

Lyon College Batesville Campus: Standard Course Policies

Effective date: August 1, 2026

These policies apply to all courses offered at Lyon College's Batesville campus. Details related to a specific course can be found in the rest of the course's syllabus.

Honor Code

All graded work in this class is to be pledged in accordance with the Lyon College Honor Code. The use of a phone for any reason during the course of an exam is considered an Honor Code violation.

Class Attendance Policy

Active participation and interaction with instructors and classmates are vital parts of learning. Therefore, no matter the style or format of a given course, Lyon College students are expected to attend, according to instructor-defined standards, all class periods for the courses in which they are enrolled. Instructors must record attendance promptly in the College's Learning Management System.

Occasionally, students may be prevented from attending classes for college-sponsored events or for other unavoidable and/or uncontrollable reasons. Absences due to such reasons are excused absences. Absences for college-sponsored events are always considered excused. Instructors, on a case-by-case basis, may consider other absences excused. For excused absences, instructors cannot penalize a student's participation or graded work without first offering a reasonable make-up opportunity.

Instructors who find that a student is absent from class excessively, excused or not, and also not making good-faith efforts to keep up and meet performance standards may request that the student be involuntarily dropped from the course. Before pursuing this, the instructor must have submitted an appropriate alert via the Early Alert system at least two calendar weeks prior so that the student will have had a warning that they are in jeopardy and have time to correct the behavior and performance. Students will be given the opportunity to respond to an instructor's request to drop them. The final decision will be made by the Provost and communicated to the instructor, the student, the Registrar, and other relevant parties.

Students who are involuntarily withdrawn from a course will receive a W, WP, or WF in the course following the same rules that apply for voluntary withdrawals. Students may not be involuntarily withdrawn under this policy after the final exam period for the relevant term, sub-term, or mini-term has begun.

Recording of Classes and Meetings

To protect the intellectual property of instructors, the privacy of students and employees, and the integrity of the learning environment, students may not make audio, video, photographic, or other recordings of class sessions, laboratories, studio activities, examinations, private meetings with faculty or staff, or other instructional or academic activities without the knowledge and prior written permission of the instructor, except as required as an approved disability accommodation. Instructors may authorize recording or provide recordings of their classes on a course-by-course basis when they determine it is appropriate for instructional purposes.

Any recordings or other course materials provided or authorized (see above) by an instructor are for the personal educational use of students enrolled in the course. Students may not copy, share, post, distribute, sell, or otherwise make such recordings or materials available to others without the instructor's prior written permission.

Unauthorized recording or distribution of recordings or other instructional materials may constitute a violation of College policy, the Honor Code, copyright law, or other applicable laws and may result in disciplinary action.

Academic Support

The Morrow Academic Center (MAC) assists students who want to improve grades or academic skills by providing peer-led services including Supplemental Instruction (SI), tutoring, the Writing Center, and academic coaching as well as providing 24-hour, online tutoring for all subjects through online tutoring. A schedule of peer-led services is available at

lyon.edu/mac and online tutoring is accessed through courses in Canvas. Contact Emily Dyer, Director of Academic Support and Accessibility, at (870) 307-7319 or emily.dyer@lyon.edu for more information about MAC services.

Technology Support

For any technology-related support, you can contact the IT department by emailing support@lyon.edu or by calling 870-307-7555. You can also navigate to support.lyon.edu to submit a ticket request. Your course content will be accessible digitally using the Canvas Learning Management System (LMS), which uses your myLyon credentials for your student login. To access Canvas, login at lyon.instructure.com.

NOTE: Students taking RISE courses will use the [RISE Canvas LMS login](#).

Disabilities

Students seeking reasonable accommodations for learning, psychological, or physical disabilities must contact Emily Dyer, Director of Academic Support and Accessibility, in the Morrow Academic Center at (870) 307-7319 or at emily.dyer@lyon.edu.

