

General College Physics I Lab (PHY 103L)

Fall 2024

Scott N. Walck

Course Information

Contact Information

- Instructor: Scott N. Walck
- Preferred names: Scott, Dr. Walck, Prof. Walck (I prefer not to be called by my unadorned last name.)
- Pronouns: He, his, him
- Office: Neidig-Garber 223
- Office Phone: 717-867-6153 (messages reach me by email)
- Email: walck@lvc.edu
- Web page: <http://quantum.lvc.edu/walck/>

Email is the best way to contact me. Many questions and issues can be solved over email.

Office Hours

I will be in my office

Monday	11:00–12:00
Tuesday	12:00– 1:00
Tuesday	1:00– 2:00
Wednesday	11:00–12:00
Friday	11:00–12:00

during the course of the Fall 2024 semester.

If you need to meet at a different time, please send me an email to set that up. You can drop by my office any time to see if I am there. If I'm there, we can chat.

Course Description

Corresponding laboratory for PHY 103. Experiments cover kinematics, forces, momentum, torque, oscillations, waves, sound, and thermodynamics, as well as the use of computers for collecting and analyzing data. PHY 103L must be taken concurrently with PHY 103, the lecture portion; together, they constitute a single 4 credit course. PHY 103L contains 3 contact hours of instruction per week.

Course Objectives

Upon completion of this course, students will be able to

1. make measurements and collect data using various pieces of equipment and apparatuses
2. organize data into a format that is easily accessible for further analysis
3. quantitatively analyze data through calculations and graphs
4. understand sources of experimental error, assumptions used, and other limits of the analysis

5. present experimental results in a coherent, well-organized manner
6. use their knowledge of fundamental areas of physics, like kinematics, forces, momentum, torque, oscillations, waves, sound, and thermodynamics, to understand and interpret experimental results

Attendance and Other Lab Policies

Health request: if you have cold, flu, or COVID symptoms, please wear a mask.

Attendance will be taken at the beginning of each lab session. If a student does not attend/complete a lab, a grade of zero will be given for that lab assignment.

Course Assignments and Grading Policy

Please submit your lab assignment to me before leaving the lab. Each student must complete and hand in their own assignment.

At the end of the semester, a single average lab grade will be sent to your lecture instructor to be included in the calculation of your final grade based on the weight determined by that instructor.

Your grade on a lab assignment is not an indication of how much I like you. It is not an indication of your worth as a person. It is not even a measure of your ability to do experimental physics. It is my judgment of the care, attention, and thought put into the lab assignment, as reflected in your written responses to the questions and activities in the assignment. Such care, attention, and thought results in learning.

Academic Success Strategies

1. Read all lab instructions carefully and ask questions if something doesn't make sense.
2. Make sure each question in the lab handout is answered and pay attention to details. Be precise with your explanations. Write your answers as if I do not know anything about this experiment or the physics topics covered.
3. Include appropriate units with all of your quantities. There are some questions in physics whose answers are pure numbers without any units, but these are rare. Train your brain so that whenever you write a number, it asks, what units?
4. When an assignment is returned, read my comments so you are aware of your mistakes and can learn for next time.

Academic Honesty

For the lab, a violation of the Academic Honesty Policy includes, but is not limited to, copying answers from another group/individual without performing the experiment and analyzing the results yourself.

You may work with a lab partner and take data together. In that case, the data for you and your partner will be identical. You may copy this data. You may discuss the questions with your partner and decide how to answer them. Even so, you may not copy the answer your partner has written. Your answers must be in your words.

Make-up Work and Extra Credit Policy

Labs can only be made up in the event of serious circumstances such as illness. There is no extra credit for the lab.

Lab Schedule

Week of	Lab Activity
08/26	Intro to Lab/Uncertainty/Graphing
09/02	Free Fall: Acceleration due to Gravity
09/09	Projectile Motion
09/16	Force Table/Vectors
09/23	Friction
09/30	Centripetal Force: Uniform Circular Motion
10/07	No Lab (Fall break)
10/14	Ballistic Pendulum
10/21	Torque
10/28	Hooke's Law: Simple Harmonic Motion
11/04	Transverse Waves
11/11	Speed of Sound
11/18	Thermal Expansion
11/25	No Lab (Thanksgiving break)
12/02	Specific Heat

General Education

PHY 103 satisfies the Natural Science (NS) Analysis area of the Disciplinary Competencies requirement of the General Education program. The learning outcomes for NS courses are:

- Inquiry: Pose questions and identify appropriate empirical methodologies to gather evidence to evaluate theories or hypotheses.
- Analysis: Synthesize and organize evidence to identify important patterns.
- Critical Thinking: Evaluate the strengths or limitations of evidence before accepting or formulating a conclusion.
- Communication: Clearly express the results of the interpretation, representation, application, and analysis of scientific information in an effective format.

