Minnesota State University Moorhead

CHEM 375: Team-based Chemistry Research

A. COURSE DESCRIPTION

Credits: 4

Lecture Hours/Week: 3

Lab Hours/Week: 3

OJT Hours/Week: *.*

Prerequisites:
This course requires both of these prerequisites
CHEM 350 - Organic Chemistry I
CHEM 355 - Organic Chemistry I Lab

Corequisites: None

MnTC Goals: None

Students will participate in a team-based research experience and will apply advanced research techniques to a current research problem in the field of chemistry. In addition to research skills, as part of a research team, the students will learn research management, team coordination, and conflict resolution skills. This writing-intensive course will also extend the learning outcomes of the foundation writing course through the preparation of a research proposal, progress reports and a final report.

B. COURSE EFFECTIVE DATES: 02/02/2019 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Laboratory research centered on chemical systems to include various advanced synthetic techniques and instrumental methods of characterization. Instruction and multiple formal and informal experiences in written and oral communication of scientific concepts.

D. LEARNING OUTCOMES (General)

1. Collect, analyze, interpret, and prepare scientific data for presentation.
2. Identify and critically read primary research literature and literature reviews.
3. Identify and modify appropriate protocols to meet the needs of the specific research topic.
4. Manage a group of peer scientists through overseeing, designing, and coordinating their work.
5. Apply conflict resolution skills in a research team setting.
6. Propose scientifically relevant questions, develop hypotheses, and design experiments to test those hypotheses.

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

None noted