Harassment, Discrimination, and Sexual Misconduct

Lyon College seeks to provide all members of the community with a safe and secure learning and work environment that is free of crime and/or policy violations motivated by discrimination, sexual and bias-related harassment, and other violations of rights. The College has a zero-tolerance policy against gender-based misconduct, sexual assault, and interpersonal violence toward any member or guest of the Lyon Community. The College encourages anyone experiencing or knows of someone experiencing harassment, discrimination, or sexual misconduct to speak to and file an official report with our Title IX Coordinator, located in the Nichols Building, office 12 near the north exit. All college employees (faculty, staff, administrators) are required to report actual or suspected incidents of harassment, discrimination, intimidation, and violence to appropriate officials immediately. However, there are limited exceptions, referred to as confidential reporters (Campus Clinic Director, the Chaplain, or the Director of Mental and Behavioral Health). Confidentiality will be maintained to the greatest extent possible within the constraints of the law. [Title IX Reporting Tool](#). [Lyon College Title IX Policy](#).

Mental & Behavioral Health

Lyon College is dedicated to ensuring each student has access to mental and behavioral health resources. The College's Mental and Behavioral Health Office is located in Edwards Commons and is partnered with White River Health's Behavioral Health Clinic. The office is committed to helping the Lyon community achieve maximum mental and behavioral wellness through both preventative and reactive care. A full-time, licensed, professional counselor provides counseling, consultations, outreach, workshops, and many more mental and behavioral services to Lyon students, faculty, and staff at no cost. The Mental and Behavioral Health Office also provides access to White River Health's services and facilities, including medication management and in-patient and out-patient care. To make an appointment, contact counseling@lyon.edu.

The rest of a course's syllabus will include at least the following:

- A description of the course consistent with the Lyon College catalog.
- A list of student learning outcomes for the course.
- A summary of all course requirements.
- An explanation of the grading system to be used in the course.
- Any course-specific attendance policies that go beyond the College policy.
- Details about what constitutes acceptable and unacceptable student collaboration on graded work.

Tentative Syllabus for Physics 335: Fall 2026

Professor: Dr. Stuart Hutton

Office: Derby Center: 248 Research Lab: Derby 219: General Physics lab: 148

Lab email: lyonphysics@lyon.edu web: physics.lyon.edu

Phone: 307.7560 Email: stuart.hutton@lyon.edu

Class Meeting Details

Location Derby 148: Times and days: To be determined

I will schedule several office hour blocks. I will be very close to my office or research lab during these times. Otherwise, I will usually be close to my office or research lab. If you want to find me outside of office hours, make an appointment so that you will be sure to find me. My schedule is located on the physics home page which you may review to determine office hours.

Grading

As a general guide to grades, grades will be assigned as follows:

100-90]	(90-80]	(80-70]	(70-60]	<(60
A	B	C	D	F

In this course, you will have several grading opportunities, tests, homework, in-class problems and laboratory projects. The various weight of each of these activities in your final point grade is shown below. **Late assignments will normally not be accepted. Additionally, since we will be doing in-class problems, poor attendance will negatively affect your grade. About labs: A brief lab report will be normally due within 1 week of the lab completion. We will be doing approximately 5 labs during this course.**

Tests (3 tests)=75%

Each test is worth 25% of your grade.

Homework / in-class problems / participation=15%

Laboratory projects =10%

All lab projects must be completed or your course grade will be reduced by 10%.

Your work on tests will be graded for correctness and clarity. **Failure to supply details leading to a result will result in very little credit for a problem.** If you want full credit for a problem, **you must** supply the logical steps that led to the result and the result **must include proper units.** Diagrams should be included where appropriate to define quantities used in your result. Homework and worksheets will be graded for completion. Students are generally expected to commit two hours of study outside of class for each hour of lecture.

Course Description: Physics 335

In this course you will be exposed to the fundamentals of modern physics with topics including relativity and quantum mechanics.

Course Objectives: Physics 335

As a consequence of this course, you should obtain an enhanced understanding of the fundamentals of modern physics. In addition, you should come away from this course with an ability to solve fundamental problems involving physical principles. The particular topics covered in this course are outlined in the schedule. Depending upon class interest, the actual topics may vary slightly from those stated. Refer to Student Learning Outcomes for a discussion of minimal course outcome expectations.

