

Science Laboratory TCSU LBST 770

Note: this course must be approved currently for CSU GE-Breadth Area B3.

A. Description

This laboratory course focuses on the basic principles of experimental design in a scientific discipline, including formulation of questions and hypotheses, observation, and evaluation and presentation of data and conclusions. Students will conduct hands-on scientific investigations in a supervised laboratory or field setting.

B. Recommended Preparation

None Specified

C. Prerequisites

Prior or concurrent enrollment in Physical Science, Earth Science or Life Science

D. Minimum Unit Requirement

E. Course Topics

Must include but are not limited to:

- Design and conduct scientific investigations to test hypotheses
- Apply principles of experimental design, including formulation of questions and hypotheses, and evaluation of the accuracy and reproducibility of data
- Distinguish between dependent and independent variables and controlled parameters, and between linear and nonlinear relationships on a graph of data
- Use scientific vocabulary appropriately
- Select and use a variety of scientific tools
- Apply the metric system to measure length, mass, and volume
- Interpret results of experiments and interpret events by sequence and time from evidence of natural phenomena
- Communicate the steps in an investigation, record data, and interpret and analyze numerical and non-numerical results using charts, maps, tables, models, graphs, and labeled diagrams
- Use print and electronic resources, including the World Wide Web, in preparing for an investigative activity
- Communicate the steps and results of a scientific investigation in both verbal and written formats

F. References

Elementary Subject Matter Content Specifications Part II for Science
CSU Executive Order No. 405