



CAMPBELLVILLE UNIVERSITY

COURSE SYLLABUS

PLEASE TYPE.

DATE 19 December 2016

ACADEMIC UNIT Natural Science Division

FACULTY Elizabeth K. Sutton

Discipline	Course # Section	Title of Course	Credit Hours	Cross Reference (if applicable)
CHE	480-01	Senior Seminar	1	n/a

TEXTBOOK Required Not Required

Author Beal and Trimbur Title A Short Guide to Writing About Chemistry, 2nd ed

Publisher Pearson Education Date of Publication 2001

WORKBOOK Required Not Required

Author _____ Title _____

Publisher _____ Date of Publication _____

PLEASE ANSWER THE FOLLOWING QUESTIONS ON A SEPARATE SHEET OF PAPER AND ATTACH TO THIS FORM.

1. DESCRIPTION OF COURSE: Develop a brief description of the course as it will appear in the Catalog.
2. STUDENT LEARNING OBJECTIVES: List the student learning objectives for the course. Please relate these objectives to the mission and goals of the University and the Academic Unit. For general education courses, please indicate which student learning objectives address general education goals and the intended method of assessment. A minimum of four of the seven general education goals must be included.

Example: Students will demonstrate their ability to compare and contrast two types of basket weaving. (Goal: Oral and Written Communication; Evidence: research paper and class presentation)

3. COURSE OUTLINE: Outline the topics/units that are to be taught.
4. EVALUATION: How do you plan to determine the grade in the course? Please include grading scale.
5. REQUIREMENTS:
 - a. Examinations: State when tests are to be administered, including unit, mid-term, and final examinations.
 - b. Reports: How many, length required, and what type (Oral, term and/or research, book critiques).
 - c. Supplemental reading assignments or outside work required.
 - d. Supplemental instruction aids: Audio visual aids, field trips, guest speakers, etc.

6. BOOKLIST

DEAN

Date Copy Received _____

VICE PRESIDENT FOR ACADEMIC AFFAIRS

Date Copy Received _____

I. TITLE: CHE 480 Senior Seminar, one credit hour

II. COURSE DESCRIPTION: This course is designed for senior undergraduate students who are pursuing a BA or BS degree in chemistry. The goals of this course are to provide training in: oral presentations using Powerpoint, literature reviews, and poster presentations. The overall objective of the course is to provide training in areas critical to success in a job or academic pursuit that may not be covered in traditional courses. These topics are essential to success in a chemistry related job, graduate work, or professional school. Prerequisites: Junior standing, CHE 315, CHE 380 or consent of instructor.