Course Prerequisites: Physics 335

You are **expected** to be proficient with algebra and trigonometry . In addition students should have course work in calculus and should have completed [Phy210/240:241] and [Phy220/250:251].

Text

Physics 335:

Modern Physics for Scientists and Engineers
Third Edition

By: Stephen T. Thornton and Andrew Rex
ISBN: 0-534-41781-7

You may use earlier editions of this text (which can be obtained at much lower prices online {\$0.25 for example is a low price}) but you will need to be sure to read the correct portions of the text.

The schedule is designed around this particular text edition. Again, you may use earlier or later editions but you will need to be sure to read the correct portions of the text. The text must be considered to be a very important resource so students are expected to be reading along in the text as the course progresses.

You have many resources on the campus: the library, your colleagues and your professor. Your prime learning resource, however, must be considered to be the classroom: **punctual** and **complete** class attendance is expected.

Punctual and complete class attendance is expected. Absences will negatively impact your final grade. Attendance will be taken.

Academic Honesty

It is expected and encouraged that students in this class will work together on homework problems. If you use reference work, be sure to include proper references. Questions during tests should be directed to the professor only and students are not permitted to communicate with each other during tests about any aspect of the course. Students are specifically prohibited from discussing any aspect of tests until all students have completed the test. Contravention of these conditions will be considered to be a violation of the Lyon College Honor Code. For guidelines on AI usage, refer to AI usage below.

AI Usage Guidelines FA26

The use of generative artificial intelligence (AI) tools or automated problem-solving software presents both opportunities for learning and responsibilities regarding academic integrity. Guidelines regarding AI use as is related to academic honesty are provided later in this document. **Under no circumstances are you permitted to use AI resources on tests.**

A warning about searches and AI

A quick heads-up about AI: I am fine with you using AI search summaries to help you figure things out. In fact, just about every search engine except perhaps Searx and Searxng automatically include AI summaries, usually at the top of your search results.

Be careful! If you search for a physics concept and paste that summary into your report, keep in mind that any classmate typing a similar query into the same search engine will likely get the exact same sentences. If you paste that text into your assignment, your paper will match someone else's work word-for-word. Even if you never intended to plagiarize, submitting auto-generated text as your own writing still constitutes plagiarism—and it sticks out like a sore thumb.

In short: You are welcome to use AI tools and search summaries during your personal study time, but to get credit for your work, the actual writing must come from your own head. Do not copy and paste summaries.

Permitted Use: Post-Draft Proofreading & Editing

You are permitted to use generative AI tools to review and proofread your already written lab reports prior to submission. Think of the AI as an advanced spell checker.

Allowed: Asking the AI to flag grammar errors, typos, awkward phrasing, or run-on sentences in text you wrote.

Prohibited: Asking the AI to write the initial draft, generate explanations from scratch, or fabricate lab data.

Your Responsibility for Physics Accuracy

Generative models edit for grammatical fluency, not scientific truth. AI tools routinely "smooth out" technical prose by accidentally altering physical laws, dropping units, or changing numerical values. You are 100% responsible for reviewing every suggested edit line-by-line. If the AI changes your physics, you are accountable for the error.

An Experiment for FA26:

The one time you may use AI to assist with an initial draft

Note: this applies ONLY to Physics 241FA26 and not to any other course at Lyon.

Physics 241 requires 3 scientific reasoning (SR) paragraphs. In the following manner, you may (but are not required) use AI to assist in the development of your first draft:

Each SR covers 1 or more specific labs. You **must** submit your finished lab reports to AI, along with the rubric and guidelines for SR completion. You may ask ai to prepare a summary within the guidelines. You work from that summary to produce your initial paragraph. You may absolutely not cut and paste AI output and submit that as your paragraph. Your paragraph must still come from your words, but the summary may be used as a guideline. You are responsible to ensure that only terms covered up until that time in the course and lab are used. AI in particular will use terms and concepts that have not been covered in class in this paragraph and, back to the sore thumb, it sticks out. Be very careful: AI is very good at deception in such a way that you think it is truth. Of course, it is not a purposeful thing on the part of AI: AI follows vector dot products, cross products, and probabilities. AI does not know what the next word of output will be until it is output.

