

YOUNGSTOWN STATE UNIVERSITY
Department of Chemistry

Chemistry 4850 (21346)

Chemistry Research

Spring 2009

Instructor: Dr. S. M. Schildcrout, Room 5022 Ward Beecher Hall
Telephone and voice-mail: 330-941-7114; e-mail: *smschild@cc.yzu.edu*
Office hours: TTh 3:15 – 5:00 p.m.; also by chance or appointment.

Class meets: F 2:00 – 2:50 p.m. (seminars at 3:15 p.m. as announced), Room 6030 Ward Beecher Hall

Date	Topic	Deadline
Jan. 23	Introduction. What is research?	
30	Tools of research	Identify area of research interest.
Feb. 6	Keeping research records	
13	Ethical standards in research	Choose a journal article for review.
20	Scientific writing	
27	Searching the chemistry literature (meet in library)	
Mar. 6	The research problem	Submit review of journal article.
20	The literature review	
27	Research design	Submit topic & outline for proposal or review.
Apr. 3	The research proposal	
10	The experimental study	Submit written proposal or review.
17	Making effective oral presentations.	
24	Oral presentations by students	Present oral proposal or review.
May 1	Oral presentations by students	Present oral proposal or review.

Overview and goals: This course is designed to introduce you to the fundamental and practical aspects of research, especially as they apply to chemistry. It is a “capstone” course for chemistry under YSU’s General Education Requirement. You will

- understand what scientific research is and is not.
- learn how to search the scientific literature and how to prepare a research proposal.
- understand research methodologies.
- learn how research results are presented (as theses, oral presentations, journal articles) and evaluated.
- be familiar with ethical standards in scientific research.
- formulate a research question or problem as the basis of your oral and written reports.
- develop skills in scientific writing and oral presentation.

Requirements: You must satisfactorily complete the four assignments as listed below. Background and instructions for these will be discussed in class. Regular class attendance and participation in class discussions are expected. You are responsible for all material covered in class including announcements and handouts. Attendance at departmental seminars is also expected.

Grading: The following table shows the components of the grade with the maximum scores indicated. Your final grade will depend on the total score, with these minima for each grade: A 90, B 80, C 70, and D 60.

Review of a journal article (written)	25
Research proposal or review (written)	25
Research proposal or review (oral)	25
Reports on seminars (written)	25
Total	<u>100</u>