Anoka-Ramsey Community College

BIOL 2229: Independent Summer Research

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: *.*

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites:
This course requires the following prerequisite
BIOL 1106 - Principles of Biology I (Minimum grade: 2.0 GPA Equivalent)

Corequisites: None

MnTC Goals: None

Prerequisites: BIOL 1106 and one other BIOL course and Instructor Permission

The Independent Research Summer Program (IRSP) is a multidisciplinary initiative that includes opportunities for research studies in molecular and cellular biology, genetics, developmental biology, microbiology, ecology, plant sciences, among other fields. It consists of 1 week of research literature training and an orientation conducted and supervised by ARCC faculty and 10 weeks of laboratory or field research under the guidance of a University of Minnesota faculty mentor from one of the above bioscience disciplines. Students earn three semester credits upon successful completion of their research project assessed by an oral and/or written presentation of research project.

B. COURSE EFFECTIVE DATES: 01/16/2007 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. Scientific literature data searches
2. Scientific literature literacy pertinent to current research project
3. Bioethics of starting and maintaining a laboratory or field notebook
4. UMN campus (or UMN affiliated partner institution) laboratory or field research site orientation
5. Review and assessment of research background presentation prior to starting the laboratory or field project
6. Mentorship and advising of research projects biweekly and leading data peer review on University or affiliated campus/location
7. Review and assessment of small research thesis papers, posters and/oral presentations at the conclusion of the research projects

D. LEARNING OUTCOMES (General)

1. Search, read and synthesize the most relevant research data from scientific journal articles that pertain to their own laboratory research and selected laboratory research project
2. Propose a research project hypothesis, in collaboration with their research mentor, after appropriate relevant scientific literature background analysis and review
3. Demonstrate essential and cutting-edge laboratory or field research skills that allow investigation and production of scientific data designed to address the proposed hypothesis
4. Apply the scientific method in the context of the gathered research data to accept or reject the research project hypothesis
5. Engage in meaningful peer review discussions designed to foment and promote student learning through exchange of ideas and presentation of partial data, aiming to address potential setbacks and experimental design difficulties
6. Present successfully and periodically own research data, and/or research articles pertinent to research projects, and/or significant research discoveries to peers and faculty
7. Develop scientific writing skills and scientific peer-review publications preferred style and format
8. Articulate research project data and findings to wider science and/or non-science audiences through production of a poster or oral presentation

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

None

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

Total classroom hours per week: 1.5 hours per week over 10 weeks
Total Lab hours per week: 10-20 hours per week over 10 weeks
Other hours per week: 2