

**CHEM 2411L**  
**ORGANIC CHEMISTRY I LAB**  
**Spring 2020**

**Classroom:** TLC3107

**Class period:** Section 01: Thursdays 9:00am-12:00pm  
Section 03: Tuesdays 9:00am-12:00pm

**Instructor:** Dr. Megumi Fujita

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Office Hours: MWF10-12, TR1-3, or by appointment

### Course Material

- **Organic Chemistry I Laboratory Manual For CHEM2411L:** This is a required material, available as a course pack at the UWG Bookstore.
- **Organic Chemistry Introductory model kit (HGS Maruzen 1002A):** This is a required material for this course, and is useful for the lecture course as well. Available at the UWG Bookstore or online ([http://www.maruzen.info/hgs/catalog/product\\_info.php?cPath=4&products\\_id=651](http://www.maruzen.info/hgs/catalog/product_info.php?cPath=4&products_id=651)).
- **Safety goggles** are required to be worn at all times. There are communal pairs in class that you can borrow, but you may purchase a personal pair on the first day of lab (\$5 cash or check).
- **A lab notebook** to take notes during the pre-lab lecture and record laboratory data. Do NOT directly record your raw data on the datasheet.

### Co-requisite

CHEM 2411 (lecture class) is a co-requisite for this lab class. This means that if you withdraw from the lecture class (CHEM 2411), you will have to withdraw from the lab (CHEM 2411L) as well.

### Objectives

To apply the knowledge obtained in CHEM 2411 lecture to problem solving in the laboratory; To develop laboratory techniques including: isolating and purify organic substances, characterizing substances by physical and spectroscopic means, correlating the physical properties of organic substances with their molecular structures, working safely, taking data carefully, recording relevant observations, and assessing the results of your experimental method.

### Learning Outcomes

1. Demonstration of a working knowledge of organic laboratory techniques for synthesis and characterization by successfully completing laboratory assignments.
2. To communicate organic chemistry with clarity. Attainment of this learning outcome will be reflected by the students' abilities to:
  - Follow oral and written instructions to successfully complete laboratory assignments.
  - Record and analyze data, and discuss the outcomes of each experiment with clarity.
  - Write formal laboratory report as chemists write.

**Tardiness / Missed Lab:** Lab attendance is mandatory. Unexcused absences will result in a grade of zero. Make-up labs will be permitted only with a valid excuse and subject to availability. Lateness will be penalized by deduction from the grade for that lab.

**Preparation for Each Lab:** The labs will require preparation. Read up the laboratory manual and complete the CourseDen online Prelab Quiz. The prelab quiz is due 2 hours before the start of each lab class.

**During the lab:** Most labs are to be performed individually at the designated work place. In some labs you may be instructed to work in a pair, but each individual must record all data and observations in his/her own notebook. Do not use the datasheet for your raw records. Datasheets are to be filled based on your raw records in a tidy, legible manner for submission after the completion of the experiment. Use non-erasable ink, and never use white out.

**After the lab:** Clean up the lab space, clean the apparatus and put back to the drawer.

**Postlab reports:** Laboratory reports must be turned in at the **beginning** of the next lab class. **Late submission will incur a 10% penalty per day.**

**Academic Misconduct:** Honesty in reporting results is one of the essential characteristics of your laboratory work. Any form of academic dishonesty or misconduct will be penalized to the fullest extent possible, including a grade of zero in the assignment or grade of F for the entire course, or in a serious case, expulsion from the university. **Falsifying data** includes (but is not limited to) fabrication of data for lab work you did not do, and changing poor data to better-looking data. Little of your grade depends on getting "good" quantitative results; you will be more severely penalized for misrepresenting results than for honestly reporting "poor" results. For lab reports (including formal reports), **you must write your own report as individual work**, and **copying ANY part of other people's work is considered a serious academic misconduct**. This includes (but not limited to) data, tables, reaction equation and mechanisms, discussion and conclusions, and answers to prelab/postlab questions. The grade obtained for such reports will be zero for both the one who copied and the one who let the other copy. Any type of cheating for the final exam will result in a grade F for the entire course.

## Grades

**Online Prelab Homework (10%), Postlab reports (60%), Lab final exam (20%), Instructor points (5%), RTK (5%)**

**\*Instructor points:** your instructor will assign points based upon your readiness for each lab, punctuality, ability to work within the time assigned, respect for safety rules, respect for the instructor, TAs and other students, cooperation, attitude, performance, and tidiness.

**\*RTK: Online Environmental Health & Safety test:** Complete the following TWO programs under <http://www.usg.edu/facilities/resources/training> **by the second lab period.**

1. [Right-To-Know Basic Awareness with the Global Harmonized System](#)
2. [Hazardous Waste Awareness](#)

At the end of each online training, a **Certificate will be displayed with your name on**. Instead of printing them, please take a digital picture of the screen (or use Print Screen function), and **save the screen images as "Lastname basic" or "Lastname hazardous"** (use your own last name, of course), and deposit the images to the dropbox in the CourseDen.

If you have completed these RTK training earlier in this academic year ([August 2018-](#)) and can present the evidence (e.g. your on-campus employer's e-mail confirmation), you may do so instead.

**Grading Scale:** 90-100 A, 80-89 B, 70-79 C, 60-69 D, <59 F

**Contact:** Only UWG e-mails will be read and dealt with. CourseDen site linked with this class is where you find the Prelab Homework and the online gradebook is located.

## Important course policies:

- Follow all the safety rules described in the Safety Contract. Especially be mindful of the following:
  - You must wear safety goggles all the time. If you were found not wearing safety goggles, you are not allowed to do a lab and you will receive a grade of zero.

- Make sure to wear closed-toe shoes all the time during the lab. If you wear any open-toed shoes, you are not allowed to do a lab and you will receive a grade of zero.
- **The use of cell phones and any electronic devices is forbidden at any time during the lab period.** Exception is the use of the stopwatch or timer functions on the cell phones.
- The time required to perform the experiment is usually 3 hours. If you leave before the end of the lab, you must show all the data to the instructor proving that you have actually performed the experiment.

**Other policies:** For important policy information, i.e., the UWG honor code, e-mail, credit hours, as well as information on the campus carry policy please review the information found in the Common Language for Course Syllabi documentation at

<https://www.westga.edu/administration/vpaa/common-language-course-syllabi.php>

### LABORATORY SCHEDULE (Tentative)

<b>Dates (Tu,Th)</b>	<b>Lab #</b>	<b>Experiment</b>	<b>Note</b>
1/7,9	0	Syllabus, Lab safety, Check-in	
1/14,16	1	Melting point	
1/21,23	2	Molecular modeling	
1/28,30	3	Recrystallization	
2/4,6	4	Thin layer chromatography (TLC)	
2/11,13	5	Column chromatography: Separation of plant pigments	
2/18,20	6	Extraction: Separation of a mixture of 3 unknown solids	
2/25,27	7	Extraction, continued	
3/3,5	8	Reactivity of alkanes/alkenes	
3/10,12	9	Bromination of <i>E</i> -stilbene and stereochemistry	<b>Formal report</b>
3/17,19		No lab, Spring break	
3/24,26	10a,10b	IR and MS Spectroscopy	
3/31, 4/2	11	SN1 and SN2 reactions	
4/7,9		No lab. Turn in Lab 11 by 12:00pm to TLC2122.	
4/14,16	12	Check-out, lab final	
4/21,23		No lab	