



TRINITY  
MEDICAL SCIENCES  
UNIVERSITY

SCHOOL OF  
BIOMEDICAL SCIENCES

## CAPSTONE RESEARCH BIOS 231

### Course Description

Students will work with a faculty member to develop a research paper and present the work in a seminar.

**Credit: 5-10 credits**

**Repeatable: Yes (maximum 20 credits)**

### Course Structure

This is course for students to complete a mentored research project. The capstone culminates the undergraduate experience and contains a final written document. Students meet with a mentor to plan the topic and approach taken to a question of interest in the health care field. Sections of the research report can be submitted for review and comment to the mentor to assist with developing a strong report.

### Competencies

This course emphasizes competencies to enhance skills essential for a future health care professional.

- Knowledge
  - Demonstrate content knowledge and skills in foundational courses required by biomedical professionals
  - **Demonstrate information literacy**
  - **Demonstrate quantitative reasoning**
  - **Demonstrate longitudinal learning through coursework**
- Critical Thinking
  - Develop the skills of self-reflection and peer assessment to improve personal performance
  - **Demonstrate the ability to analyze literature and written material**
  - **Demonstrate the ability to distinguish between well-reasoned and poorly reasoned arguments**
- Communication Skills
  - **Demonstrate effective presentation skills to faculty and peers.**
  - Demonstrate effective listening skills
  - **Demonstrate effective written communication**

**Objectives:**

Upon completion of the BIOS 230 course, the student should be able:

- To learn, practice, and critique effective scientific writing.
- To develop writing skills that will be essential for their professional careers.
- To provide critical feedback, and seek new ways to make scientific information understandable to health care professionals and peers.

**Schedule:**

This is a flexible course. Students should organized their time and meetings with their mentor to best facilitate completion of the project.

**Assignments:**

- Identify an issue or problem in the healthcare industry that has support from two different perspectives and develop a problem statement to support one perspective. Compare and contrast the arguments in the literature or through other media to develop the problem. The healthcare industry may be interpreted broadly to include business, community health, pharmaceutical questions, and questions among various stakeholders in the industry, among others.
- After discussing possible topics, develop a 2-3 page proposal that succinctly outlines the proposed research, containing:
  - Introduction (why the topic is important and the position being taken)
  - Materials and Methods (how is the question to be approached)
  - Short list of references (minimum 3-5 publications), properly formatted.

**Capstone Format:**

- The capstone research will be written in the format of a research paper with sections:
- Introduction and Background, Problem or Hypothesis, Methods, Results, Discussion, and Summary.
- The length of the format should be about 20-30 double-spaced text pages, including tables and figures. Additional material may be added in an appendix if necessary.
- Submit a complete draft to your mentor for editing. Edits will be completed typically within two weeks.
- Submit a revised copy

**Evaluation:**

Students will receive formative feedback on capstone research project. The following rubric is used by Faculty/Mentor to grade the research.

	Pts
Problem or Hypothesis Statement	15
Supporting Evidences: <ul style="list-style-type: none"> <li>• Each paragraph contains one idea or concept that is supported by sentences in the paragraph</li> <li>• Evidence is used to support the argument of the problem</li> <li>• Citations are provided to support evidence</li> </ul>	50
Paper Format and Grammar: <ul style="list-style-type: none"> <li>• Paper has an introduction, methods and materials, results, discussion, and conclusion</li> <li>• Grammar is appropriate</li> </ul>	35
Total points	100

**Grade:**

Percent of Points	Letter Grade
95-100%	A(h)
90-94%	A
85-89%	B+
80-84%	B
75-79%	C+
70-74%	C
<70%	F

**Policies:**

At the completion of the capstone paper, the student will prepare a seminar presentation for an audience. This audience may be a class but should include invited faculty.

Students should maintain a neat and clean appearance, and dress in attire that is generally accepted as professional when presenting class presentations.

Students are expected to demonstrate honesty and integrity in all aspects of their education and during this course work. They should not cheat, plagiarize, or assist others in the commission of these acts.

**Faculty and office hours:**

The student may choose any TMSU faculty member as a mentor and get the approval from the Dean.