



South Central College

## BIOL 250 Biology Capstone

### Course Outcome Summary

#### Course Information

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| <b>Description</b>   | Biology Capstone is a course that is required before completion of an AS degree in Biology. It is a project based course in which students will demonstrate a culmination of the skills developed while at South Central College. The student enrolled in this course will complete a scientific research project and present the findings by writing a research paper and giving a poster presentation. In addition, students may be required to participate in all assessment activities as directed by the instructor and the Biology program. This course should be taken during the last semester before completion of an AS degree in Biology. (Instructor permission) |
| <b>Total Credits</b> | 2  |
| <b>Total Hours</b>   | 32   |

#### Types of Instruction

| Instruction Type | Credits/Hours |
|------------------|---------------|
| Lecture          | 2/32          |

#### Pre/Corequisites

Instructor permission

#### Institutional Core Competencies

Communication - Students will be able to demonstrate appropriate and effective interactions with others to achieve their personal, academic, and professional objectives.

Critical and Creative Thinking - Students will be able to demonstrate purposeful thinking with the goal of using a creative process for developing and building upon ideas and/or the goal of using a critical process for the analyzing and evaluating of ideas.

#### Course Competencies

##### 1. Describe the scientific method.

###### Learning Objectives

Identify the characteristics of a good hypothesis.

Explain the significance of controls and duplicates in a research experiment.

Identify proper data collection.

Identify ways to effectively display results.

Describe how to interpret and analyze results and integrate the findings with other credible sources.  
Explain how to effectively draw a conclusion to the research question based on data collected.

**2. Incorporate and apply the scientific method.**

**Learning Objectives**

Use peer reviewed research journal articles to develop a research question.  
Design experimental methods to answer the research question.  
Perform an experiment to answer the research question.  
Collect, analyze and discuss the data collected.  
Draw conclusions based on the data collected.

**3. Choose credible resources for research project.**

**Learning Objectives**

Describe the characteristics of a credible source.  
Identify where credible scientific sources can be found.  
Use correct annotation when citing sources.  
Use sources effectively when developing a research question and when discussing research results.

**4. Communicate scientific research findings in written format.**

**Learning Objectives**

Select a topic for research presentation in consultation with the instructor.  
Synthesize information collected and prepare a research paper draft.  
Revise paper in response to teacher feedback and peer review.  
Submit a final draft in academic style.

**5. Present scientific research findings through poster presentation.**

**Learning Objectives**

Identify the components of a well designed poster.  
Utilize computer software to design graphs and tables to summarize research findings.  
Develop a poster to assist in oral presentation of research findings.  
Perform an oral poster presentation.

**6. Engage in academic discourse by means of peer review, classroom discussions, and dialogue during project presentations.**

**Learning Objectives**

Participate in peer review of research projects.  
Develop abilities to critique research projects.  
Engage in academic discussions.

**SCC Accessibility Statement**

South Central College strives to make all learning experiences as accessible as possible. If you have a disability and need accommodations for access to this class, contact the Academic Support Center to request and discuss accommodations. North Mankato: Room B-132, (507) 389-7222; Faribault: Room A-116, (507) 332-7222.

Additional information and forms can be found at: [www.southcentral.edu/disability](http://www.southcentral.edu/disability)

This material can be made available in alternative formats by contacting the Academic Support Center at 507-389-7222.