



BAKER COLLEGE
STUDENT LEARNING OUTCOMES

SCI 4950 General Science Capstone
3 Semester Credit Hours

Student Learning Outcomes and Enabling Objectives

1. Evaluate scientific literature for credibility and reliability.
 - a. Recognize the structure of scientific literature.
 - b. Apply established metrics to evaluate scientific literature.
 - c. Identify sources of funding for scientific research.
 - d. Recognize how well literature has been accepted by the scientific community.
 - e. Recognize the impact of researcher positionality and bias on scientific literature.
2. Evaluate the relevance and applicability of literature to a scientific problem.
 - a. Identify published literature that is related to an identified scientific problem.
 - b. Distinguish findings from the background information presented in the study.
 - c. Link literature findings with the identified scientific problem.
 - d. Summarize relevant results from a study.
3. Synthesize findings from scientific literature.
 - a. Report research results using scientific language.
 - b. Justify conclusions based on available evidence.
 - c. Defend conclusions for various audiences.
4. Collaborate with experts from appropriate scientific disciplines.
 - a. Recognize the impact of collaborative work in strengthening research.
 - b. Identify mentors or peers to address gaps in knowledge and challenge potential bias.
5. Design a study that utilizes qualitative, quantitative, or mixed methods research to investigate a gap in scientific knowledge.
 - a. Identify the strengths and weaknesses of different research methods.
 - b. Identify an appropriate method to address a research question.
 - c. Write a hypothesis driven research question.
 - d. Document the resources and costs related to a research proposal.
 - e. Discuss the ethical implications of the study.
 - f. Predict the likely outcome of the study.
 - g. Defend the design of the study.

6. Evaluate the role of science in social change by integrating understanding from more than one science discipline.
 - a. Apply ethics and professionalism in science.
 - b. Discuss the ways various scientific disciplines and society influence one another.
 - c. Review information from multiple societal perspectives.
 - d. Predict implications of research on society.

Big Ideas and Essential Questions

Big Ideas

- Credible and reliable Scientific Literature
- Relevance and applicability of Scientific Literature
- Logical scientific conclusions
- Collaboration in research
- Investigation of Natural phenomena
- Role of science in social change

Essential Questions

1. How can scientific literature be evaluated for credibility and reliability?
2. How will I determine the relevance and applicability of scientific literature to my study?
3. How do I present and defend scientific conclusions?
4. How can I diversify my knowledge by working with others?
5. How can I design an original study to address a gap in scientific knowledge?
6. What is the role of science in social change?

These SLOs are not approved for experiential credit.

Effective: Fall 2023