SC496 COURSE POLICY STATEMENT
Section 5511. Spring 2016

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1. OVERVIEW

SC496 is a three credit research chemistry course focusing on original and innovative scientific discovery. SC496 supports all six learning outcomes of the USNA chemistry major. The weekly course time requirement is generally met with a mixture of: (a) six hours of laboratory and/or computational work; (b) the necessary time outside of the laboratory spent working up and analyzing data, reading the literature, designing experiments, writing reports, and preparing presentations. While the six hours of laboratory or computational work are scheduled, students should be flexible about when they work so as to make as much progress as possible. The semester’s effort will be communicated to your peers via a poster presentation during final exam week and a written report due on the last day of classes.

The research topic of section 5511 is potential energy surfaces. The work will primarily be computational.

2. RESEARCH NOTEBOOK

The student is required to maintain a notebook and document all procedures/methods and results.

3. EXPECTATIONS/MILESTONES

a. Six-week point
   - Finalized the question or hypothesis being addressed by the research
   - Have a very good understanding of the background of the research project
   - Reviewed and become familiar with the relevant literature
   - Have developed a research plan to accomplish the work
   - Begun execution of the research plan
   - Become proficient with the needed research tools (computational software, instrumentation)
   - Prepared drafts of the introduction and experimental (computational) sections of the written report

b. Twelve-week point
   - Is executing the research plan and is making satisfactory progress
   - Have prepared final drafts of the introduction and experimental (computational) sections of the written report
   - Have prepared drafts of the results and discussion sections

c. End of semester
   - Have made sufficient progress
   - Gave a research presentation on his/her project
   - Submitted a final written report

4. GRADES

Final report and presentation 25%
Research project and understanding 75%
- Mastery of the background material (15%)
- Proficiency with the research tools (10%)
- Effort and progress on the project (50%)

Note: Grades at 6-weeks and 12-weeks are based on the same percentages (draft written reports replace final report and presentation). Effort and progress may involve some literature consults throughout the semester.
5. SC496 LEARNING OUTCOMES

(1) Answer research questions by employing relevant literature, determining appropriate methods for the investigation, executing the investigation, analyzing and critically interpreting the results obtained, and applying these techniques to the design of future studies.

(2) Communicate the background, methods, results, analysis, and conclusions of research project effectively using oral, graphical, and written expression with a variety of audiences.

(3) Conduct research according to the professional and ethical standards of scientists.

(4) Operate as independent learners capable of self-directed intellectual growth.

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R. E. McClean