your lab notebook

Your lab notebook is your record of what you did in lab. It is expected that you will record your procedure, observations and data as the experiment proceeds. Thus, for example, if your notebook is collected with the reports on experiments 7, 8 and 9, it should include what you did during experiment 10, which was performed that day.

While some variation due to individual style is appropriate, for this course your lab notebook must contain certain specific items:

1 The first several pages are to be reserved for a **Table of Contents**. This means that each page of your notebook should be numbered and the beginning page of each experiment should be noted with the experiment's title in the Table of Contents.

2 Each experiment should begin at the top of a new page. The experiment's **title** and the **date** when the experiment was performed will be at the top of the page.

3 Just below the title, you must include a **"reaction scheme"** which includes an equation for the reaction with structures of the pertinent organic reactants and products, the quantities (mw, mmol, and mass or volume) of each reactant, and data on the expected product (mw and theoretical yield in mg or g). ***It is expected that this section of your notebook will be completed prior to lab.***

4 A **reference** for the experimental procedure will follow. Note that all literature references must follow the American Chemical Society's format which can be found in *The ACS Style Guide* in the Chemistry Library. [1]

5 Your **experimental procedures, observations and data** will follow. An example of a typical lab notebook page is provided on the following page. This narrative is the most important part of any notebook, and it is a record of what you have done in the lab,... "a complete, self-contained, running account of all procedures and observations constituting the experiment. The distinctions must be absolutely clear between ... speculations and intentions, ... [and] observations and actions. [2]

6 For experiments that are of a synthetic nature, you must calculate a **percent yield** for the product and include the information that allowed you to determine the product's identity. If this information is a melting point, include a literature melting point and be sure to cite the source properly.

7 For experiments which are **collaborative efforts**, the data gathered by the other members of your group will be included in your notebook, and cited as such.

8 All entries in your notebook should be in **ink**. Any errors should be crossed out with a single line. Erasures and correction fluid (such as "White-Out" or "Liquid Paper") are not permitted.

There are accepted abbreviations used by chemists on a regular basis. Among those used in this course are the following:

aqueous	aq
boiling point	bp
degrees Centigrade	°C
formula weight	fw, FW
hours	h
infrared	IR
melting point	mp
milligram, gram	mg, g
milliliter, liter	mL, L
millimole, mole	mmol, mol
minute	min
molecular weight	mw, MW
nuclear magnetic resonance	NMR (^{1}H NMR, ^{13}C NMR)
page, pages	p, pp
recrystallized	recryst
seconds	s
temperature, as reported in °C	*t*

Remember: Your lab notebook is ultimately for your use. Lab reports are not collected on a weekly basis. Three weeks might elapse between the day that an experiment was performed and the day the report on that experiment is due. To accurately report on what happened in lab, you must have an accurate record of what took place.

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1 *The ACS Style Guide*; Dodd, J.S., Ed.; American Chemical Society: Washington, DC, 1986; pp 108-114.

2 Ebel, H.F.; Bliefert, C.; Russey, W.E. *The Art of Scientific Writing*; VCH: New York, 1987; p 13.