III. TEXT: *A Short Guide to Writing about Chemistry*, 2nd Ed. (Beal and Trimbur), Pearson Education, 2001.

IV. COURSE OBJECTIVES:

- A. **General Education Curriculum Objectives (GECO):** (numbered to correspond to the objectives listed in the University catalog.)
2. Critical Thinking: Students will demonstrate the ability to reflect on theories and issues in a systematic fashion.
 4. Ethics: Students will demonstrate an understanding of Christian values and ethical standards in order to make mature and informed decisions concerning moral issues.
 5. Oral and Written Communication: Students will demonstrate the ability to express ideas, beliefs, and information in an organized, precise, and persuasive manner.
 6. Quantitative Literacy: Students will demonstrate the ability to understand and utilize mathematical and/or logical relationships to analyze data, to construct and assess arguments, and to make sound judgments in quantitative situations that arise in daily life.
 7. Social Responsibility and Citizenship: Students will demonstrate an understanding of personal and social responsibility in a changing global environment so that students can make contributions to their respective discipline and to society as a whole.
- B. **Student Learning Outcomes (SLO):** Students will demonstrate their laboratory skills and problem solving ability in this course. (Numbered to correspond to the pertinent General Education Curriculum Objective [GECO]).
1. The student will recognize how chemistry provides solutions to contemporary, historical, technological, and societal issues. (GECO 2, 4, 6, 7; Evidence: career, literature and abstract projects)
 2. Students will develop an awareness of how a basic understanding of chemistry, the proper application of that knowledge, and the interaction between chemistry and other fields of study and careers is important to personal and social issues. (GECO 4, 6, 7; Evidence: career project, job application assignment)
 3. Students will follow ethical practices when conducting research, writing reports, using sources and when working with others. (GECO 4; Evidence: ethics assignment)
 4. Students should be able to read, understand, and apply scientific information through thinking more critically, discussing more meaningfully, arguing more persuasively, and writing more effectively. (GECO 2,5; Evidence: literature search assignment, abstract assignment)
- C. **Program Learning Outcomes (PLO):** (numbered to correspond to the listing in the program assessment document)
1. The student will be able to demonstrate a solid understanding of the core principles in the traditional subdivisions of chemistry: Analytical, Inorganic, Organic, and Physical.
 4. The student will be able to articulate chemical information/data/ideas clearly and effectively in speech and in writing in an acceptable presentation format.
 6. The student will demonstrate critical thinking skills in chemistry: interpretation, evaluation, explanation, and critical inquiry; how to ask appropriate questions, gather relevant information efficiently and creatively, and reason logically from this information to make reliable conclusions.

D. **Course Specific Objectives (CSO):** The primary objective of this course is to provide an opportunity for the student to explore areas of chemistry in which he/she has a personal interest. In addition, students will learn to properly search the body of scientific literature and to present a scientific seminar.

V. COURSE OUTLINE

Effective communication of a chemist's knowledge to a variety of audiences is just as important as the knowledge of chemical concepts and facts and the application of these facts to solving problems. This course is designed to help you improve your written and oral communication skills in chemistry. This course is a continuation of CHE 380. CHE 480 is specifically designed to help you:

- Learn about different forms of scientific writing
- Learn how to read the scientific literature
- Learn how to search the chemical literature
- Improve your writing skills
- Learn what plagiarism is and how to avoid committing plagiarism
- Learn about ethical issues relevant to science
- Learn how to deliver an interesting, organized seminar based on the scientific literature
- Learn how to construct a well-organized, informative resume.
- Complete some reading and writing assignments
- Make a short oral presentation, based on a scientific article of your choice, to the class
- Attend several seminars and submit a written evaluation of the seminars to your instructor.
- Write a 1-2 page overview (excluding figures) of your planned CHEM 480 seminar
- Communicate the results of a scientific endeavor in a Poster presentation
- Communicate the results of a scientific endeavor in a verbal PowerPoint presentation

VI. COURSE EVALUATION:

The standard ten-point grading scale will be used for assigning grades. [A = 91-100, B = 81-90, C = 71-80, D = 61-70, F = below 60] If, for any reason, you cannot continue to attend this class, be certain you DROP OFFICIALLY. Otherwise you will automatically receive a failing grade.

Grading Elements

Chemistry 480 Points		
Element	Description	Max. Points
Resume	Preparation of your professional resume	20
Seminar Critiques	Three critiques (10 points each)	30
Literature Homework	Complete literature search on a scientific topic related to your poster and seminar presentations	20
Assignment #1	Know your audience, pitch your story	15
Assignment #2	Resources and picking an article	10
Assignment #3	Video: "Do Scientists Cheat"; Is Ethics Relative; critique	10
Assignment #4	Ethical issues in conducting research.	10
Assignment #5	Ethical issues in disseminating research	10
Assignment #6	Personal Ethics Statement	15
Assignment #7	Initial review of chosen research article	10
Assignment #8	Outline of presentation article	10
Assignment #9	Practice results to the group	10
Assignment #10	Poster presentation to the Division	40
Assignment #11	Final seminar to the Division	40
Total		250
<p>A missed event can be made up at the discretion of the Professor. Activities required to make-up missed events will be decided by the Professor in consultation with the student. Missing more than two of the events will result in zero points for all missed events with no option for make-up. Assignments turned in after the deadline will have 2 points deducted for the first day that it is late, with 2 points deducted each additional day that it is late (including weekends).</p>		

