Environmental Science Lab

ENVS - 1405 001

Course Description

Scientific principles and data collection needs for understanding environmental challenges on local, regional, and global scales will be emphasized in the Laboratory. Field trips may be required.

Required prerequisite or corequisite(s): ENVS 1400
ENVS 1400 and ENVS 1405 combined are the necessary coursework for transfer as an introductory Environmental Science class at most other USHE institutions.

Semester(s): Fall & Spring

Course Student Learning Outcomes

- Demonstrate safety practices when using biological and chemical materials in the laboratory and field.
- Utilize common environmental equipment to collect and analyze biotic and abiotic samples.
- Utilize common metric system quantities and conversions.
- Apply math concepts using Excel to analyze and graph collected data.
- Summarize processes used in local facilities to mitigate human impacts.
- Design and conduct a hypothesis based scientific study of an environmental issue.
- Maintain accurate laboratory notebooks describing data collection methods, housing raw data, statistical analyses, reflective conclusions, and summaries of relevant facility processes.

College Wide Student Learning Outcomes

- 1) Acquire substantive knowledge in the intended major and throughout General Education
- SLCC has identified nine essential capacities all students should strengthen, regardless of academic major or career plans, that will serve students in all aspects of life.
- 2) Communicate effectively
- 3) Develop quantitative literacies necessary for the chosen field of study
- 4) Think critically
- 5) Express themselves creatively
- 6) Develop civic literacy and the capacity to be community-engaged learners who act in mutually beneficial ways with community partners
- 7) Develop the knowledge and skills to work with others in a professional and constructive manner
- 8) Develop information literacy
- 9) Develop computer literacy

Course Prerequisites

Pre-requisite: ENGLISH0900 with a grade of C

Co-requisite: ENVS 1400

General Course Policies

Syllabus:

This syllabus represents an "agreement" between you the student and the instructor. It is designed to ensure course integrity and fairness as well as provide students with a clear understanding of course expectations. The instructor and students are expected to use the syllabus and schedule as a guide for the semester. Any deviation from the syllabus or schedule will be discussed and agreed upon by the instructor and students.

Attendance:

Attendance to the first lab is **MANDATORY!** If you do NOT attend the first lab, YOU RISK BEING DROPPED from the course by the end of the Wednesday, September 3rd Attendance is required, and no absences will be excused without prior notification. Attendance is calculated into your grade.

Make-up Labs (Environmental Science):

There are **NO make-up labs** as there is only one section of ENVS1405 section and most of the labs are field trips to a particular location. However, we will eliminate **two labs** if you missed a lab or scored a lower points for a particular lab.

Incomplete Grade and Withdraw from Class:

A grade of "I" (Incomplete) is the instructor's option and is not given except only in the most extenuating of circumstances for which there is verifiable written documentation. In order to receive an Incomplete, nearly all course work must have been completed (e.g., ~75%) with a passing grade.

Due Dates and Late Work Policy:

Late Work: **It is your responsibility to plan ahead and allocate enough time to complete the assignments. Late work will be penalized at 10% per day, up to two days after original deadline. No late assignments will be accepted if they are more than two days late.** Contact your instructor if you have extenuating circumstances.

Drop, Withdraw or Incomplete Grade: Last day to drop from class with refund is September 16th, withdraw without refund is October 28th. A grade of "I" (Incomplete) is at the instructor's discretion and can be given if a student is facing extenuating circumstances preventing them from finishing the semester. In order to receive an incomplete, most of the course work must be completed (e.g. ~70%) with a passing grade. If you have any questions about grades or grading policies please visit: https://www.slcc.edu/student/enrollment/grade-policies.aspx.

Electronic Devices:

Cell Phones are to be turned off during class. Computers can be used for notetaking and course-related purposes ONLY but should not be used during class for working on other tasks (e.g., answer emails, Facebook, other classes etc.). You will be asked to leave if your electronic device disrupts the class in anyway. Cell phones MUST be turned completely OFF during exams.

Classroom recordings:

Students may NOT record or publish information from the class without written authorization from the instructor. If used without authorization you have violated Privacy/Intellectual Property Rights.

SLCC Academic Policies:

SLCC academic policies may be found in the SLCC 2024-2025 Catalog, and the Code of Student Rights and Responsibilities.