PHY 103 also satisfies the Quantitative Reasoning (QR) area of the Literacy requirement of this General Education program as well as the QR requirement of Constellation LVC. The learning outcomes for QR courses are:

- Interpretation: Demonstrate ability to utilize mathematical forms (e.g., equations, graphs, diagrams, tables, words), including the ability to learn about and interpret unfamiliar quantitative structures
- Representation: Convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)
- Application and Analysis: Make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the assumptions used and other limits of the analysis.

- **Communication:** Clearly express the results of the interpretation, representation, application, and analysis of quantitative information in an effective format
- The course will have a significant and continuing focus on working with quantitative arguments.

Course Objectives Alignment to Program Goals and Assessment of Course Objectives

General Education NS Learning Goal	Course Objective	Assessment
Inquiry: Pose questions and identify appropriate empirical methodologies to gather evidence to evaluate theories or hypotheses.	Upon completion of this course, students will be able to: make measurements and collect data using various pieces of equipment and apparatuses	Lab handouts
	use their knowledge of fundamental areas of physics, like kinematics, forces, momentum, torque, oscillations, waves, sound, and thermodynamics, to understand and interpret experimental results	Lab handouts
Analysis: Synthesize and organize evidence to identify important patterns.	organize data into a format that is easily accessible for further analysis	Lab handouts
	quantitatively analyze data through calculations and graphs	Lab handouts
Critical Thinking: Evaluate the strengths or limitations of evidence before accepting or formulating a conclusion.	understand sources of experimental error, assumptions used, and other limits of the analysis	Lab handouts
Communication: Clearly express the results of the interpretation, representation, application, and analysis of scientific information in an effective format.	present experimental results in a coherent, well-organized manner	Lab handouts
General Education and Constellation QR Learning Goal	Course Objective	Assessment
Interpretation: Demonstrate ability to utilize mathematical forms (e.g., equations, graphs, diagrams, tables, words), including the ability to learn about and interpret unfamiliar quantitative structures	Upon completion of this course, students will be able to: use their knowledge of fundamental areas of physics, like kinematics, forces, momentum, torque, oscillations, waves, sound, and thermodynamics, to understand and interpret experimental results	Lab handouts

Representation: Convert relevant information into various mathematical forms (e.g., equations, graphs, diagrams, tables, words)	make measurements and collect data using various pieces of equipment and apparatuses	Lab handouts
Application and Analysis: Make judgments and draw appropriate conclusions based on the quantitative analysis of data, while recognizing the assumptions used and other limits of the analysis.	organize data into a format that is easily accessible for further analysis	Lab handouts
	quantitatively analyze data through calculations and graphs	Lab handouts
Communication: Clearly express the results of the interpretation, representation, application, and analysis of quantitative information in an effective format	understand sources of experimental error, assumptions used, and other limits of the analysis	Lab handouts
	present experimental results in a coherent, well-organized manner	Lab handouts

College-Wide Course Policies

RESPONDUS or EXAMSOFTE POLICY

In this course, you may be asked to use a custom browser that locks down the testing environment within the Canvas learning management system. While using these programs, your instructor may require you to activate the video camera and microphone of your computer while completing the exam. Students who are not willing to provide the requested video and audio feeds may ask to take the exam using an alternative proctoring method. Students may arrange for the exam to be proctored at a professional testing center such as Sylvan Learning Centers. The student is responsible for finding the testing site and must pay any fees associated with testing. The Alternate Proctoring Request form can be obtained by contacting Kristen Shutter at shutter@lvc.edu or by phone at 717-867-6028.

EXPECTATIONS FOR STUDENTS IN FACE-TO-FACE CLASS SESSIONS

Students participating in face-to-face class sessions must adhere to the guidelines put forth in LVC's Community Covenant (<http://wordpress.lvc.edu/wordpress/lvcforward/2020/07/09/community-covenant/>). To facilitate contact tracing, students will be given assigned seats for the semester.

POLICY ON RECORDING CLASS SESSIONS

Audio and/or video recordings of the class sessions may be made by the College and/or by students who have been authorized by the LVC Center for Accessibility Resources to record classes as an accommodation for a disability. By participating in the class, all students consent to being recorded for these purposes. Any other recordings of class sessions are not permitted. Students participating in on-line courses are asked to respect the privacy of those participating in the class by ensuring that class sessions cannot be overheard by those who are not enrolled in the course.