After you complete your SR paragraph, you may submit it back to AI for proofreading. Again, relatively small changes may happen but you are still responsible for the physics contained in your paragraph.

Because of the relaxed assistance, you are not permitted to hand in SR after the deadlines provided unless you had an excused absence from a particular lab. **This means you must have completed the labs and have them accepted before the deadlines.**

CLASS SCHEDULE / OFFICE HOURS Fall 2026

Professor: Stuart Hutton

Monday	Tuesday	Wednesday	Thursday	Friday
8:00-8:50 PHY240.01 Fundamentals of Physics I Derby 007	8:00-9:15	8:00-8:50 PHY240.01 Fundamentals of Physics I Derby 007	8:00-9:15	8:00-8:50 PHY240.01 Fundamentals of Physics I Derby 007
9:00-9:50 PHY210.01 General Physics 1 Derby 007		9:00-9:50 PHY210.01 General Physics 1 Derby 007		9:00-9:50 PHY210.01 General Physics 1 Derby 007
10:00-10:50 Office Hours Derby 248	9:30-10:00	10:10-10:50 Office Hours Derby 248	9:30-10:00	10:10-10:50 Office Hours Derby 248
11:00-11:50	10:00 - 10:50	11:00-11:50	10:00 - 10:50	11:00-11:50
	11:00 - 11:50 Phy321 Astrophotography		11:00-11:50 Phy390	
12:00 - 12:30 Phy335 Modern Physics	12:00 - 12:50	12:00 - 12:50	12:15-12:50 reflections	12:00 - 12:50
13:00-15:00	13:00-14:30 14:30-15:40 Phy335 Modern Physics	13:00-15:50 PHY241.01 Fundamentals of Physics Lab 1 Derby 148	13:00-15:50 PHY241.02 Fundamentals of Physics Lab 1 Derby 148	13:00-15:50 PHY241.03 Fundamentals of Physics Lab 1 Derby 148
15:00 - 15:50 Phy335 Modern Physics				
	16:00-16:50 Div Meetings Fac <u>Assy</u>	16:00-16:50 P&T <u>Worthington</u>		

Tentative Schedule for Physics 335.01 Nuke emphasis Fall 2026

Date	Information	Event Information
Week starting August 17		Course Initialization
	Partial Derivatives Worksheet	Worksheet 01
	Time Dilation Twin Paradox	Especially Simple Special Relativity Notes
		Gamma Factor vs. Beta Factor Spreadsheet
Week starting August 24	Simulations	Relative Motion: fixed , Comoving
	Time dilation, Length Contraction, Relativistic Velocity addition	Lorentz Transformations
Week starting August 31		Acceleration Transformations
	Space Time diagrams	Space-Time diagram Notes
	Simultaneity:Space - time intervals	Interactive Space-Time Spreadsheet 06
		external: Interactive Space-time Diagram
		Twin Paradox and Muons
		Relativistic Doppler Shift Notes
		Classical Doppler Shift Animation
		Tabulated Results of Frank-Mary Experiment
		Relativistic Momentum
	2-D Collision in two frames	Mary and Frank Collision Frank's Frame : Mary's Frame
		Relativistic Energy Derivations
		Worksheet 02
Lab 01	The "Oh my God!" particle (backup)	Lab 01: Speed of Light Derivation Spreadsheet Calculator
(approximate date given here)	Test 1	September 14, 2026
Week starting September 07	Modern Physics timeline	Selected Topics from Chapter 3 e/m measurement determination of e Line spectra Photoelectric effect
		Millikan Oil Drop Experiment
		JJ Thompson Nobel Prize site From AIP
		Mass Spectrometer

