Format Guidelines for Introductory Organic Chemistry Lab Reports

Overall

- The font should be Times New Roman.
- The body font size should be 12.
- The spacing should be "Double spaced", "At least 24 pt", or "Exactly 24 pt.
- The body text should be justified throughout (the alignment option that makes each chunk of text align on both sides of the column).
- You should press "enter" key between each different section of the lab report.
- Pages should be numbered and centered at the bottom of each page.

- **Each report should not exceed 5 numbered pages.**
- A sample report is available as a PDF file on the CHEM BC 3328 course website at http://courseworks.columbia.edu.

Title

- The title should be centered and in bold at the top of the lab report. The font size should be at least 18 points (Times New Roman), larger than the body text. This should be followed by an "enter" (Press the enter key).
- It should be followed with the student's drawer number, centered (not name, for fairness of grading purposes). It should be back to font size 12. This should be followed by an "enter" (Press the enter key).
- In italics and still centered, the student should include the course name (i.e., Chemistry BC 3328), followed by section, followed by address (see address below). This should be followed by an "enter" (Press the enter key).

  Department of Chemistry, Barnard College, 3009 Broadway
  New York, New York 10027
- Still in italics, the words "*Submitted*" and the date of submission (e.g., *January 14, 2020*) should be typed.

Abstract

- A thin line should "encase" the abstract at the top and bottom.
- The word "**ABSTRACT**" should be in bold type and align left, followed by a colon.
- Then the abstract should be typed in traditional paragraph style.
- Again, a thin line should follow the abstract text.

Introduction

- The word "**INTRODUCTION**" should be in bold type and align left. An "enter" (Press the enter key) should follow the introduction heading.
- Then the introduction should be typed in traditional paragraph style.

Results and Discussion

- The words "**RESULTS AND DISCUSSION**" should be in bold type and align left. An "enter" (Press the enter key) should follow this heading.
- Then the discussion of results should be typed in traditional paragraph style.
- Schemes, figures, and tables should be cited in the body text by including (Scheme 1) or (Figure 1) or (Table 1) in parentheses at the end of sentences that reference them. The schemes, figures, and tables themselves can break up the body text and should be centered.
    - Above the scheme/figure/table, the titles for schemes, figures, and tables should be given in normal text (bold type), aligned left.
    -

Conclusion:

- The word "**CONCLUSION**" should be in bold type, and align left. An "enter" (Press the enter key) should follow this heading.
- Then the conclusion should be typed in traditional paragraph style.

Experimental Section:

- The words "**EXPERIMENTAL SECTION**" should be in bold type, and align left. An "enter" (Press the enter key) should follow this heading.
- The words "**General Methods**" should be in bold type and align left, followed by a period. (Do not press the enter key).
- Then the names of the instruments and techniques employed should be typed in traditional paragraph style. An "enter" (Press the enter key) should follow this section.
  If your experiment was an identification, separation, or purification technique, the next section of your report is as follows:
- The word "**Procedure**" should be in bold type, align left, followed by a period. The body text of the procedure should immediately follow.

- An “enter” (Press the enter key) should follow this paragraph. Characterization data of the identified, separated, or purified compound should be typed as given in the example below.
    - Naphthalene. M.p. 80–82 °C (lit. m.p. 80 °C).

  If your experiment was a synthesis reaction (e.g., Dehydration experiment), the next section of your report is as follows:
- The name of the specific compound synthesized should be in bold type, align left, and followed by a period. In this case procedure heading is omitted. The body text of the synthesis should immediately follow the name of the compound. At the end of the synthetic procedure, yield of the reaction in grams, percent yield in parenthesis, characterization data should be included.

Supporting Information

- The words “**SUPPORTING INFORMATION**” should be in bold type and align left. It should be followed by an “enter”. (Press the enter key).
- The paragraph describing the supporting information should be typed in traditional paragraph style.
- Graphs/ Spectra etc submitted as Supporting Information must all be given a title and labeled properly. This can be done by hand or typed.

References:

- The word “**REFERENCES**” should be in bold type and align left. It should be followed by an “enter”. (Press the enter key).
- The references should be in American Chemical Society style.
- The references should be numbered in the following format:
    1) Reference 1
    2) Reference 2
    3) Reference 3

How to Format In-Text Citations

(For more detailed information see ACS Style Guide, pp 287-290.)