VII. COURSE REQUIREMENTS:

A. **Attendance:** The attendance policy of the University will be strictly enforced in this class.

B. **Numbers to Remember:**

1. **Campus Security Cell Phone: 270-403-3611**
2. **Campus Security Office Phone: 270-789-5556**
3. **Natural Science Office: 270-789-5065**

C. **Classroom Behavior:**

1. Guests are only allowed in class at the discretion of and with prior approval from the instructor.
2. Electronic recording devices of any kind are not permitted except in special circumstances and with the specific permission of the instructor.
3. While you are expected to attend and participate in this class, your cell phone, computer, and MP3 players are **not**. Pagers, cell phones, and similar items are disruptive to the entire class and **must be turned off** during class. **The owner of any such device that activates during class will be immediately excused from class and counted as absent for the entire period.**
4. Use of cell phones, computers, and MP3 players during examinations and quizzes will be considered academic dishonesty, which will result in a zero being awarded for the quiz or examination (No exceptions!).
5. Hats and caps are to be removed prior to entering the classroom.
6. Take care of any physiological needs *before* coming into the classroom.
7. Unacceptable student behaviors:
 - a. Sleeping during class
 - b. Chronic tardiness. Be here ready to learn when class begins.
 - c. Reading, studying or working on materials for other classes.
 - d. Chatting with your classmates when the instructor or other classmates are speaking.
 - e. Prematurely packing up your books and bags before class has been dismissed.

D. **Academic Misconduct:** Students in this course will be working toward mastery of the material to satisfy the course objectives. ***This class is held to an honor system, meaning that cheating, allowing someone to cheat, or failing to report known cases of cheating are all considered academic misconduct. The Division of Natural Science Academic Integrity Policy will be followed in this class.*** Be aware that aggressive methods are used to protect the majority of you who are honest. For information about plagiarism and how to avoid it, consult the following website: <http://www.indiana.edu/~istd/>. Students will be asked to sign an integrity statement on each examination and quiz. The following statement reads as follows:

"I pledge on my honor that on this assignment/examination/quiz I have neither received nor given nor have I seen any dishonest work.

Signature _____ Date _____

E. **Resume:** You will prepare a 1-2 page resume. See the following links for help:

- <https://owl.english.purdue.edu/owl/resource/719/1/> and
<http://www.indiana.edu/~wts/pamphlets/resume.shtml>

F. **Seminar Attendance:** The chemistry department has introduced a seminar attendance policy in each of its courses. Each student in a chemistry course is required to attend a certain number of natural science seminars. The actual number is determined by the course instructor. **For this course you will be expected to attend three (3) natural science seminars this semester.** Be sure that your attendance at the seminar is recorded. After attending the seminar, you will write and turn in a one-page typewritten critique/summary of the seminar. The critique must be submitted within ONE WEEK of the seminar presentation. The format of the critique/summary will be discussed in lecture.

Critiques of Seminars

1. Make sure you attend seminar with paper and writing implement.
2. Note the title of the lecture, and the speaker's name and affiliation.
3. Pay attention to the "big picture" by noting down key words, key topics, and key questions posed.
4. Attempt to formulate questions while you are listening. Make notes of these.
5. Summarize your questions into one or two that you could or would ask the speaker.

Format for critique: (Short paragraphs)

Paragraph 1: Speaker, name, affiliation, and details of their reputation (or their local host)

Paragraph 2: Paraphrase the general area of the talk. What type of scientific literature is involved? What kind of instrumentation, synthesis, and related issues were important? What are the central questions posed by the speaker?

Paragraph 3: What did you learn from the lecture? What specific question(s) did you leave with?

Paragraph 4: Give a rating of the lecture quality, including speaker's ability to articulate verbally, quality of visual aids (slides), and their ability to engage the audience and address questions.

