Anoka-Ramsey Community College

BIOL 1171: Seminar in the Biological Sciences

A. COURSE DESCRIPTION

Credits: 3

Lecture Hours/Week: 2

Lab Hours/Week: *.*

OJT Hours/Week: *.*

Prerequisites: None

Corequisites: None

MnTC Goals: Goal 02 - Critical Thinking, Goal 03 - Natural Science

(MnTC Goals 2 and 3)

(Cross-listed as NATS 1171)

This course is designed to focus on the annual Nobel Conference theme explored at Gustavus Adolphus College. Presenters are internationally recognized to be on the cutting edge of their respective biological science disciplines. Attendance of the conference is required. Five to six weeks are preparatory, and following the conference a discussion-seminar format is used to further explore the conference theme. In a lab-like experience, students will do extensive reading and perform a library research project where results are reported in class.

B. COURSE EFFECTIVE DATES: 01/10/2000 - Present

C. OUTLINE OF MAJOR CONTENT AREAS

1. The specific topic is new each year since the Nobel Conference is a fresh, current, and front-line science theme annually; however, the following content is included each course:

   Preparation for Nobel Conference attendance in terms of necessary vocabulary, background theory, and topic history through lecture, group discussion, and reading
2. Introduction to scientific methodology and appropriate technology
3. Introduction to analysis of scientific writing and programming
4. Introduction to locating and utilizing appropriate resources related to the year's specific topic
5. Introduction to writing an appropriately documented research paper
6. Presentation of research findings in a seminar format
7. Discussion of the Nobel Conference presentations
8. Discussion of articles read relating to the Nobel Conference theme
9. Evaluation of Nobel Conference presenter's experimental work
10. Evaluation of peer research

D. LEARNING OUTCOMES (General)

1. Utilize the necessary background vocabulary and methodology to understand the Nobel Conference presentation
2. Demonstrate an understanding of the foundation previous scientists laid making the Nobel Conference presenter's work possible and meaningful
3. Identify the hypotheses that each presenter is testing in their experimental and investigative research
4. Identify and describe the specific scientific theories represented in each year's Nobel Conference theme
5. Propose additional and alternative hypotheses that could lead to further experimental procedure
6. Demonstrate an understanding of the interdisciplinary character of scientific investigation based on each year's particular theme
7. Analyze and discuss each presenter's work in terms of relevance, clarity, assumptions, biases, applicability, and ethical and socio-political impact
8. Present a personal reaction and response paper to the Nobel Conference integration of scientific research, philosophical evaluation, and public discussion related to the year's specific theme
9. Read, discuss, interpret and evaluate several current research articles related to the Nobel Conference theme
10. Perform a library research project and analyze a topic related to the Nobel Conference theme
11. Organize research findings and analyses into an appropriately documented research paper
12. Communicate and discuss research findings and analyses in a seminar format
13. Evaluate peer seminar presentations in terms of relevance, clarity, assumptions, biases, applicability, and ethical and socio-political impact

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

Goal 02 - Critical Thinking

1. Gather factual information and apply it to a given problem in a manner that is relevant, clear, comprehensive, and conscious of possible bias in the information selected.
2. Imagine and seek out a variety of possible goals, assumptions, interpretations, or perspectives which can give alternative meanings or solutions to given situations or problems.
3. Analyze the logical connections among the facts, goals, and implicit assumptions relevant to a problem or claim; generate and evaluate implications that follow from them.
4. Recognize and articulate the value assumptions which underlie and affect decisions, interpretations, analyses, and evaluations made by ourselves and others.

Goal 03 - Natural Science

1. Demonstrate understanding of scientific theories.
2. Formulate and test hypotheses by performing laboratory, simulation, or field experiments in at least two of the natural science disciplines. One of these experimental components should develop, in greater depth, students' laboratory experience in the collection of data, its statistical and graphical analysis, and an appreciation of its sources of error and uncertainty.
3. Communicate their experimental findings, analyses, and interpretations both orally and in writing.
4. Evaluate societal issues from a natural science perspective, ask questions about the evidence presented, and make informed judgments about science-related topics and policies.

F. LEARNER OUTCOMES ASSESSMENT

As noted on course syllabus

G. SPECIAL INFORMATION

Attendance of 2 full days at Nobel Conference - 20 hours