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ch216sp12syllabus: Group Experimental Design

Each small lab group will work together to design and carry out an experiment testing some aspect of experiments 3, 4, 6 and 7.

You will be allowed to form groups on your own or with the assistance of your GSI. Only one group change is allowed per student per term and must be approved by your GSI. Group member changes are not allowed mid-experiment.

Complete the [group design sheet](#) after discussing the experiment with your small lab group. *Each group only needs to turn in a single sheet.* If you have a limited schedule and have difficulty finding a time to discuss the experiment consider setting up a [google document](#) to communicate with your group.

Although some experiments will be performed in groups, the formal lab reports will always be an *individual* assignment. Keep in mind that a failed experiment does not mean a failed grade. Sometimes more can be learned from a failed experiment than a successful one (just ask Thomas Edison). Your lab report grade will be evaluated based on your understanding of the experiments you design and implement, and on your understanding of the results you do obtain. You will not be penalized for low yield, incorrect hypotheses, or experimental errors made by another group member. Your primary job is to be a good team member, to be creative, and to be a good scientist.

There are some practical limitations to keep in mind when designing your experiment:

- You will be limited by time (all planned experiments must be completed in two 4 hour lab sessions) and equipment (you will only have access to the equipment available in the individual kits of each group member).
- You will be limited to the characterization methods available in the lab (i.e. TLC, IR spectroscopy, melting point). Don't forget to determine % yield for each reaction, however keep in mind that experimenter error may lead to inconclusive yield results.
- Relative rate may be determined if it is a slow reaction, by noting the time at start and end of the reaction while monitoring the reaction progress by TLC. This is not a very precise way to measure rate and may not be measurable for some reactions.