THE UNIVERSITY OF TEXAS RIO GRANDE VALLEY
DEPARTMENT OF CHEMISTRY

CHEM 2123 / Organic Chemistry I 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: MT 9:00am-10:00am; Th 9:00am-12:00pm or by appointment

Course Description: An introduction to organic synthesis. Fundamental techniques such as crystallization, distillation, extraction and chromatography are discussed and applied to the preparation of organic compounds.

Prerequisites: Refer to ASSIST for all prerequisites.

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

FALL 2017 ACADEMIC CALENDAR
August 28  
First day of classes
August 31  
Last day to add a course or register for Fall 2017
September 4  
Labor Day – NO classes
November 15  
Last day to drop a course; will count toward the 6-drop rule
November 23 – 26  
Thanksgiving Holiday – NO classes
December 6  
Last day of classes
December 7  
Study Day – NO class
December 8 -14  
Fall 2017 Final Exams
December 15-16  
Commencement Ceremonies

Learning Outcomes for CHEM 2123
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.

Learning Objectives for Core Curriculum Requirements
This course meets 1 hour of the core requirement for Integrative and Experiential Learning Courses (up to 3 hours from science labs) in this category involve interdisciplinary topics or approaches and/or learning
through direct experience. Science Labs (maximum 3 hours; offered in conjunction with science courses listed in the Life and Physical Sciences component area).

**BLACKBOARD & EMAIL**
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 broken glassware, solid, liquid, and organic wastes in appropriately labeled containers – NOT down the sink or 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. Title of Experiment**

Date performed (MM/DD/YY)

Your name/partner’s name

**Notes/Suggestions**

← Title Page

**II. Purpose of experiment (min. two coherent sentences)**

Reagent data (table form)

← Show “reaction”

Show MW’s, d, mp/bp

**III. Experimental Procedure**

(no plagiarism!: past tense paragraph form)

← Sketch & label major apparatus

**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

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**EXAMS**

There will be 2 major exams given during the semester. **SEE THE CALENDER BELOW for the 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.

**MAKE-UP EXAM POLICY**

Make up exams, including exams 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 GRADED REPORTS/EXAMS**

If a student believes that a question on an report/exam has been miss graded, the student should bring it up to the instructor’s attention during office hours (NOT DURING CLASS TIME) 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 report. 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>
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<td><strong>Sum</strong></td>
<td></td>
<td></td>
<td>900</td>
</tr>
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<table>
<thead>
<tr>
<th>Grade</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>D</th>
<th>F</th>
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<tbody>
<tr>
<td>% range</td>
<td>100-90</td>
<td>89-80</td>
<td>79-70</td>
<td>69-60</td>
<td>&lt;60</td>
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<tr>
<td>(range)</td>
<td>(900-810)</td>
<td>(809-720)</td>
<td>(719-630)</td>
<td>(629-540)</td>
<td>&lt;540</td>
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<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>
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</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>
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</thead>
<tbody>
<tr>
<td>Aug. 28 – Sept. 1</td>
<td></td>
<td>Orientation, Syllabus, Safety</td>
<td></td>
</tr>
<tr>
<td>Sept. 11-15</td>
<td>1 ‡</td>
<td>Check-in/Structures and Nomenclature of Alkanes and Cycloalkanes</td>
<td>Safety Agreement</td>
</tr>
<tr>
<td>Sept. 18-22</td>
<td>2 ‡</td>
<td>Melting Points</td>
<td>Exp. #1 Worksheets</td>
</tr>
<tr>
<td>Sept. 25-29</td>
<td>3</td>
<td>Recrystallization of Solids</td>
<td>Exp. #2 Worksheets</td>
</tr>
<tr>
<td>Oct. 2-6</td>
<td>4</td>
<td>Liquid-Liquid Solvent Extraction</td>
<td>Exp. #3 Report</td>
</tr>
<tr>
<td>Oct. 9-13</td>
<td>5</td>
<td>Thin-Layer Chromatography</td>
<td>Exp. #4 Report</td>
</tr>
<tr>
<td>Oct. 16-20</td>
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<td>Exam 1 (Exp. 1-5)</td>
<td>Exp. #5 Report</td>
</tr>
<tr>
<td>Oct. 23-27</td>
<td>6</td>
<td>Reactions of Hydrocarbons</td>
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<tr>
<td>Oct. 30 – Nov. 3</td>
<td>7</td>
<td>Reactivity of Alkyl Halides in Nucleophilic Substitution Reactions</td>
<td>Exp. #6 Report</td>
</tr>
<tr>
<td>Nov. 6-10</td>
<td>8</td>
<td>Kinetics of SN1 Solvolysis with tert-Butyl Chloride</td>
<td>Exp. #7 Report</td>
</tr>
<tr>
<td>Nov. 13-17</td>
<td>9</td>
<td>Synthesis and Distillation of Cyclohexene from Cyclohexanol</td>
<td>Exp. #8 Report</td>
</tr>
<tr>
<td>Nov. 27 – Dec. 1</td>
<td></td>
<td>Exam 2 (Exp. 6-9)</td>
<td>Exp. #9 Report</td>
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‡ 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 instructor, 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:

- Fall 2017 Module 1: Oct. 5 – Oct. 11
- Fall 2017 Module 2: Nov. 29 – Dec. 5
- Fall 2017 (full semester): Nov. 15 – Dec. 6
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.
THE UNIVERSITY OF TEXAS RIO GRANDE VALLEY  
DEPARTMENT OF CHEMISTRY

CHEM 2123 MAKE-UP LAB FORM  
_________________________________________ Fall 2017

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

1. Notify Ms. Garcia or your TA (via e-mail) of your absence 24-hours before the missed class. Ms. Garcia or your TA 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 or your TA the next class to get credit for the missed lab.

Student Name: ______________________

ID: __________________________

Date Absent: M T W Th F __ __ - __ __ - 2017

Attended Lab: 2123. __ __

Attended Lab Date: M T W Th F __ __ - __ __ - 2017

Check Missed Experiment:

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| 1 | Structures and Nomenclature of Alkanes and Cycloalkanes
| 2 | Melting Points
| 3 | Recrystallization of Solids
| 4 | Liquid-Liquid Solvent Extraction
| 5 | Thin-Layer Chromatography
| 6 | Reactions of Hydrocarbons
| 7 | Reactivity of Alkyl Halides in Nucleophilic Substitution Reactions
| 8 | Kinetics of SN₁ Solvolysis with tert-Butyl Chloride
| 9 | Synthesis and Distillation of Cyclohexene from Cyclohexanol

Instructor Signature: ______________________

Date: ________________