

## **CHY 498: Undergraduate Research Requirements and Guidelines**

### *Research Expectations*

In CHY 498, students work with a faculty member, graduate students, and/or other undergraduates to investigate a problem with an unknown solution. Research requires students to integrate the knowledge they have learned from previous lecture and laboratory coursework. Each semester when taking CHY 498, students should meet with their faculty advisor within the first two weeks to establish goals and expectations for the semester. Typically, 4 – 8 hrs of laboratory, computational, and/or literature research per week is expected for each credit hour of CHY 498 taken in a semester. Timing and expectations will be clarified through discussions with your research advisor. Research during the summer and semester without taking CHY 498 credits is permitted and may be used as credit towards later CHY 498 credits through discussions with your research advisor. When enrolled in CHY 498, periodical meetings will be held with the instructor of record (i.e. the faculty assigned to CHY 498 in MaineStreet) to facilitate communication with the research advisor, to organize the poster session, keep track of the submission of deliverables (see below), and ultimately assign a grade for CHY 498 after conferring with the research advisor. Grades will be based on attending all scheduled meetings with the instructor of record, participation in poster sessions, submission of deliverables outlined below, and the research effort/output. The research advisor sets the expectations for the research effort including any reports, meetings, posters, and laboratory/computational/literature effort. Early on, students should discuss with their research advisor what is expected from the student over the semester to obtain a satisfactory grade.

### *Deliverables for CHY 498*

Each semester students are enrolled in CHY 498 they should present a poster either at the departmental poster session (fall) or the UMaine Student Research Symposium (spring). If CHY 498 is taken during the summer, students should present a poster during the fall departmental poster session. At the end of the final semester that CHY 498 credits are taken (i.e. completed a total of 3 credits), students will write a report summarizing the methods and major findings of their CHY 498 experience. This document is expected to be similar in length and scope to a laboratory report for an upper division laboratory, but ultimately the research advisor will set the expectations and assign a grade for the course. For students continuing on to CHY 499 to write a thesis, this report in CHY 498 can serve as an outline and/or initial start to the thesis. For chemistry majors enrolled in HON 498 and therefore the Honors College, the above requirements for CHY 498 must be completed for HON 498 to be credited for CHY 498.

### *Explanation for deliverables*

Poster presentations each semester in CHY 498: It provides more practice presenting research findings and enables students to give each other feedback in regards to each other's research progress. Additionally, each semester that students are doing research, the poster presentation provides students a tangible target for their project so that they are more likely to complete research tasks and make progress to have a poster with significant completed research.

Final report at the end of CHY 498 credits: Provides a written record for the advisor of experiments and findings accomplished through the research project. Gives the student additional practice with writing up data, discussion, methods, and conclusions. For students moving on to CHY 499, the report can act as a starting point for the thesis writing in the following semester.