G. Literature Homework: For the homework you will need to do a complete literature search on a scientific topic related to the Poster and Seminar presentations you will present. Topic selection is subject to the approval of the Instructor. You will need to turn in a document including the following:

- 1) A 1-2 page description of the search methods and strategy used,
- 2) 1-3 references for book chapters, conference proceedings, encyclopedias, or review articles,
- 3) A list of 3 websites providing information about your topic,
- 4) At least five citations for articles from peer-reviewed scientific journals.
- 5) A Title and Abstract of your Presentation

Note: see attached rubric for assessing Information Literacy

H. Poster: You will first present your topic as a poster presentation. The poster will be presented on a 3 ft x 6 ft board and should follow the guidelines passed out in class. The grade will cover clearness and organization of the poster and the student's ability to discuss the contents with students and faculty.

I. Seminar: You will present your topic as a seminar. It should be 15 minutes long, including 3 minutes for questions, and be presented using PowerPoint slides. Each student is required make an appointment to present a practice version of the seminar to the Instructor.

VIII. BOOK LIST

- A. The ACS Style Guide: Effective Communication of Scientific Information (Anne M. Coghill and Lorrin R. Garson, eds.)
- B. *Nontraditional Careers for Chemists* (Lisa M. Balbes)
- C. Students are urged to purchase a copy of the book *Elements of Style*, Strunk and White, 4th edition and *The ACS Style Guide: A Manual for Authors and Editors*, Dodd editor. Both are essential books to have on your bookshelf.

IX. DISABILITIES

Campbellsville University is committed to reasonable accommodations for students who have documented physical and learning disabilities, as well as medical and emotional conditions. If you have a documented disability or condition of this nature, you may be eligible for disability services. Documentation must be from a licensed professional and current in terms of assessment. Please contact the Coordinator of Disability Services at 270-789-5192 to inquire about services.

X. ACADEMIC SUPPORT

The Academic Support area, located in the Badgett Academic Support Center (BASC), exists to help students. At certain times, most students need some help with studying, choosing a career, major/minor, or assistance in a difficult course. The following services are available Career Services, Disability Services, tutoring, and the Citizens Bank & Trust Writing Center. These services are provided at no extra cost to the student. Space is also available for individual and group study, and laptop computers are available for students to check-out and use within the building. Information about these services is accessible by clicking on the "Current Students" tab on the University website at www.campbellsville.edu. Information is also available by calling the Office of Academic Support at (270) 789-5064.

XI. TITLE IX

Campbellsville University and its faculty are committed to assuring a safe and productive environment for all students. In order to meet this commitment and to comply with Title IX of the Education Amendments of 1972

and guidance from the Office of Civil Rights, the University requires all responsible employees, which includes faculty members, to report incidents of sexual misconduct shared by students to the University's Title IX Coordinator.

Title IX Coordinator:

Terry VanMeter
1 University Drive
UPO Box 944
Campbellsville, KY 42718

Administration Office 8A
Phone: 270-789-5016
Email: twvanmeter@campbellsville.edu

Information regarding the reporting of sexual violence and the resources that are available to victims of sexual violence is set forth at: www.campbellsville.edu/titleIX