Academic Honesty Policy

Any student who submits work that is in violation of the academic honesty policy will be subject to the penalties described in the College Catalog and outlined in LVC's Academic Honesty Policy. Lebanon Valley College expects its students to uphold the principles of academic honesty. Violations of these principles will not be tolerated. Students shall neither hinder nor unfairly assist the efforts of other students to complete their work. All individual work that a student produces and submits as a course assignment must be the student's own.

Cheating and plagiarism are violations of the academic honesty policy. Cheating is an act that deceives or defrauds. It includes, but is not limited to, looking at another's exam or quiz, using unauthorized materials during an exam or quiz, providing unauthorized material or assistance to another student, colluding on assignments without the permission or knowledge of the instructor, and furnishing false information to receive special consideration, such as postponement of an exam, essay, quiz, or deadline of an oral presentation.

Plagiarism is the act of submitting as one's own the work (e.g., the words, ideas, images, compositions, or other intellectual property) of another without accurate attribution. Plagiarism can manifest itself in various ways: it can arise from sloppy, inaccurate note-taking; it can emerge as the incomplete or incompetent citation of resources; it can take the form of presenting passages or work prepared by another as one's own, whether from an online, oral, or printed source. It may also take the form of re-using one's own previously submitted work (such as a paper written for a different class) without the current instructor's knowledge and permission.

A student is culpable for violations of the academic honesty policy, as outlined above, when caused by either academic negligence or academic dishonesty. An act of academic negligence is when a student engages in behaviors outlined above through irresponsible ignorance or carelessness. Acts of dishonesty involve the intent to deceive or mislead. Initially, the instructor will make the determination that a violation of the policy may have occurred.

Students who take part in violations as described above are subject to a meeting with the Associate Provost of Undergraduate Education, who has the authority to take further action, up to and including expulsion from the College.

UNICHECK POLICY

In this course, you may be asked to submit some or all of your assignments for review by LVC's online plagiarism service, Unicheck. This service will compare the content of your work to content found on the internet and several proprietary databases. Any work submitted to this service may become part of the service's permanent collection of submitted papers. After your work is submitted, the service will generate an originality report, which will be sent to your instructor. Any student who submits plagiarized work will be subject to the penalties outlined in LVC's Academic Honesty Policy found in the Student Handbook and the College Catalog.

END OF TERM COURSE EVALUATIONS

Most courses at the College utilize a course evaluation system called EvaluationKIT. Near the end of the term, you will have the opportunity to evaluate the course in a number of key areas: learning environment, instructor performance, overall course structure, progress on relevant course objectives, and Constellation learning outcomes (if they apply). The faculty have approved a set of common questions that students will respond using an agreement

scale. Please note that quantitative survey results and comments are used for course and instructor improvements and to indirectly measure the progress on relevant student learning objectives.

POLICIES REGARDING ACCESSIBILITY RESOURCES

Individuals with disabilities are guaranteed certain protections and rights of equal access to programs and activities under Section 504 of the Rehabilitation Act of 1973 and the Americans with Disabilities Act Amendments Act (ADAAA) of 2008. Therefore, Lebanon Valley College recognizes the responsibility of the college community to provide equal educational access for otherwise qualified students with disabilities.

In-Person and Online Courses: Any student who needs accommodations is invited to provide letters from the Center for Accessibility Resources and discuss accommodations with me.

Any student who feels they may need accommodations based on a documented disability or other condition that may affect academic performance should: contact The Center for Accessibility Resources, located in the Lebegern Learning Commons — Mund Suite 002. Students may schedule an appointment by calling 717-867-6028 or emailing hannafor@lvc.edu to determine if accommodations are warranted and to obtain an official letter of accommodation.

Assistive Technology is available to enhance your academic skills. The Center for Accessibility Resources, located in the Lebegern Learning Commons—Mund Suite 002, offers educational software and personal assistive devices for short-term loans. Available assistive devices include LiveScribe pens, mini iPads, digital recorders, headphones, and adaptive keyboards. Our student coordinator is available to meet with students throughout the semester to suggest devices and/or software aligned to individual student needs.

If a student believes that appropriate accommodations are being denied, the student may file a grievance. Procedures for filing grievances may be found at www.lvc.edu/offices-directories/center-for-accessibility-resources.

STATEMENT ON INCLUSIVE EXCELLENCE

LVC is a community of inclusive excellence. We affirm the rights of all persons to a superior educational experience that is characterized by respect for others. As such, this class and all classes at LVC, are places where our core values of inclusiveness, civility and appreciation of difference are affirmed.

