

Course Syllabus
CHEM 400: Seminar in Chemical Research
Fall Semester, 2005

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Textbook: The ACS Style Guide by Janet S. Dodd, American Chemical Society Publications, Washington, D.C. 1997

Course Description (from catalog): This seminar is intended to provide experience in current chemical research methods, literature, and writing. The course involves a student research project generally related to current faculty research interests, class seminars, and the writing of journal-style reports. Participation will normally be followed by registration for CHEM 0500 or CHEM 0700.

Course Description/Objective: CHEM 400 is actually two courses in one: a laboratory-based research experience and an associated “Seminar” class. The former is intended to be a mentored experience where the student learns how to design and conduct a scientific investigation while the latter is a support course which aids the student in preparing the final oral presentation and in writing the final research document. (In some cases where the student does not participate in CHEM 700, it is frequently the case that the student prepares a final report of some type.) Thus, the CHEM 400 student has two instructors, (the research advisor and Professor Sandwick) and two sets of course times (the 2 h of CHEM 400 on MW at noon and approximately 12 h of laboratory time). The final grade (see below) is somewhat reflective of how the Chemistry and Biochemistry faculty view the importance of each component of the course with 60 % being assigned to the semester research and 40 % being determined by the student’s performance in handling the tasks of the CHEM 400 “Seminar” class.

Course Objectives/Expectations: The course objectives and the expectations of the student during the research component of the course are determined by the research advisor, usually in consultation with the student. It is the student’s responsibility to make sure he/she has a clear understanding of the research advisor’s expectations in terms of laboratory hours, laboratory performance, keeping up with the literature, etc. The student is urged to sit down and discuss these expectations with the research advisor during the first week of the semester (if they have not already done so earlier).

The “Seminar” portion of the course is primarily concerned with two major products – the oral presentation of research and a final research document (in many cases, the thesis). For most students in this course these will obviously not be finished products by the end of the Fall term, but it is an objective of this course to provide the student with some assistance in developing oral presentations and final reports into high quality performances. Hidden in these outcomes is a thorough understanding of the background of the research and a full comprehension of the chemistry/biochemistry that underlies the experimental approach.

Course Timeline: (Major target dates are in bold)

Sept. 12th – Sept. 19th: An introduction to the oral presentation. An introduction to the literature search.

Sept. 21st – Oct. 5th: Presentation of the theory behind an experimental technique.

October 10th – Nov. 2nd: First set of oral presentations. You must have an acceptable understanding of the objectives/background of your research to give an initial presentation to the class.

Nov. 7th – Nov. 9th: Class discussion of the written research report.

Nov. 14th: First submission of introduction (Background & Significance) portion of thesis. This target date was chosen to allow Professor Sandwick the opportunity to read/edit the submission so that a second draft is developed by the end of the semester.

Nov. 14th – Dec. 7th: Final oral presentation of research

Dec. 9th: First draft of the experimental methods submitted.

January 30th: First thesis defense meeting. The document that the student submits to the thesis committee will hopefully evolve from the first semester into a further polished document.

CHEM 400 “Seminar” Student Responsibilities:

- a. Attend every CHEM 400 session and give appropriate feedback when not presenting.
- b. Prepare and give three presentations and three submissions of written work. All must be produced on time.
- c. Attend all Chemistry seminars (generally Fridays at lunchtime) given by outside speakers. (see attached tentative schedule)
- d. Read a background paper on your research, discuss it with your research advisor, and prepare a one-page summary of the significance of the paper every other week. (Dates: Sept. 23rd; Oct. 7th; Oct. 21st; Nov. 4th; Nov. 18th; Dec. 9th)

Final Grade Calculation: The final grade will be determined by Professor Sandwick in consultation with your research advisor. The percent distribution will be 60 % for the research component and 40 % for the “Seminar” component. All work will be graded on a letter grade scale (A – F). Of the “Seminar” portion of the grade, 20 % of the grade will be based on attendance/class participation/research summaries, 40 % on the oral presentations, and 40 % on the research report. Penalties will be applied to unexcused late work. The course assumes the student will act according to the Honor Code.

Chemistry Seminars for Fall Semester, 2005

(Topics will be announced at a later date.)

22-Sept.	<i>CHEM: Dr. William Zoller, U. of Washington (evening)</i>
7-Oct	<i>CHEM: Dr. Thomas Smith, Williams College</i>
14-Oct	<i>CHEM: Dr. Rick Moog, Franklin and Marshall</i>
4-Nov	<i>CHEM: Dr. Roberta Colman, Univ. of Del.</i>
11-Nov	<i>CHEM: Dr. Robert Rundberg, Los Alamos National Laboratory</i>
18-Nov	<i>CHEM: Dr. Martin Case, UVM</i>