CHE 480 Spring 2017 Tentative Schedule			
Date	Week	Topic/Title	notes
1/18	1	NO CLASS	
1/23	2	Organizational meeting/syllabus/, presentation style introduce assignment #1 ; Good communication skills/lecture & discussion	
1/30	3	Presentations-Assignment #1	
		Video: "Do Scientists Cheat" Assignment #3 Picking the basis of your departmental presentation-using the library and on-line databases (or undergrad research); How to read the literature; Introduce Assignment #2	
2/6	4	Assignment #2 DUE ; Discuss Ethics Case Studies	
2/13	5	Assignment #3 DUE	
2/20	6	Assignment #4 DUE No formal Class- Check your understanding of the results One-on-one Scheduled appointments with Instructor	
2/27	7	Assignment #5 Personal Ethics Statement DUE No formal Class- Check your understanding of the results One-on-one Scheduled appointments with Instructor	
3/6	8	No formal Class- - Check your understanding of the results One-on-one Scheduled appointments with Instructor	
3/13--3/17	9	SPRING BREAK-NO CLASS	
3/20	10	Assignment #6 DUE	
3/27	11	Assignment #7 Overview of Article Presentation DUE	
4/3	12	Assignment #8 Outline of Article DUE	
4/10/17	13	Assignment #9 Presentation of Results Section DUE	
4/14- 4/17		<i>Easter holiday- NO CLASS</i>	
4/18	14	Poster Presentations-Assignment #10	
4/24	15	No formal Class-work on presentations One-on-one Scheduled appointments with Instructor	
5/1	16	Departmental Presentations-Assignment #11	
5/8	17	Finals Week	

In the event of class cancellation for any reason (weather, instructor illness, etc.) exams or other scheduled activities will be administered in the next active class period.

Assignment Specifics:

Attendance

Role will be taken and attendance at all of the assigned events is expected as outlined above.

Assignment #1 (15pts)

Goal: Know your audience; pitch your message to your audience's level of knowledge.

Method: Pick a fundamental chemical or biochemical process. You may thumb through one of your upper division chemistry textbooks to find a topic. Know your subject. Be prepared to:

- 1) explain the topic to a Kentucky State Senator who is thinking about initiating a bill for funding related to your topic. The Senator has a B.S. in Chemistry. You only have 2 minutes of his/her time.
- 2) explain the topic to your grandmother. She has just heard the topic mentioned on the news and does not understand it.
- 3) explain the topic to a potential employer (could be a med school interview, a pharmaceutical company, or graduate school) (i.e., someone that has a background in chemistry and may likely be doing research in the area)

Presentation Date:

Assignment #2 (10 pts)

Goals: Know your resources and how to use them

Method: Using the variety of on-line databases, chose an article that will serve as the "meat" of you departmental oral presentation. Guidelines:

- 1) Because this will be a Chemistry seminar, the subject matter should be in the area of chemistry.
- 2) Pick an article that is from 2006 or later.
- 3) Journals that might be helpful: Science, Journal of the American Chemical Society, Journal of Organic Chemistry, Medicinal Chemistry
- 4) You will want an article that has more than one piece of data (one figure won't give you a lot to present).
- 5) articles must be approved by the instructor

Due Date:

Assignment #3 (10 points)

Video "Do Scientists Cheat?" and discussion.

Assignment: Read handout "Is Ethics Relative?"

- Write a short elaboration on one of the dichotomies presented in the text "Is Ethics Relative?"

Due Date:

Assignment #4 (10 points)

Ethical issues in conducting research. *On Being a Scientist*, 1-8.

Due Date:

Assignment #5 (10 points)

Ethical issues in disseminating research. *On Being a Scientist*, 9-13.

Due Date:

Assignment #6 (15 points)

Students present and defend a personal ethics statement.

Due Date:

Assignment #7 (10 points)

Goal: Convey the essence of the chosen article or research project using a summary of the data in an informal setting

Method: Each student will have 5 minutes to present the:

- 1) overall point of the paper/research (what question was being addressed) (5 pts)
- 2) summarize the type of experiments that were done to answer the question (5 pts)
- 3) a summary of the results and conclusions (5 pts)

Things to discuss:

- 1) Are there fundamental processes or techniques that you are unfamiliar with? Where will you go to find out more about them?
- 2) Which data will you show in your final presentation? Which data best supports the conclusion? Which data provide controls?
- 3) Do you need to find supplementary articles?

Presentation Date:

Assignment #8 (10 points)

Goal: Based on reading material and constructive criticism, outline the components of a formal presentation

Method: Use the constructive criticism received from Assignment #7 to form an outline for your verbal presentation. Supply a Word or PowerPoint document that outlines what will be on each of about 10-15 slides. There is no need for the slides to be “complete”, only that you have an idea for the content of each slide.