Policy on Names and Pronouns

Lebanon Valley College is committed to fostering an environment of inclusion and support, which includes honoring all its members' forms of self-identification. This policy supports the use of self-identified first names and pronouns for students, faculty, staff, friends, and alumni who wish to provide them. Many members of the LVC community may use names other than their legal names to identify themselves. If the use of this different name is

not for misrepresentation, LVC acknowledges that a chosen name may be used wherever possible. The name will be recorded and used except where the legal name is required. Be aware that LVC is implementing a new process in which students can specify if their chosen name is for internal use only or for both internal and external use. Students may see more information and update their information via the student information form accessible through MyLVC.

Although students, faculty, staff, friends, and alumni are free to determine the name and pronoun they wish to be known by, the College reserves the right to deny a name and pronoun if it is used inappropriately.

Gender pronouns are those pronouns that members of the community use to represent themselves. Gender pronouns can include, but are not limited to, he/him/his, she/her/hers, they/them/theirs, etc. Correctly using a person's pronoun is one of the most basic ways to show respect for a person's gender identity.

Names and pronouns will be entered and accessible to members of the campus community. LVC expects all faculty and students to respect community members' names and pronouns as consistent with our dedication to inclusion and equity.

Statement of Policy Against Title IX Sexual Harassment

In compliance with Title IX, a federal law, Lebanon Valley College does not discriminate on the basis of sex in the education programs or activities that it operates. Title IX of the Education Amendments of 1972 (20 U.S.C. §1681, et seq.) and its implementing regulations (34 C.F.R. Part 106) prohibit discrimination on the basis of sex in education programs and activities. No person in the United States shall, on the basis of sex, be excluded from participation in, be denied the benefits of, or be subjected to discrimination under any Education Program or Activity receiving Federal financial assistance.

Title IX requires that colleges and universities maintain an environment free from sex discrimination for all faculty, staff, and students. Under Title IX, discrimination on the basis of sex includes Title IX Sexual Harassment, Sexual Assault, Domestic Violence, Dating Violence, and Stalking. Sexual harassment is also prohibited by Title VII of the Civil Rights Act of 1964 and by the state law.

Inquiries about the application of Title IX and its regulations may be referred to: Title IX Coordinator, Ann C. Hayes, associate vice president of human resources, Office of Human Resources - Humanities 108, hayes@lvc.edu Phone: 717-867-6416 Title IX web page: <https://www.lvc.edu/offices-directories/human-resources/title-ix/>

OR Assistant Secretary for Civil Rights, U.S. Department of Education, Office for Civil Rights, ocr@ed.gov, 1-800-421-3481.

Title IX makes it clear that violence, harassment, and any type of sexual misconduct based on sex and gender are civil rights violations. If you or someone you know has experienced violence, discrimination, or harassment, support is available through Counseling Services, Health Service, the Chaplain's office, and Title IX deputies. Please refer to the Student Handbook or the College Catalog for specific contact information.

HYBRID AND ONLINE INSTRUCTIONAL EQUIVALENCIES

The faculty of Lebanon Valley College approved guidelines on Equivalent Instructional Activities that will be used to substitute for face-to-face contact hour requirements for this online or hybrid course. These activities are clearly documented in this syllabus. For further details, please review the approved Equivalent Instructional Activities.

Policy on Student Success and Intervention

- THE CENTER FOR ACADEMIC SUCCESS

Starfish is an online tool used at LVC that gives you the opportunity to connect with faculty and staff to cultivate your success. Through Starfish, you can submit concerns, access beneficial resources, connect with your Success Network, and receive updates on your academic progress. This tool also allows faculty and staff to recognize when you might need extra help and reach out to collaboratively resolve an issue. If you receive a Starfish Flag showing that someone has a concern, you will receive an email with a specific action plan to follow. Take that action and work with us to maximize your success.

- CARE Team

At Lebanon Valley College, we want you to succeed in and out of the classroom. Administrators and faculty work together on the CARE Team to cultivate Confidence, Accountability, Resilience, and Engagement in every student. If a member of the LVC community is concerned about you for any reason (i.e. academic, social, or emotional issues), they will ask a CARE team member to reach out to you and work with you towards a solution. You should consider it your assignment to follow through and accept assistance from the appropriate source(s). Don't be afraid or hesitant to seek help from these individuals: supporting you is their job! Be proactive and take control of your success.

