Spring 2013 51LC Practical Information

The exam will consist of:

- 1 station where you will perform a shortened version of an experiment
- 1 critical thinking question
- 3 longer questions
- You will be allowed 40min at the wet station and 70min for the dry station for a total of 1h 50min long exam (does not include time allocated to rotating between stations)

Be sure that you are confident in conducting basic techniques such as:

- Recrystallization
- Melting Point
- TLC
- Extraction
- Operate all typical lab equipment

You should also be able to:

- Identify stereocenters, identify the stereoisomers of a compound and determine their stereochemical relationships
- Draw a mechanisms for all the types of reactions we have done in lab so far (Elimination, Wittig, EAS, CEC method, hydrolysis, esterification, aldol)
- Determine what type of reaction will occur given reagents, but no products
- Do typical calculations related to stoichiometry in a reaction (figuring out limiting reagent, calculating % yield, etc.)
- Determine the structure of a compound given its molecular formula, the IR, \(^1H\) NMR, and \(^13C\) NMR spectra. You are expected to know the relative stretches of functional groups (\(O—H\), \(N—H\), \(C—H\), etc.). You will be expected to know the relative chemical shifts for different protons and carbons.

To receive full credit you must:

- Record all the results you obtain for each experiment
- Show all work when you calculating something
- Label any isolated compounds that you are required to turn in with:
  - your name and ID number
  - name of the compound

Tips for success:

- **Come prepared with all the required safety equipment – you will not be allowed to take the exam and will receive a 0 if you are not properly attired!**
- Bring a model set that must be in a clear plastic bag, pencil, non-graphing calculator, and a ruler—you will be at a serious disadvantage if you don't have those!
- **Read the instructions** for each section carefully!
- If you are at a station where you are performing an experiment and you are waiting for something, you should use your time to either clean glassware and equipment you are done using, prepare for the next step of your experiment, or work on the questions from the dry portion of the exam
- If you are working on an experiment and you are running out of time, record all your crude results and make sure you clean up before your time is up. You can analyze results and do calculations at a later point in the exam
General Instructions

1. You will need a pencil, non-graphing calculator, ruler, model kit (in a clear plastic bag) and your safety equipment with you. You may not bring anything else with you during the exam.

2. Work alone, with one person per station. You may not get help from the TA.

3. Technical equipment, except for balances and UV lamps, will be provided at each station. Glassware will not be provided at each station. You are responsible for finding, and then returning, glassware to and from the drawers. If you believe you are missing a piece of equipment, you may ask your TA for it.

4. You will be allowed 110 minutes to complete the exam. One portion of the practical is a station where you will perform a shortened version of an experiment. You will be allowed to work on that for 40 min. This time period includes cleaning up in that station and resetting everything as it was. Points will be deducted if the station has not been re-set at the end of your time there and you will not be allowed to continue with the exam until you have reset the station. You will have the remaining 70 min to answer the remaining questions portion of the practical.

5. You may work on other parts of the exam if you finish the work in your station early. You may not, however, return to the wet station.

6. Follow all safety rules.