Due Date:

Assignment #9 (10 points)

Goal: Be sure that your science is correct and your delivery is smooth

Method: Practice. Each student will present the results section of their seminar in the form of PowerPoint slides. We will have a group discussion on the clarity and scientific correctness of your dialogue.

Presentation Date:

Assignment #10 (40 points)

Goal: Communicate the results of a scientific endeavor in a Poster presentation

Method: Each student will prepare a poster documenting the science.

Grading Rubrics: your poster presentation will be graded on the same topics that the semester has introduced in the individual assignments: neatness and clarity of the presentation, organization, ability to verbally convey the scientific information in a clear fashion, ability to answer questions about the material, professional attitude, correctly address the specific audience, and the correct use of copyright material.

Presentation Date:

Assignment#11(40 pts)

Goal: Communicate the results of a scientific endeavor in a verbal PowerPoint presentation

Method: Each student will have 12 minutes + a 3 minute question period to present either the subject of their current undergraduate research or the subject of a peer-reviewed journal article.

Grading Rubrics: your verbal presentation will be graded on the same topics that the semester has introduced in the individual assignments: neatness and clarity of the presentation, organization, ability to verbally convey the scientific information in a clear fashion, ability to answer questions about the material, professional attitude, correctly address the specific audience, and the correct use of copyright material.

Presentation Date:

Resources:

How to write a Research Report

- ACS, Committee on Professional Training, Preparing a Research Report,
http://portal.acs.org/portal/fileFetch/C/CTP_005606/pdf/CTP_005606.pdf

For information about plagiarism and how to avoid it, consult the following websites:

- Plagiarism? It's your call (Western Michigan University/Stanford University, 2008)
<http://www.wmich.edu/library/searchpath/module6> [Invalid link]
- You Quote It, You Note It! (<http://library.acadiau.ca/tutorials/plagiarism/>) (accessed 19May2015)
- The Plagiarism Court: You Be the Judge (Islam,2007, Fairfield University)
http://www.fairfield.edu/library/lib_plagiarismcourt.html) (accessed 19May2015)
- Indiana University Bloomington, School of Education (accessed 19May2015)
<http://www.indiana.edu/~istd/>.
- Understanding Plagiarism (http://wps.prenhall.com/hss_understand_plagiarism_1/)
Scroll to the bottom of the page to follow the link to the next page. (accessed 19May2015)

Chemistry 480 Information Literacy Assessment Rubric

Purpose

- Provide you with criteria that define effective use of information for research.
- While all of the items listed below will be assessed in final papers and presentations, elements 1 – 4 are relevant to the report you will write about your process and experience of searching for information sources.

Scoring Rubric

1. Effectively search the chemical literature and retrieve background information relevant to the project.

	Excellent =3	Good/Adequate =2	Needs Work =1	Not evident = 0
Find chemistry-specific sources of background information such as encyclopedias, treatises, compiled works, and review articles, if relevant.	Sources or text include reference to several chemistry-specific sources of background information.	Sources or text include reference to a few chemistry-specific sources of background information.	Minimal number of chemistry-specific sources of background information evident.	No chemistry-specific sources of background information evident.

2. Use SciFinder (Chemical Abstracts) and other databases to conduct a comprehensive subject search to find research-based sources.

	Excellent =3	Good/Adequate =2	Needs Work =1	Not evident = 0
Find scholarly journal articles or other authoritative sources to support arguments and assertions.	Supports all arguments with cited evidence.	Most arguments supported with cited evidence.	Few arguments supported with cited evidence.	Virtually no arguments supported with cited evidence.
Use reviewed articles (a.k.a. refereed) or authoritative sites to fulfill research needs.	All sources from reviewed publications (peer-reviewed or editor-reviewed) or authoritative websites.	Some sources from reviewed sources (peer-reviewed or editor-reviewed) or authoritative sites, and some sources from out-of-date, biased, or questionable sources.	Many sources from out- of-date, biased, or non-professional sources, and few peer-reviewed sources.	No peer-reviewed sources used.

