, such as athletics; for observance of religious holy days; or for military service. Students should contact the instructor in advance of the excused absence and arrange to make up missed work or examinations.

SCHOLASTIC INTEGRITY
As members of a community dedicated to Honesty, Integrity and Respect, students are reminded that those who engage in scholastic dishonesty are subject to disciplinary penalties, including the possibility of failure in the course and expulsion from the University. Scholastic dishonesty includes but is not limited to: cheating, plagiarism (including self-plagiarism), and collusion; submission for credit of any work or materials that are attributable in whole or in part to another person; taking an examination for another person; any act designed to give unfair advantage to a student; or the attempt to commit such acts. Since scholastic dishonesty harms the individual, all students and the integrity of the University, policies on scholastic dishonesty will be strictly enforced (Board of Regents Rules and Regulations and UTRGV Academic Integrity Guidelines). All scholastic dishonesty incidents will be reported to the Dean of Students.

SEXUAL HARASSMENT, DISCRIMINATION, and VIOLENCE
In accordance with UT System regulations, your instructor is a “Responsible Employee” for reporting purposes under Title IX regulations and so must report any instance, occurring during a student's time in college, of sexual assault, stalking, dating violence, domestic violence, or sexual harassment about which she/he becomes aware during this course through writing, discussion, or personal disclosure. More information can be found at www.utrgv.edu/equity, including confidential resources available on campus. The faculty and staff of UTRGV actively strive to provide a learning, working, and living environment that promotes personal integrity, civility, and mutual respect that is free from sexual misconduct and discrimination.

COURSE DROPS
According to UTRGV policy, students may drop any class without penalty earning a grade of DR until the official drop date. Following that date, students must be assigned a letter grade and can no longer drop the class. Students considering dropping the class should be aware of the “3-peat rule” and the “6-drop” rule so they can recognize how dropped classes may affect their academic success. The 6-drop rule refers to Texas law that dictates that undergraduate students may not drop more than six courses during their undergraduate career. Courses dropped at other Texas public higher education institutions will count toward the six-course drop limit. The 3-peat rule refers to additional fees charged to students who take the same class for the third time.

STUDENT SERVICES:
Students who demonstrate financial need have a variety of options when it comes to paying for college costs, such as scholarships, grants, loans and work-study. Students should visit the Students Services Center (U Central) for additional information. U Central is located in BMAIN 1.100 (Brownsville) or ESSBL 1.145 (Edinburg) or can be reached by email (ucentral@utrgv.edu) or telephone: (888) 882-4026. In addition to financial aid, U Central can assist students with registration and admissions.
Students seeking academic help in their studies can use university resources in addition to an instructor's office hours. University Resources include the Learning Center, Writing Center, Advising Center and Career Center. The centers provide services such as tutoring, writing help, critical thinking, study skills, degree planning, and student employment. Locations are:
- Learning center: BSTUN 2.10 (Brownsville) or ELCTR 100 (Edinburg)
- Writing center: BLIBR 3.206 (Brownsville) or ESTAC 3.119 (Edinburg)
- Advising center: BMAIN 1.400 (Brownsville) or ESWKH 101 (Edinburg)
- Career center: BCRTZ 129 (Brownsville) or ESSBL 2.101 (Edinburg)
CHEM 2125 MAKE-UP LAB FORM  

*MUST MAKE-UP LAB DURING WEEK EXPERIMENT IS BEING CONDUCTED

1. Notify Ms. Garcia (via e-mail) of your absence 24-hours before the missed class. Ms. Garcia will determine whether your absence is excusable.
2. If excusable, contact the other lab instructor for permission to attend his/her class.
3. Fill out this form with the other lab instructor's signature.
4. Turn in this form and the complete lab report to Ms. Garcia the next class to get credit for the missed lab.

Student Name: _______________________

ID: __ __ __ __ __ __

Date Absent:  M  T  W  Th  F  __ - __ - 2018

________________________

Attended Lab:  2125. __ __

Attended Lab Date:  M  T  W  Th  F  __ - __ - 2018

Check Missed Experiment:

<table>
<thead>
<tr>
<th>#</th>
<th>Experiment</th>
</tr>
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<tbody>
<tr>
<td>1</td>
<td>Synthesis of Aspirin</td>
</tr>
<tr>
<td>2</td>
<td>Reaction of Iodoethane with Naphthol &quot;Williamson Ether Synthesis&quot;</td>
</tr>
<tr>
<td>3</td>
<td>Nuclear Magnetic Resonance Spectroscopy</td>
</tr>
<tr>
<td>4</td>
<td>Isolation of Clove Oil</td>
</tr>
<tr>
<td>5</td>
<td>Directive Effects in the Bromination of Vanillin</td>
</tr>
<tr>
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<td>Aldehydes and Ketones</td>
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Instructor Signature: _______________________

Date: __________________