Instructors: Professor Catalina Achim  
Office: Mellon Institute 833  
Telephone: 268-9588  
e-mail: achim@cmu.edu

Class Schedule: Fall 1 Lectures Tuesday and Thursday 9:30 - 10:20 am, Mellon Institute

Instructor’s Office Hours:  
(1) Wednesday, 5-6pm, Mellon Institute 833.  
(2) By appointment.

Brief Course Description: The design and presentation of scientific plans and results to the scientific community are very important aspects of the work of any chemist, who needs to disseminate the results of research by publishing papers and to write research proposal to raise funds. This course will cover skills that are important for the design and writing of scientific documents, such as research reports, papers and research proposals. The course will also cover aspects of responsible research conduct in recording the results of lab experiments. The organization and presentation of data and research ideas for communication to the scientific community will be discussed. Students will learn about the scientific review process to which original manuscripts and proposals are subjected. Students enrolled in the course will be evaluated based on the quality of writing of a short original proposal in the format specified for an NSF Graduate Research Fellowship as well as for their participation in class discussions and in review of proposals written by others. This mini-course is intended for graduate students in Chemistry. Postdoctoral fellows are welcome to audit the course.

There is a Blackboard site for this course. If you need help with Blackboard, go to http://www.cmu.edu/blackboard/help/how_to/get_started_students.htm. Please check periodically the site as announcements about the course, handouts and assignments will be posted regularly.

Recommended Reading  
• Excerpts from books, journal articles, and calls for proposals by private and public Foundations will be distributed through Blackboard.

Course Objectives  
• acquire writing skills that are pertinent to writing scientific documents  
• be familiar with principles of the peer review scientific articles and proposal review  
• gain familiarity with resources useful for improving communication skills in chemistry

Class Schedule  
This class schedule is meant to provide you with an overview of the class and it may change to match the pace of the students enrolled in the class as the semester proceeds. Changes will be announced through the Blackboard site of the course.

September 1, 3 (Lectures 1, 2)  
How to come up with an original idea: inspiration versus algorithm  
Intellectual property issues regarding written text  
Scifinder

September 8, 10 (Lectures 3, 4)  
Organization of a paper or proposal  
General aspects of proposal writing
September 15, 17 (Lecture 5, 6)
Experiment design, data recording and analysis

September 22, 24 (Lectures 7, 8)
The peer review process
Guest lecture by an NSF Program Director or Journal Editor
September 29, October 1 (Lectures 9, 10)
Oral versus written communication
October 6, 8 (Lectures 11, 12)
Broader impacts of research
CV, resume, biosketch
October 13, 15 (Lecture 13, 14)
Collaborative work on written materials
Evaluation of proposals

Course Requirements and Final Grades
Proposal (Contribution to final score: 50%)
Assignments Answers are due a week after the assignment was handed out, must be in electronic form, and must be uploaded in Blackboard by the deadline. No late homework will be accepted without a medical excuse. (Contribution to final score: 30%)
Participation in class discussions (Contribution to final score: 20%)

Letter Grades
The letter grades will be assigned as follows:

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<thead>
<tr>
<th>Percent Range</th>
<th>Grade</th>
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<tbody>
<tr>
<td>100-90%</td>
<td>A</td>
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<tr>
<td>80-70%</td>
<td>C</td>
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<tr>
<td>70-50%</td>
<td>D</td>
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Collaboration Policy
The homework must be done independently. Any student caught cheating will receive no credit and will be referred to the Dean of Student office. The University Policy on Cheating is applicable. Please be familiar with it.

Important dates
September 10       Idea of proposal submitted
September 24       Draft of proposal due
October 8          Proposal due
October 15         Proposal defense/Panel review