Organic Chemistry II Laboratory **Syllabus** **Spring 2014**
CHE314 (2 hours credit)

Professor: Dr. Trent Selby
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Office Hours: M-Th. 9:00-10:30 a.m.

Class: Monday Joint Laboratory Section: Pre-laboratory discussion: 1:30-2:20 p.m.
Tues., Wed. & Thurs. Laboratory Sections: 1:30-5:30 p.m.
(Plan to be here the entire period: DO NOT SCHEDULE WORK, PRACTICE, ETC. to conflict with these hours.)

The last day to drop a class without receiving a grade is Friday March 21, 2014

TENATIVE COURSE OUTLINE

Week#	Experiment/Exercise	Reference
1 (Jan13-16)	Introduction, Check-in, Lab Safety	**Ch. 1-2**
	Synthesis of Luminol	**(61)** p708-710
2 (Jan21-23)	NMR Lecture (no prelab)	
3 (Jan27-30)	Grignard Synthesis	**(38.1&38.2)**
	Synthesis of a tertiary alcohol from PhMgBr	pp 495-499
4 (Feb3-6)	Diels-Alder Reaction	**(48.1&48.2)**
	Cracking of dicyclopentadiene & rxn w/ maleic anhydride	pp 620-624
5 (Feb10-13)	Electrophilic Aromatic Substitution	**(28.1)**
	Nitration of methyl benzoate	pp 402-403
6 (Feb17-20)	Electrophilic Aromatic Substitution	**(29.5)**
	Alkylation of *m*-xylene	pp 416-418
7 (**Feb. 24**)	**Laboratory Midterm Examination**	
7 (Feb25-27)	Mass Spectroscopy Lecture	
8 (Mar5-8)	Esterification	**(40.3)** p523
9 (Mar12-16)	Spring Break	
10(Mar19-23)	Wittig Reaction	**(39)** p507-510
11(Mar24-27)	Adol Condensation	**(37)** p485-86
12(M31-A3)	Identification of Unknowns	
13(Apr7-10)	Identification of Unknowns	
14(**April 14**)	**Laboratory Final Examination (comprehensive)**	
14 (Apr14-17)	Synthesis of Nylon	**(67)** p763-764

Read the relevant sections in the lab text for preparation.

Laboratory reports are due according to the following schedule:

Tuesday Lab---- reports are due on Thursday by 5:00p.m. (Dr. Selby's office)
Wednesday Lab---- reports are due on Friday by 5:00p.m. (Dr. Selby's office)
Thursday Lab---- reports are due on Monday by 5:00p.m. (Dr. Selby's office)

Textbook: K. Williamson, "*Microscale and Macroscale Organic Experiments,*" sixth edition. Companion: An Organic Laboratory Notebook which permits production of an original and a copy of laboratory work.

Laboratory notebook. At the conclusion of each laboratory exercise, students will submit the copy (yellow) pages of their laboratory notebook. The student's name (and laboratory partner) should be placed in the appropriate blocks on the first page. The report should be stapled in the upper left corner. Students retain the white, original copy. Attach any other relevant documents, like spectra, etc. as needed.

Components of the Laboratory Writeup for each Experience.
Section A. Introduction. (Composed before laboratory begins.) Use the headings recommended.
Title of the Laboratory (also, your name, your lab partners name, day of week for your lab)
References (Numbered list of explicit sources: books, handouts, notes; give title, chapter, etc.; be specific.) (Ephemeral/web-based resources: the web address [url], and what you searched for.)
Goals and Objectives. Brief prose statement of the goals or objectives of the experience.
Materials, Safety and Disposal. Table of materials used and product(s), CAS #, relevant properties, hazards (especially "contacts to be avoided", other hazards like flammability, corrosiveness, carcinogenicity, etc.), and disposal route.
Brief outline of activities (write this section after the [Monday] pre-laboratory introduction.) Give enough detail so that another could follow your procedure and reproduce the lab.
If a reaction is performed, give the balanced chemical reaction with formulas, formula weights, masses, moles, etc. for the materials involved; compute the theoretical (100%) yield.

Section B.
Observations, Discussions (Composed during the laboratory experience.)
B1. Full outline of activities and observations (chronologic or by lab activity). Relevant discussion or arguments about the observations, results, theories, practices, and/or objectives. Refer to the references as needed.

Section C.
Conclusions. (Compose this after the laboratory has been concluded. Refer to your goals (A3) for closure.)
C1. Brief and concise prose statement of important findings and its evidence

Grading: Laboratory Reports (25 points each, graded on completeness and accomplishment of goals/objectives, adherence to prescribed style, and on-time (-3 points per day late); and where products are submitted, materials are graded on amount, purity and adequate characterizations.)
(Lowest grade will be dropped)
NOTE Unknown experiment will count double (50pts) and will not be dropped.

Laboratory **Midterm Exam** (100 points); **Laboratory Comprehensive Final Exam** (100points)

General Laboratory Deportment, Adherence to Safety rules, Cleanliness, and Attitude
note--safety goggles loan cost one point per day (-1) (25points)

Grades: (as percentages of all points) 89.5-100 (A); 79.5-89.4 (B); 69.5-79.4 (C); 59.5-69.4 (D); below 59.4 (F).