CHEM 4894: Research I

A. COURSE DESCRIPTION

Credits: 2
Lecture Hours/Week: 0
Lab Hours/Week: 0
OJT Hours/Week: *.*
Prerequisites: None
Corequisites: None
MnTC Goals: None

This research experience in chemistry will develop essential skills needed to be a chemist. Student researchers will utilize literature, record, and analyze experimental results, and report findings in papers and presentations. Course may be repeated for 4 credits.

B. COURSE EFFECTIVE DATES: 08/27/2018 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Engage in semi-independent research under the guidance of a faculty member
2. Collaboration: Work in a team, contribute special skills, interact with classmates and faculty, and communicate
3. Discovery: Obtain new knowledge and insights and perform studies with unknown results
4. Iteration: Repeat and revise previous experiments
5. Relevant and important work: Contribute to current science knowledge, impact extends beyond class, and present and/or publish work
6. Use of scientific practices: Ask questions, propose hypotheses, design studies, select methods, analyze data, develop and critique arguments, and communicate findings

D. LEARNING OUTCOMES (General)

1. practice standard operating procedures, including lab safety, and safely use, handle, and store chemicals and hazardous waste.
2. evaluate primary literature articles and use them to guide project and place results in the context of the field.
3. record experimental methods and results in a laboratory notebooks.
4. collect, analyze, and interpret data.
5. develop chemical and biochemical laboratory skills.
6. summarize and explain experimental results in written and oral reports.
7. write a research progress report that models a scholarly paper and includes relevant background information, materials and methods, results and discussion, and supporting references.

E. Minnesota Transfer Curriculum Goal Area(s) and Competencies

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus
G. SPECIAL INFORMATION

None noted