Involvement with research and research techniques is considered an important ingredient in the B.S. program in chemistry and biochemistry. This course was established with the intention that undergraduates in chemistry would have an opportunity to discuss research problems and interests with chemistry and biochemistry faculty, choose a project and research director, carry out the proposed research, and write a report describing the work.

The number of credits assigned at the beginning of the semester determines the weekly work load. As a rule of thumb, 1 credit corresponds to an average weekly minimum of 3 hours in the laboratory. To this, add 1 or 2 hours of planning, interpretation, and reading outside of the laboratory.

Students who are not doing a continuing project from last semester must meet with at least three of the chemistry faculty and select a research director by September 14th. The signature of the three faculty members must be obtained, signifying that such a discussion has taken place. A formal written statement of proposed research must be submitted to Reichardt Building room 194. Although continuing students need not talk to 3 faculty, they must write an outline of planned work, submit an 8.5 x 11 mockup poster, and write a report.

A final report is mandatory. It should follow the format of a manuscript to be submitted to a research journal. Early in the semester, discuss the most appropriate journal format with your advisor. A copy of the report together with an 8.5 x 11 mockup of poster is due to Tom Clausen by no later than 5 PM on the last day of classes, December 10, 2007.

Grades will be assigned by the research advisor based on the amount and quality of the research and the quality of the report. In addition, attendance at research meetings is required. Be certain to discuss grading with your research advisor early in the semester, especially his understanding of what a completed project is.

Additional Guidelines

Safety: Research is a large part of chemistry. There is a big difference between doing a canned experiment, with the TA at one shoulder and the instructor at the other, and doing independent research with less supervision. As part of doing an independent research project, you must receive laboratory safety training and hazardous waste training, and obtain a Lab Safety Card. Please contact the Safety Coordinator for the Department of Chemistry and Biochemistry (Emily Reiter) to arrange for training before beginning your project. You must also turn in a brief project description and a list of chemicals and procedures to be used.
Please remember: laboratory work is to be done with all due precaution. Do not work alone. Wear safety glasses at all times in the lab. Do not eat or drink in the laboratory. Do not rush. Do not attempt any procedure without the necessary training. Familiarize yourself with the potential hazards of all the materials you are using. Last but not least, use common sense. This is a learning experience, so do not be afraid to ask for further assistance.

At the end of the semester, students must complete a “Lab Inspection Check-list” with their research advisor or with Emily Reiter. Final grades will not be turned in until this checklist has been completed.

**Notebook:** Maintain a lab notebook. Enter data and procedures directly into the notebook in ink. Date each entry. Observations, comments, and calculations should also be included. File spectroscopic, chromatographic, and computer records in a 3-ring binder. Number them, and make cross references in your notebook. A new book, "Writing the Laboratory Notebook", may be borrowed from the Chemistry Department library (NSF 170). This lab book belongs to the Chemistry Department or the Research advisor. It must be turned into the research advisor with the final report.

**Weekly Progress:** Work a regular set of hours each week. Meet with your research advisor at a specified time each week to discuss your research.
Research Student ________________________________
email address _______________________________

The following, with 3 or more signatures, must be returned to REIC 194 no later than September 14, 2007. Include a brief description of your research proposal.

___________________________________ has met with me and discussed research.

C. Cahill (REIC 182) ___________________________________________ Date
T. Clausen (REIC 188) ___________________________________________ Date
T. Green (REIC 174) ___________________________________________ Date
W. Howard (REIC 190) ___________________________________________ Date
J. Keller (REIC 161) ___________________________________________ Date
T. Kuhn (Annex 1) ___________________________________________ Date
B. Rasley (REIC 178) ___________________________________________ Date
M. Schulte (REIC 146) ___________________________________________ Date
W. Simpson (REIC 186) ___________________________________________ Date
T. Trainor (REIC 176) ___________________________________________ Date
M. Harris (AHRB 257) ___________________________________________ Date
K. O’Brien (AHRB 226)  Date

Other  Date

I have agreed to serve as research director for the attached research proposal.

_____________________________  __________________
Signature                        Date

Print Name: _______________________________  Number of credit hours: ________