Engagement Plan

The BEST way to reach us is via the Canvas email system. We will respond to all emails within **2 business days** (Monday to Friday from 9:00 am to 5:00pm). Emails sent overnight are not expected to be answered immediately. Plan to email ahead of deadlines if you have questions about a topic or assignments . Similarly, please make sure that you set your email preference in the Canvas system. Unprofessional emails (e.g. text written as messenger/chat style, wrong instructor name) will not be answered or addressed. We will be posting Canvas announcements regarding weekly expectations, exam or practical

reminder dates and any changes to this syllabus or the course. Please be sure to check announcements frequently.

Required Text or Materials

Title: We will provide all the background information and worksheets via Canvas

For more information on textbook accessibility, contact Accessibility & Disability Services at ads@slcc.edu.

Brief Description of Assignments/Exams

Laboratory performance will be assessed on the basis of lab participation, lab quizzes, and a project that will be summarized in research presentation. Students are expected to attend and participate in laboratory each week. Students should read the lab background information prior to lab so as to use their limited time in lab to full advantage. Laboratory methodologies will vary from week to week, depending upon the nature of the laboratory exercise, but will include both individual & collaborative efforts. The laboratory includes both quantitative and qualitative exercises. The lab grade is separate from the lecture.

Assessment	Points (Weighted grade)
Lab worksheets: 13* lab reports @10 pts each	110 pts – 50%
Pre quizzes: 12* quizze3s @3 pts each	30 pts – 15%
Research project (question, hypothesis, experimental design, data analysis, poster and presentation)	100 pts - 35%
Total points	**240 pts / 100%**

*** Drop two lowest or missing**

Lab work will be evaluated on the basis of completion of:

1) **Weekly lab exercises - 50% of Grade** (10 points each lab - 13 labs reports and drop two lowest or missing): Credit for lab work requires weekly completion of worksheets assigned. Please be sure to print the worksheets every week. Lab work will vary from week to week according to the topic but may include quantitative and qualitative analysis of experiments and/or observations. Be prepared to make drawings and take notes during lab. Participation in lab is taking in consideration as part of your lab worksheet points.

2) **Pre-quizzes - 15% of Grade** (3 pts each quiz - 12 pre-quizzes and drop two lowest or missing): Pre-quizzes will be administered on Canvas, will cover the lab content for the

week and must be completed prior to the lab each week.

3) **Research Project (100 pts) - 35% of Grade**: You will be completing an independent research project during the semester. As a science lab, you will be asked to think critically about the purpose, environmental rationale & how these research projects relates to the World. With our mentoring, you will be interpreting the data you collected & explain your results at the end of the semester.

Requests for special treatment or extra points or a grade you did not earn in order to graduate in a certain timeframe or keep a scholarship are highly inappropriate and WILL be rejected.

Grading Scale

92-100 = A 90-91= A- 88-89 = B+ 82-87 = B 80-81 = B- 78-79 = C+
72-77 = C 70-71 = C- 68-69 = D+ 63-67 = D 60-62 = D- 0-59 = F

Academic Integrity

Academic Dishonesty is absolutely NOT tolerated & includes all forms of cheating and plagiarism as outlined in the Code of Student Rights and Responsibilities and outlined here. There is NO tolerance for dishonesty. Academic dishonesty includes but is not limited to claiming another person's work or words as one's own, accessing answers to lab reports, quizzes, and exams from the Internet, completing quizzes or exams with other individuals. Students must write all answers in their own words. Exams are to be completed individually by the student. Penalty for first offense will result in grade of "0" on the assignment or exam & second offense may result in an "E" for the course.

Generative artificial intelligence (AI) software is a rapidly emerging tool that students may be interested in using. If doing so, SLCC students are expected to adhere to the same standards as the Code of Student Rights and Responsibilities statement on plagiarism. Presenting generative AI software content as your own is a violation of academic integrity. If you use generative AI in your work, you must indicate that you have done so.

Lab Safety

It is the responsibility of each student to help maintain the laboratory as a safe and high-quality learning environment. Please do your part by:

1. Do not bring food or drinks into the laboratory.
2. Keep bench tops clear of coats, backpacks, and materials that are not currently being used in lab.
3. Make sure that your lab workspace is clean at the beginning (before you start working) and end of the lab period.
4. Wear practical clothing or a lab coat, if applicable.
5. Care for laboratory equipment properly.
6. Behave responsible during field trips
7. Use common sense!