- The Center for Academic Success and Exploratory Majors

Located in the lower-level of Mund College Center, the Center for Academic Success and Exploratory Majors serves to support, inspire, and cultivate student success. The key to performing well academically lies in frequently utilizing support services across campus; in fact, many of our top students utilize tutors to help prepare for exams, talk through challenging concepts, learn how to take effective notes, and more. For this reason, we staff peer tutors in almost all 100 and 200-level classes, including subject-specific writing conferencing. Students can request tutoring appointments through Starfish and the sessions serve as a place to connect with classmates, ask questions, and work on homework as well as drop-in writing support from 7pm-9pm, Mondays through Thursdays. If you would like to work with a tutor, please request a time using Starfish.

In addition, the Center features academic success coaching, where staff members support students by designing and implementing a plan for academic success. These "coaching" sessions focus on developing effective time management, organizational, test-taking, critical reading, note-taking, and study skills, as well as learning healthy behavioral techniques like stress management and self-motivation. . For more informa-

tion on any of these services, visit the Center for Academic Success. To request an appointment, please email findyoursuccess@lvc.edu.

The Center also serves as the home on campus to Exploratory (undecided) majors. Professional staff advise students who are still determining their major/career path and support students who are in transition between majors as they determine their next steps.

Statement on Supporting Mental Health

Counseling Services

LVC cares about you and your mental health. We recognize that mental health support is vital to your growth as a student and individual. Stress, anxiety, depression, relationships, and problems with eating and sleep can adversely influence your academic performance. We want to help you be your best. A consultation with a professional counselor can help make a difference. Our professional counselors can assess your needs, help you build skills, and connect you to appropriate services. Students who start the counseling process earlier in the semester report the most significant improvement. All counseling services provided are free, completely confidential, and in no way connected to your academic record. I strongly encourage you to take advantage of this valuable resource. Please, contact Counseling Services at 717-867-6232 or counselingservices@lvc.edu and leave your contact information. We will return your call or email as soon as possible; please know that we do not check email after hours, on the weekends, or during vacations. [Click here](#) to explore all Counseling Services has to offer. If you experience an emergency, please call 911 in your local area or text 741741 (Crisis Text Line), or call 988 (Suicide & Crisis Lifeline) to request immediate assistance.

Notice of Non-Discrimination and Equal Opportunity

Lebanon Valley College does not discriminate on the basis of race, color, national origin, ancestry, religion/creed, pregnancy, sexual orientation, gender identity or expression, age, disability, genetic information, or veteran status in its programs and activities as required by the Americans with Disabilities Act of 1990, Section 504 of the Rehabilitation Act of 1973, Title VII of the Civil Rights Act of 1964, and other applicable statutes and/or College policies.

The following person has been designated to handle inquiries regarding the Americans with Disabilities Act, the Rehabilitation Act, Title VII, and related statutes and regulations: Ann C. Hayes, associate vice president of Human Resources and Title IX Coordinator, Administration Building/Humanities Center 108, Lebanon Valley College, 101 N. College Avenue, Annville, PA 17003-1400, 717-867-6416, hayes@lvc.edu.

Statement on the Use of Artificial Intelligence (AI)

Students should be aware that the work they submit must be their own. Professors may create assignments or activities that require or encourage the use of AI. If such use is not either required or allowed explicitly, then students must assume that the use of artificial intelligence is **not** acceptable in any given assignment. In this instance, unacknowledged

uses of artificial intelligence in student work can be deemed violations of our academic honesty policy (see above). If this is unclear in any way, it is the student's responsibility to ask the professor about appropriate uses of AI for the assignment.

Religious Accommodations

Lebanon Valley College is committed to providing a welcoming and supportive environment for students from all cultural and religious backgrounds. All members of the community should commit to students not suffering adverse consequences for practicing their religions. We recognize the Christian centeredness of our campus, including our Academic Calendar. We seek to support an environment that is welcoming to persons of all faith traditions and backgrounds. Students whose religious practice requires that they observe holidays other than those specified on the Academic Calendar should have a conversation with either a faculty member or the Chaplain and Coordinator of Spiritual Life to initiate the accommodation process. This conversation should happen within the first two weeks (or first week, if the course is a summer, winter, or graduate course meeting for less than 15 weeks) of each semester of their intent (even when the exact date of the day will not be known until later) so that alternative arrangements for both students and faculty can be made at the earliest opportunity. Any such conversation should seek to determine the needs of the student and the appropriate next steps. If the conversation starts through a faculty member, the faculty member should recommend that the student also have a conversation with the Chaplain so that the Chaplain may learn about the student's needs, attend to any non-academic requests, and refer the student to other impacted faculty. If the conversation starts with the Chaplain, the Chaplain will direct the student to also have a conversation with impacted faculty members.