Course Number and Title: SCI 108 Research on the Delaware Bay

Campus Location:
Stanton

Effective Date:
2018-51

Prerequisite:
SCI 107, Instructor signature required, SSC 100 or concurrent

Co-Requisites:
none

Course Credits and Hours:
1.00 credits
0.00 lecture hours/week
2.00 lab hours/week

Course Description:
This course applies skills and techniques learned in Explorations on the Delaware Bay (SCI 107) to plan and conduct research projects on the Delaware Bay. This is the second course of a two- semester sequence.

Required Text(s):
Obtain current textbook information by viewing the campus bookstore - https://www.dtcc.edu/bookstores online or visit a campus bookstore. Check your course schedule for the course number and section.

Additional Materials:
None

Schedule Type:
Classroom Course

Disclaimer:
None

Core Course Performance Objectives (CCPOs):

1. Apply the scientific method to design an environmental research project. (CCC 1, 2, 6)
2. Use information literacy skills and reading strategies to access and use information sources. (CCC 4, 5, 6)
3. Perform and analyze experiments related to environmental research. (CCC 2, 3, 6)
4. Document and summarize experimental results. (CCC 1)
5. Use mathematical principles to analyze research data. (CCC 2, 6)
6. Use written and oral communication strategies to present results of a research project. (CCC 1, 4, 6)

See Core Curriculum Competencies and Program Graduate Competencies at the end of the syllabus. CCPOs are linked to every competency they develop.

Measurable Performance Objectives (MPOs):
Upon completion of this course, the student will:

1. Apply the scientific method to design an environmental research project.
    1. Identify the research question and hypothesis.
    2. Discuss elements of experimental design, including variables and controls.
    3. Describe data collection strategies.
    4. Use discipline-specific terminology to draft experimental procedures.
2. Use information literacy skills and reading strategies to access and use information sources.
    1. Identify keywords to formulate a search strategy to find information.
    2. Apply an effective search strategy to locate information.
    3. Employ reading strategies to gather information on project background and research methodology.
    4. Recognize journal-specific formatting for references.
3. Perform experiments related to environmental research.
    1. Identify equipment and supplies required for experiments.
    2. Conduct discipline-specific experiments.
    3. Appraise potential hazards, and practice safety techniques.
    4. Operate equipment required for experiments.
4. Document and summarize experimental results.
    1. Use discipline-specific styles of documentation.
    2. Record experimental procedures.
    3. Record data with appropriate units.
    4. Use discipline-specific terminology to summarize results.
5. Use mathematical principles to analyze research data.
    1. Describe discipline-specific methods for presenting data.
    2. Represent data in tables and graphically.
    3. Analyze data using scientific calculators and Excel.
    4. Discuss statistical methods used to analyze experimental results.
6. Use written and oral communication strategies to present results of a research project.
    1. Discuss components of an effective short oral presentation.
    2. Use drafting and revising strategies to prepare a short oral presentation.
    3. Discuss components and guidelines for a scientific poster.
    4. Use planning, drafting, and revising strategies to prepare scientific poster using presentation software.
    5. Present a scientific poster on the research project.

Evaluation Criteria/Policies:
Students must demonstrate proficiency on all CCPOs at a minimal 75 percent level to successfully complete the course. The grade will be determined using the Delaware Tech grading system:

92	–	100	=	A
83	–	91	=	B
75	–	82	=	C
0	–	74	=	F

Students should refer to the Student Handbook - https://www.dtcc.edu/handbook for information on the Academic Standing Policy, the Academic Integrity Policy, Student Rights and Responsibilities, and other policies relevant to their academic progress.

Core Curriculum Competencies (CCCs are the competencies every graduate will develop):

1. Apply clear and effective communication skills.
2. Use critical thinking to solve problems.
3. Collaborate to achieve a common goal.
4. Demonstrate professional and ethical conduct.
5. Use information literacy for effective vocational and/or academic research.
6. Apply quantitative reasoning and/or scientific inquiry to solve practical problems.

Program Graduate Competencies (PGCs are the competencies every graduate will develop specific to his or her major):
None

Disabilities Support Statement:
The College is committed to providing reasonable accommodations for students with disabilities. Students are encouraged to schedule an appointment with the campus Disabilities Support Counselor to request an accommodation needed due to a disability. A listing of campus Disabilities Support Counselors and contact information can be found at the disabilities services - https://www.dtcc.edu/disabilitysupport web page or visit the campus Advising Center.