Superscript numbers

At the end of the cited information:

E.g., Fluoridated water as well as various fluoride products such as toothpaste provide fluoride ions necessary for remineralization.[1]

How to Format Reference Lists

Books

(ACS Style Guide, pp 300-305)

Single author	Chang, R. *General Chemistry: The Essential Concepts,* 3rd ed.; McGraw-Hill: Boston, 2003.
Edited Book	Gbalint-Kurti, G. G. Wavepacket Theory of Photodissociation and Reactive Scattering. In *Advances in Chemical Physics;* Rice, S. A., Ed.; Wiley: New York, 2004; Vol. 128; p 257.
Book in Series	Goh, S. L. Polymer Chemistry in an Undergraduate Curriculum. In *Introduction of Macromolecular Science/Polymeric Materials into the Foundational Course in Organic Chemistry*; ACS Symposium Series 1151; American Chemical Society: Washington, DC, 2013; pp 113-127.
Article from a reference book	Powder Metallurgy. *Kirk-Othmer Encyclopedia of Chemical Technology,* 3rd ed.; Wiley: New York, 1982; Vol. 19, pp 28-62.

Articles

(ACS Style Guide, pp. 291-299 and pp. 317-319 for online articles)

Article in a scientific journal	Evans, D. A.; Fitch, D. M.; Smith, T. E.; Cee, V. J. Application of Complex Aldol Reactions to the Total Synthesis of Phorboxazole B. *J. Am. Chem. Soc.* **2000,** *122*, 10033-10046.
Article in a popular/non-scientific magazine	Manning, R. Super Organics. *Wired,* May 2004, pp 176-181.
Article from an online journal	Peacock-Lopez, E. Exact Solutions of the Quantum Double Square-Well Potential. *Chem. Ed.* [Online] **2007,** *11*, 383-393 http://chemeducator.org/bibs/0011006/11060380lb.htm (accessed Aug 23, 2007).

Theses, Patents, Conferences, Technical Reports

(ACS Style Guide, pp 307-316)

Theses	Thoman, J. W., Jr. Studies of Molecular Deactivation: Surface-Active Free Radicals and S(O)para-difluorobenzene. Ph.D. Dissertation, Massachusetts Institute of Technology, Cambridge, MA, 1987. or Gehring, A. PhD. Dissertation, Harvard University, 1998.
Patents	Diamond, G.; Murphy, V.; Leclerc, M.; Goh, C.; Hall, K.; LaPointe, A. M.; Boussie, T.; Lund, C. Coordination catalysts. US 20020002257 A1, January 3, 2002.
Conference/Meetings (full-text)	Winstein, S. In *University Chemical Education,*Proceedings of the International Symposium on University Chemical Education, Frascati (Rome), Italy, October 16-19, 1969; Chisman, D. G.. Ed.; Butterworths: London, 1970.
Conference/Meetings (abstract only)	Kaplan, L.J.; Selder, A. *Books of Abstracts,*213th ACS National Meeting, San Francisco, CA, April 13-17, 1997; American Chemical Society: Washington, DC, 1997; CHED-824.
Technical Report or Bulletin	Crampton, S.B.; McAllaster, D. R. *Collision and Motional Averaging Effects in Cryogenic Atomic Hydrogen Masers;* WMC-AFOSR-002; NTIS: Springfield, VA, 1983.

Web/Online

(ACS Style Guide, pp 316-325)

Note: Different web browsers break the text in different places of a URL. In a printed work, if the URL needs to be broken at the end of a line, the break should be made after a colon or a double slash; before a single slash, a tilde, a period, a comma, a hyphen, an underline, a question mark, a number sign, or a percent symbol; or before or after an equals sign or an ampersand.

Resource:*https://www.chicagomanualofstyle.org/16/ch14/ch14_sec012.html*

Web page	National Library of Medicine. Environmental Health and Toxicology: Specialized Information Services. http://sis.nlm.nih.gov/enviro.html (accessed Aug 23, 2004).
Article from an online journal	Peacock-Lopez, E. Exact Solutions of the Quantum Double Square-Well Potential. Chem. Ed. [Online] 2007, 11, 383-393 http://chemeducator.org/bibs/0011006/11060383ep.htm (accessed Dec 6, 2018).
Article from full text database	Begley, S. When Does Your Brain Stop Making New Neurons? Newsweek [Online] July 2, 2007, p 62. Expanded Academic Index. http:/galegroup.com (accessed Aug 23, 2007).
Article published online in advance	Chung, J.M. and Peacock-Lopez, E. Cross-diffusion in the Templator model of chemical self-replication. Phys. Lett. A [Online early access]. DOI:10.1016/j.physleta.2007.04.114. Published Online: June 12, 2007. http://www.sciencedirect.com (accessed Aug 23, 2007).
Computer Program	SciFinder Scholar, version 2007; Chemical Abstracts Service: Columbus, OH, 2007; RN 58-08-2 (accessed Aug 23, 2007).

For more information on formatting reports:

Resource 1:*https://libguides.williams.edu/citing/acs*
Resource 2: https://pubs.acs.org/isbn/9780841239999