ORGANIC EXPERIMENT SCHEDULE
CH2411, FALL 2007

LAB SUPERVISOR: Murari, ChemSci 603 South, mihimna@mtu.edu
ADVISOR: Dr. Marshall W. Lough, ChemSci 610, 9487-2384, eqmwlough@mtu.edu
LAB INFO: http://www.chemistry.mtu.edu/~kmssmith/Organic/

LAB 1 (SEPTEMBER 4 & 6): Check-in, Safety, Course Introduction, and Introduction to Beilstein's Handbuch der Organischen Chemie
Safety notebooks & lab notes, handbooks, jointware, miscellaneous equipment.

LAB 2 (SEPTEMBER 11 & 13): Thin-Layer Chromatography of Analgesics
PREPARATION: (a) Read experiment; (b) Read techniques (Zubrick): cleaning glassware, chromatography, and thin-layer chromatography; (c) Prepare preliminary notebook according to Lab Notes.

LAB 3 (SEPTEMBER 18 & 20): Isolation and Purification of Trimepsin from Nutmeg with TLC Anah
PREPARATION: (a) Read experiment; (b) Read Zubrick (topics): recrystallization, heat sources, the sl/ bath, clamps and clamping of tapered glassware, reflux and addition, and standard reflux; (c) Prepare preliminary notebook.

LAB 4 (SEPTEMBER 25 & 27): Continuation of Isolation and Purification of Trimepsin from Nutmeg with TLC Analysis
PREPARATION: (a) Read experiment; (b) Read Zubrick (topics): products, melting point, sample pre

LAB 5 (October 2 & 4): Acid and Base Extractions: Separation of Anthracene, Benzoic Acid, and p-Nitroaniline
PREPARATION: (a) Read experiment; (b) Read Zubrick (topics): Drying agents, extraction and washl theory of extraction; (c) Prepare preliminary notebook. Example Flow Diagram

LAB 6 (OCTOBER 9 & 11): Continuation of Acid and Base Extraction: Recrystallization, TLC, and Points
PREPARATION: (a) Read experiment; (b) Read Zubrick (topics): recrystallization and gravity filtration

LAB 7 (OCTOBER 16 & 18): Separation and Purification of Fluorene and Fluorenone by Column Chromatography
PREPARATION: (a) Read experiment; (b) Read Zubrick (topics): Wet-column chromatography; (c) Preliminary notebook.

LAB 8 (OCTOBER 23 & 25): Fractional Distillation of an Ethyl Acetate-Butyl Acetate Mixture
PREPARATION: (a) Read experiment; (b) Read Zubrick (topics): boiling stones, sources of heat, the l mantle, clamps and clamping, clamping a distillation setup, distillation, simple, and theory of distillation
Prepare preliminary notebook.

LAB 9 (Part I & II) (OCTOBER 30 & November 1):
LAB 9: Part I - Continuation of Fractional Distillation: Gas Chromatography of Distillation Fraction
PREPARATION: (a) Read experiment; (b) Read Zubrick (topics): syringes, needles and septa, instru in the lab, and gas chromatography.
LAB 9: Part II - Determination of E2/SN2 Ratio for the Reaction of an Alkyl Halide with Potassium Hydrideox
PREPARATION: Read experiment, review techniques, and prepare preliminary lab notebook. TECHNI (Zubrick topics): boiling stones, jointware, syringes, needles, and septa and reflux.

LAB 10 (NOVEMBER 6 & 8): Free Radical Chlorination with Sulfuryl Chloride and Apparatus Diagram
PREPARATION: Read experiment, review techniques, and prepare preliminary lab notebook. TECHNI (Zubrick topics): heating sources, boiling stones, reflux, extraction/washing, drying agent, clamps/clar fractional distillation. ATTACH % YIELD AND REACTIVITY CALCULATIONS TO YOUR POSTLAB. POINT: ASSOCIATED FOR CALCULATIONS!!

LAB 11 (NOVEMBER 13 & 15): Continuation of Free Radical Chlorination: Fractional Distillation Analysis of Chlorination Product
PREPARATION: Review experiment and techniques. TECHNIQUES (Zubrick topics): gas chromatogra Trace (of chlorobutanes, showing boiling points and order of elution)

LAB 12 (NOVEMBER 27 & 29): Preparation of 1-Bromobutane via a Nucleophilic Substitution
PREPARATION: Read experiment, review techniques, and prepare preliminary lab notebook. TECHNI (Zubrick topics): heating sources, boiling stones, reflux, extraction/washing, drying agent, clamps/clar

LAB 13: Part I - Continuation of Preparation of 1-Bromobutane: GC and IR Analysis of Product
PREPARATION: Review experiment and techniques. TECHNIQUES (Zubrick topics): gas chromatogra infrared spectroscopy. GC Trace of standard mixture (1:1:1), showing boiling points and order of elution! Spectrum of 1-Butanol (annotate with important functional group(s) and attach to post-lab).

LAB 13: Part II - Introduction to Chemical Abstracts and CA Search for an Assigned Compound

LAB 14 (DECEMBER 11 & 13): Lab Clean-up, Evaluations, and Check-out
NOTE: All students enrolled in this course must check out of their drawer before Thursday, December further instructions, go to early check-out. Students who do not make arrangements to check out of drawer will be fined $25.00 in addition to the cost of replacement equipment.

* The Gow-Mac Gas Chromatograph is scheduled during this experiment.
* Mattson FTIR is scheduled during this experiment.

NOTE: Access to most of the files linked to this page requires the installation of Adobe Reader