Week starting September 14	E over M calculator	Lab 02: Charge to Mass Ratio of the Electron Lab
		Images :Electron Beam E over M Experiment
		Wave Particle Duality
	Blackbody radiation Java Applets	BlackBody Radiation Notes Image from RPI
Week starting September 21	Electromagnetic Spectrum Chart	
	Photoelectric Effect Spreadsheet	L03:Photoelectric Effect Notes: lab : Java Simulation
		James Clerk Maxwell (1831-1879) Robert Bunsen (1811-1899) JJ Balmer (1825-1898) JJ Thompson (1856-1940) Ernest Rutherford (1871-1937) Niels Bohr (1885-1962) Prince Louis-Victor de Broglie (1892-1987) Albert Einstein (1879(Ulm)-1955) Leucippus of Miletus (480BC-420BC)
Week starting September 28	Elemental Discharge Spectra Another link	Discharge Spectra Classification
		Lab 04: Spectral Discharge
	Bohr Model Java applets:	Bohr Model Worksheet and solutions
Week starting October 05	Thompson model Java Applet	Rutherford Scattering : Java applets
	Lab 05: Frank Hertz Experiment	x-ray and electron diffraction
	1924	De Broglie Waves
	Nobel Prize Site for Davisson and his lecture	
	1914 : NP 1925 James Franck (1882 -1964) N Franck Hertz Simulations a: requires shockwave b: under java (German) Another link Experiment Notes [P] Gustav Hertz (1887 -1975) N (nephew of Heinrich Hertz)	Franck Hertz Simulations a: requires shockwave b: under java (German) Another link Experiment Notes [P]Week
Week starting October 19		
	Elemental Discharge Spectra	Discharge Spectra Classification
	Nobel Prize Site	

	1914 : NP 1925 James Franck (1882 -1964) N Gustav Hertz (1887 -1975) N (nephew of Heinrich Hertz)	Franck Hertz Simulations a: requires shockwave b: under java (German) Experiment Notes [P]
	Lab 05: Frank Hertz Spreadsheet	An example of screen capture from Franck Hertz experiment
(approximate date given here)	Test 2	October 19, 2026
Week starting October 26		Wave Motion Notes
	animations	Superposition of waves (beat formation)
		Co-moving Observer
		Moving Spreading Gaussian Wave packet
		Spreading Wavepacket with cars
		Slinky: Longitudinal Pulse :Collision Transverse Pulse: Collision
		Harmonic Traveling Wave on an Infinite String : 001 and Spooky
	Java Applet (External)	Fourier Synthesis for Sound
Week starting November 02		Quantum Mechanics Notes 01
		1D Quantum Square Well Wave Functions
		1D QM square well java applet
		Mixed State 1D Quantum Square Well Wave Functions:2,3 : 2,4 : 3,5
		Quantum Mechanics Notes 02
Week starting November 16		QM Worksheet
	The "Halloween" operator :)	
		Rectangular Barriers
	Quantum Wave Functions	Quantum SHO [W :O: P]: sloped square well
	They make really nice movies here	Wave functions extrodinare
		3D Quantum Square Well
		3D Square Well Spreadsheet
Week starting November 23 - December 04	Useful Page	QM solution for the Hydrogen Atom
		Magnetic Effects
		Probability Distribution Functions
		Total Angular Momentum

		How to use circles to show addition of angular momentum
	Health Physics Society	
Week starting Nov 23-Dec 04	IAEA	Nuclear Physics 01 [P]
		Nuclear Physics 02 [P]
		Decay Scheme
	Miscellaneous topics from Modern Physics	Stopping of radiation by physics text
(approximate date given here)	Test 3	November 30, 2026
	Miscellaneous topics from Modern Physics	
		Information on Moe Berg
	Miscellaneous Topics / Classical Gravitation	
Friday December 04	Last Day of Classes	labs not accepted after this day

Physics Problem Solving Rubric Rev FA2026

Note: this rubric indicates the process for completion of physics problems. Since our tests are now multiple choice, this should be viewed as a self-guided checklist for successful and complete problem completion. For sample calculations in lab reports, you should follow this rubric closely.