3. OPTIONAL: Augment research by pursuing both cited references in relevant papers and more recent papers that cite those relevant papers.

	Excellent =3	Good/Adequate =2	Needs Work =1	Not evident = 0
Use the Web of Science database or SciFinder Scholar's "get related" command to identify and locate papers citing a specific paper and/or author.	The report on literature searching explains how cited and citing references were used to discover additional useful publications.			No mention of exploring cited and citing references to discover additional useful publications.

4. Evaluate websites and other information resources.

	Excellent =3	Good/Adequate =2	Needs Work =1	Not evident = 0
Evaluate the authority and appropriateness of a web site or other information source.	Identifies and/or acknowledges all authors' credentials and acknowledges the purpose or bias of each source.	Identifies and/or acknowledges most authors' credentials and acknowledges the purpose or bias of most sources.	Does not identify or acknowledge authors' credentials for most sources or does not acknowledge the	Does not identify or acknowledge authors' credentials or does not acknowledge the

			purpose or bias of most sources.	purpose or bias of sources.
Corroborate information found in websites with information from reviewed sources, if relevant.	Corroboration in every case.	Corroboration in many cases.	Corroboration in few cases.	No evidence of corroboration.
Sources published within appropriate time frame for current and/or historical reference.	All sources published in appropriate time frame.	Most sources published in appropriate time frame.	Few sources published in appropriate time frame.	All sources out of date.

5. Read, digest and synthesize the information that is found.

	Excellent =3	Good/Adequate =2	Needs Work =1	Not evident = 0
Select information that provides evidence for the topic.	All sources clearly related to topic.	Most sources clearly related to topic.	Many sources unrelated to topic or relevance is unclear.	Virtually all sources unrelated to topic.
Synthesize and integrate information by paraphrasing and quoting effectively.	All quotes and paraphrases are integrated into the text appropriately and effectively.	Most quotes and paraphrases are integrated into the text appropriately and effectively, with some placed into text without any connections drawn.	Many quotes and paraphrases placed in text without any connections drawn or comments included.	Most quotes and paraphrases placed in text without any connections drawn or comments included.

6. Follow appropriate protocol to cite information sources and acknowledge copyright for graphs, charts, or other material from published sources.

	Excellent =3	Good/Adequate =2	Needs Work =1	Not evident = 0
Correctly cite sources according to the style specified by one of the journals published by the American Chemical Society (ACS).	All references cited in correct format with virtually no errors in format.	Most references are identified, with some errors in format.	Insufficient or incorrect information for many sources, with frequent errors in format.	No bibliography or list of cited sources.
Correctly identify and acknowledge original source(s) of paraphrased elements.	All paraphrased entries correctly cited.	Most paraphrased entries correctly cited.	Some paraphrased entries correctly cited.	No paraphrased entries correctly cited.
Properly cite figures, drawings, and quotes in presentation.	All figures, drawings, and quotes correctly cited.	Most figures, drawings, and quotes correctly cited.	Some figures, drawings, and quotes correctly cited.	No figures, drawings, or quotes correctly cited.

Sources:

Emmons, Mark and Wanda Martin. "Engaging Conversation: Evaluating the Contribution of Library Instruction to the Quality of Student Research." *College & Research Libraries* 63.6 (2002): 545-559.

Chemical Information Retrieval (ACS Division of Chemical Information): <http://chemunder.chemistry.ohio-state.edu/under/programs/acsdsc4.htm>

Information Competencies for Chemistry Undergraduates: the elements of information literacy (Special Libraries Association): <http://units.sla.org/division/dche/il/cheminfoit.pdf>

ACRL Standards (American Library Association):

<http://www.ala.org/ala/acrl/acrlstandards/informationliteracycompetency.htm>