CHMG200: Research Skills and Ethics  
Summer 2007

Professor: Penny Beuning  
Office: 006 Hurtig Hall
Lectures: Monday, Wednesday  
Time: 6:00 - 8:30 PM
Location: 130 HT
Office Hours: Wednesday 2:30-4:30 PM, other times by appointment (no office hours on June 6, June 13, or July 4)
Course credit value: 3 SH  
Pre-requisites: none

Required Books (available at the bookstore):
Bloomfield, Victor and El-Fakahany, Esam Tools for Success in Science: A Chicago Guide for Graduate Students and Postdoctorals (pre-publication)

Note: The above books (except Bloomfield and El-Fakahany), and others that may be useful, have been placed on reserve in Snell Library.

Background information:
This course is a required element for the M.S. (coursework and thesis) and Ph.D. programs in Chemistry & Chemical Biology and is normally completed by graduate students during their first year of graduate study. Attendance is mandatory. Please notify the instructor in advance of any necessary absence. Make-up assignments will be required for each absence. More than two unexcused absences will result in a failing grade.

Useful Dates to Keep in Mind:
Last day to drop without a W grade – May 25
Last day to drop with a W grade – June 8
Final Exam Week – August 13-18

Grading:
• CV, Resume, Cover letter 100 points
• Research Proposal: First draft 50 points; Peer review 50 points; Final draft 100 points
• Research Proposal Presentation 100 pts
• Short essays 50 points (10 pts each) (will be posted on Blackboard)
• Class Attendance and Participation 50 points
TOTAL 500 pts
A  >450 pts  B  400 - 449 pts
C  300 – 399 pts.  F  <300 pts

Course Schedule (no class on May 28, July 4):
May 7: Course Introduction, Graduate Research, and Ethics in Science

May 9: Ethics in Science, Time Management
Bloomfield Ch 10, 13; Macrina Ch 1, 2

May 14: Record keeping, data analysis and management
Bloomfield Ch 11; Macrina Ch 11 and Appendix VI (and 1)
May 16: Bibliographic Databases and Search Strategies, Chemical Information, Guest Speaker: Kathy Herrlich, Snell Library; Note Special Location: 120 Snell (6-7:15 PM)
Bloomfield Ch 16; Davis Ch 4, 12

Part II (130 HT) Attending Conferences (7:30-8:30 PM)
Bloomfield Ch 17-20; Davis Ch 17 and pages 141-144 and http://mit.edu/biology/www/outreach/pdfs/effective_posters.pdf

May 21: Authorship, Writing the Journal Article, Peer Review
Bloomfield: Ch 21, 22, 24; Macrina: Ch 4; Davis: Ch 1-3, 7-13 (appendices recommended)
ACS Style Guide: required: Ch 1-3, 6-7; recommended: Ch 4-5

May 23: Grant-Writing Workshop, Guest Speaker: Carolyn Futrelle
Bloomfield Ch 25; Davis Ch 5

(May 28, no class, Memorial Day)

May 30: Joining and Working in a Research Group, Conflict Resolution, Collaborations
Bloomfield: Ch 3-4, 12, 17; Macrina: Ch 3, 7, 8

June 4, 6: no class
June 11, 13: Mathematics and Mathematica Workshop

June 18: Intellectual Property & Patents, Guest Speaker: Jeff Kosiba
Macrina: Ch 9; Davis: Ch 12

June 20: Laboratory Safety, Fire Safety, Guest Speaker: Jack Price
Macrina: Ch 10 (recommended Ch 5, 6); If absent, complete on-line and classroom training required of your research laboratory.

June 25: Career Issues, Career Options, Panel Discussion of Careers in Chemistry
Bloomfield: Ch 6-9

June 27: Skills for Effective Presentations, Effective use of Technology
Bloomfield: Ch 5, 18-22; Davis: Ch 13-16

July 9, 10, 11: Research Proposal Presentations

Final Research Proposal:
You are to prepare a 10-page original research proposal.
You are expected to prepare your proposal without the assistance of your thesis advisor.
However, you may seek advice and input from other graduate students or postdocs.
June 7: The first draft is due (electronically, PDF or Word formats only). Late papers will not be accepted.
June 9: Drafts will be distributed to peer review groups.
June 22: The peer review groups will review the proposals and return comments to me electronically.
Each reviewer should review each proposal. You will then have time to consider the comments and revise your proposal accordingly.
July 9: Final proposals are due, and presentations will take place this week.