	1	0.7	0.4	0
1, Critical Thinking: Solution started correctly. Note: sketches may be considered here as required in problem statement.	correct approach If required, sketches were correct.	approach would lead to correct result Sketches miss one label or some other component absent or incorrect.	Something is right in the approach but insufficient to reach problem solution. Sketches miss multiple labels, directions incorrectly indicated	incorrect approach Sketch not present or not at all correctly labeled.
2. Quantitative Literacy: Solution proceeded quantitatively	Mathematical operations correct and units correct	Mathematical operations and units correct however an error usually related to incorrect units or the final numerical result present	Mathematical operations have some correct steps but misapplication or other errors prevented problem completion. Units reported in final result not present or incorrect .	Necessary mathematical operations incorrect and units absent
3, Scientific Thought & Informational Literacy Note: this may be contained within an equation starting the problem solution.	correctly stated physical principle or law and physical terminology needed to solve problem.	physical principle or law used shown however omission or extraneous material present. physical terminology needed to solve problem used but not complete or absent important concept.	statement of physical principle or law present but would not apply to present problem so as to lead to solution. physical terminology needed to solve problem incomplete and would not have lead to problem completion.	no statement of physical principle/ law or incorrect physical principle/ law. Did not use physical terms needed to solve problem or incorrect terms used.

Problem scoring: maximum per **problem section** is about 5 points, some sections may have fewer points. In a test containing 4 problems, this equates to 25% of the total test score. The final score per problem is calculated as follows:

$$P_i = \frac{\text{total number of points from rubric}}{\text{maximum rubric points per problem}} \times \frac{100}{\# \text{ of problems on test (normally 4)}}$$

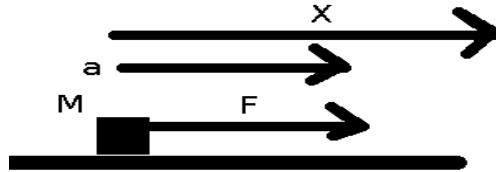
The test score is then determined by

$$\text{percentage test grade} = \sum_{i=1}^{i=\text{Number of problems on test}} P_i$$

Example of a complete solution

Find the vector position at time t of an object of mass M when subjected to a constant force $\vec{F}=F\hat{x}$ for a time t if the object was initially at $x=0$ and at rest. Provide a numerical result with correct SI units for $F=1$ N, $M=1/2$ kg and $t=2$ s. Include a correctly labeled sketch showing F acting on M , a and x .

Solution:



$$\text{Newton's law: } \vec{F}=M\vec{a} \Rightarrow \vec{a}=\frac{\vec{F}}{M}; \vec{F}=F\hat{x} \Rightarrow \vec{a}=\frac{F}{M}\hat{x} : a_x=\vec{a} \cdot \hat{x}=\frac{F}{M}$$

Constant force : kinematic equations of motion in x direction for position:

$$x=x_0+v_{x,0}t+\frac{1}{2}a_x t^2$$

Object initially at rest: $v_{x,0}=0$ m/s . Object initially at $x=0$: $x_0=0$ m .

Kinematic equation reduces to: $x=\frac{F}{2M}t^2$

$$\text{With numerical values: } x=\frac{1\text{ N}}{2\left(\frac{1}{2}\text{ kg}\right)}(2\text{ s})^2=4\frac{\text{Ns}^2}{\text{kg}}=4\text{ m}$$

Final answer with vectors: $\vec{x}=4\text{ m}\hat{x}$

Score:

1: Started with Newton's law and used correct equation of motion, additionally a correctly labeled sketch was drawn showing correct vector directions as was required=1

2: Algebra (including vectors) correctly lead to final result, unit algebra correct=1

3: Correctly used physical information in the problem which were mass M , initial conditions (at $x=0$, at rest) , time t , constant force, vector directions. Correct numerical quantities (including correct vectors) provided in final result with correct SI units reported=1

Safety regulations for General Physics Labs Fall 2026

- (1) Anytime springs are used in lab, safety goggles must be worn.
- (2) Anytime boiling water is used in lab, safety goggles must be worn.
- (3) You should not look at laser light or point it towards other people.
- (4) In the event of a spill (which will be water), dispense a towel from the spill kit (aka towel dispenser) and wipe up the spill.
- (5) Food and drink are not permitted in lab.

Attach this form to your email (as an extra attachment today) when you send in your introductory lab report. In your lab report, right below your name, you should say this:
I have read the safety regulations attached to this email.

