Washburn University, Department of Chemistry, CH 393 Undergraduate Internship

Purpose: The purpose of CH 393 is to develop the student chemist's abilities in four areas:

1) Development of experimental procedures and laboratory skills,
2) Assimilation, application and communication of chemical concepts,
3) Problem solving techniques, and
4) Critical thinking skills.

This capstone course requires summative reflection, serving as a culminating experience for Bachelor's degree students. Significant focus will be placed on 1) searching, accessing, reading, interpreting and understanding the primary and secondary chemical literature, 2) effective oral and written communication of chemical concepts, and 3) discussion of ethics.

Prerequisite: Departmental permission.
Textbook: All of the primary and secondary chemical literature.

Course requirements: Depending upon where the internship occurs, one or more of the following is/are required upon completion of CH 393:

1) Internal internship with Washburn or KBI - If an internship is either an internal Washburn internship or a KBI internship, a research project outline will be established and agreed upon by the instructor or mentor and student at the beginning of the semester. The plan will be in either written or verbal form. As the semester of active research progresses, the project outline may be changed with the demands of the research. A lab notebook AND a formal written report will be completed using the guide provided by *Journal of Forensic Science*, (https://www.aafs.org/resources/journal-of-forensic-sciences/information-for-authors/), or a poster/presentation with the same outline. A due date for the report will be set, allowing time for revisions if necessary.

2) Other internship – if an internship is with an outside agency or company where a specific project is not completed, a lab notebook or log of activities AND a summary paper will be required. The purpose of the summary paper is:
   - Give a comprehensive overview of the company or agency
   - Describe the duties for which the student is responsible
   - Provide interesting facts, observations or experiences that made this internship worthwhile
   - Citing references and articles will improve the grade

Attendance: For every one hour of internship credit enrolled, a minimum of three hours of laboratory time is required per week for 16 weeks, with a total of 144 hours in a semester (or other arrangement that results in equivalent number of hours in the summer, as agreed upon by instructor and student). There are no sick days or excused absences; however, scheduling time to work may be more flexible. At the beginning of the semester, the student chemist must set a tentative schedule. He/she should realize that due to the demands of the research, significant deviation from the tentative schedule might need to occur.

Grading: Final grades are based on attendance (30%), research participation and technique (35%), and the final report/presentation or summary submitted (35%). "Positive" results are not required to be successful in this course, whereas clear and honest results are necessary. Scientific integrity and the personal safety of all the researchers involved are of paramount importance.

Lab Notebook:

- It should be treated as a legal document. Use only permanent, black ink. All errors should be crossed out with a single line, date and initial.
- All procedures must indicate necessary safety precautions.
- Document EVERYTHING.
- Be very clear and organized. It takes a lot of work to fight the entropy!!!

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