Keys for Success (how to succeed in the course)

Attend and participate from labs.

How to Navigate to Canvas

Institutional Policies

As members of our academic community, we would like to invite you to review the Institutional Syllabus which covers important policies and procedures. This document contains important links for students on the code of student rights and responsibilities, academic integrity, and grading policies, Title IX and other important acknowledgements. By familiarizing yourself with this information, you can help us create a safe and respectful environment for everyone.

For more information, navigate to the Institutional Policies tab on the Institutional Syllabus page.

Learning Support and Tutoring Services

We are pleased to offer a range of tutoring and learning support services to help you achieve your academic goals. Whether you need assistance with a specific subject or want to improve your study skills, you have many options for tutoring or other support.

To learn more about the services we offer and how to access them, visit the Institutional Syllabus page under the Tutoring and Learning Support tab. We encourage you to take advantage of these resources to help you succeed in your studies. If you have any questions or would like to schedule a tutoring session, please don't hesitate to reach out to us. We are here to support you in any way we can.

Student Academic Calendar

As students you should be aware of all important dates in the semester, such as the day that courses begin and end, as well as the drop date and the last day to withdraw. To learn more about those dates, navigate to the Student Academic Calendar below:

SLCC Student Academic Calendar

Advising and Counseling Support Services

At our institution, we are committed to supporting your academic and personal growth. That's why we offer a range of advising and counseling services to help you navigate the challenges of college life. To learn more about the resources available to you and how to access them, visit the Institutional Syllabus page under the Advising and Counseling Support Services tab. Our advising team and the support centers across campus are here to support you in achieving your goals and overcoming any obstacles you may face.

Assignment Schedule

Due Date	Assignment Name	Assignment Type	Points

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	Data Analysis - Preliminary [PLO-EES-3]	Assignment	10
	Lab Discussion Board	Discussion	0
	Poster Draft	Assignment	3
	Poster Presentation	Assignment	35
	Presentation Submission [PLO-EES-5]	Assignment	40
	Question and Hypothesis	Assignment	2
	Research - Experimental Design	Quiz	10
	Roll Call Attendance	Assignment	100
9/3/25	Lab 1: Submit worksheet and completed excel data analysis (In lab)	Assignment	10
9/8/25	Class Field Trip Waiver & Participation Agreement	Quiz	10
9/10/25	Quiz - University of Utah lab tours	Quiz	3
9/10/25	Lab 2: University of Utah lab tours worksheet	Assignment	10

Due Date	Assignment Name	Assignment Type	Points
9/17/25	Quiz - SLCC gardens and Pollinator conservation	Quiz	3
9/17/25	Lab 3: SLCC gardens and Pollinator conservation worksheet	Assignment	10
9/24/25	Quiz - Ecology & Conservation - Sageland Collaborative	Quiz	3
9/24/25	Lab 4: Sageland Collaborative worksheet	Assignment	10
10/1/25	Quiz - Albion basin	Quiz	3
10/1/25	Lab 5: Albion basin worksheet	Assignment	10
10/8/25	Quiz - Conservation garden	Quiz	3
10/8/25	Lab 6: Conservation garden field trip worksheet	Assignment	10
10/15/25	Quiz - Great Salt Lake	Quiz	3
10/15/25	Lab 7: Great Salt Lake worksheet [PLO-EES-4]	Assignment	10
10/22/25	Quiz - Jordan River	Quiz	3

Due Date	Assignment Name	Assignment Type	Points
10/22/25	Lab 8: Jordan River worksheet	Assignment	10
10/29/25	Quiz - Microscopy	Quiz	3
10/29/25	Lab 9: Microscopy Worksheet	Assignment	10
11/5/25	Lab 10: ICP, Sediment, cultures worksheet [PLO-EES-2]	Assignment	10
11/19/25	Quiz - SLCMAD	Quiz	3
11/19/25	Lab 12: SLCMAD Worksheet [PLO-EES-1]	Assignment	10
12/3/25	Quiz - Lab 13 Water Reclamation Facility Tour	Quiz	3
12/3/25	Lab 13: CVWRF Reflection	Assignment	10
12/12/25	Course Evaluation (Lab only)	Assignment	0