Notes on the lab write-up for physics labs Fall 2026

Your first (cover) page should include the following information:

Your Name, Date, Partners, Title of Experiment and the abstract.

(Then insert a page break)

Each lab must be the unique written effort of the student submitting the report. You may NOT reference or use lab reports (prepared by others) in your report preparation although you are most certainly encouraged to talk to your lab colleagues.

Lab reports must be electronically submitted to the appropriate address as a single pdf document. Links to external documents are not accepted.

Title: Concise wording that describes the essence of the lab.

Abstract - a summary of your research including general methods and major conclusions. This is usually one paragraph long and should convince someone to read your paper. Include a statement of your hypothesis here and if data supported it.

Introduction: An overview of your experiment, statement of hypothesis, what you did and what the theory was behind the experiment.

Methods: - A brief discussion of experimental techniques. Diagrams are usually appropriate in this section.

Results -written usually in the past perfect tense or passive voice; describes your findings, data collected, and includes data tables, graphs, general trends, derived formulas, etc. All work and data tables must be shown here. In general, you need to have a copy of your original data with you but the data included in the lab report can be copied from your original data. Data should be absent of obvious errors (since you would have tracked down these items).

Discussion and analysis - tense can vary, describes your results in relation to other data, discusses problem associated with the lab, postulates trends in the data, predicts results given different circumstances, suggests sources of error, etc. Discuss how the data supports, or does not support your hypothesis and how well such support is in terms of error analysis such as percent differences. **Be sure to include sample calculations in this section.**

Literature Cited - a list of books, articles, etc., that you used to assist you in presenting your data and which were referred to in the write-up. **When citing a reference from the internet, you MUST include the URL that points directly to the document so that a single click of the mouse will bring up that exact document. Every lab report will have at least 1 citation or the report will not be accepted.**

Your presentation of the lab is important. Be sure it is grammatically correct and neatly typed. Be careful of tense changes within a paragraph. Data collected during a lab must be authentic. "Fudging" is unacceptable and unnecessary.

Lab write-ups should be as **concise** as possible within these guidelines. I am not looking for exhaustive tomes of work in a lab write-up.

Physics Lab Grading Rubric Fall 2026

Note: Each student has the opportunity to revise deficient portions of the lab report during the lab period except for teamwork, arrival and departure. This should be regarded as a guide to required elements of a completed lab. However, unless a lab is completed and accepted within the required time frame, your course lab grade will be reduced by a letter grade for each instance.

	1	0.5	0
Scientific Thought	Hypothesis in abstract and introduction. Supporting evidence (or non-supporting) discussed in conclusion.	Hypothesis in abstract and introduction but not relevant and supporting evidence (or non-supporting) not discussed in conclusion.	Hypothesis absent in abstract and introduction; Supporting evidence (or non-supporting) not discussed in conclusion
Critical thinking	Correct discussion of experiment, and how results relate to hypothesis.	Incomplete discussion of experiment and how results relate to hypothesis	poor or absent discussion of experiment, and how results relate to hypothesis.
Inquiry and Analysis	Complete discussion of experimental technique and data results	incomplete discussion of experimental technique and data results	poor or absent discussion of experimental technique and data results
Informational Literacy	Correct physical terminology contained in report. At least one reference present.	incomplete physical terminology contained in report. Reference present but not correct.	incorrect or absence of physical terminology contained in report. Reference not present.
Quantitative Literacy	Correct usage of calculations including spreadsheets	correct usage of calculations including spreadsheets but something significant missing	Absent or incorrect usage of calculations including spreadsheets
Teamwork	Successful completion of lab		Unsuccessful completion of lab
Arrival	on time		tardy or absent
Departure	Work space returned as it was when arriving		Workspace left in disorder upon departure
Overall report	All required elements present		Required elements missing.
Quality	experimental results presented without obvious errors		experimental results presented with obvious errors

Student Learning Outcomes for the Physics Program at Lyon College

1. *Students who complete modern physics (Phy335) are able to quantitatively apply*

- 1a. special relativity and needed modifications of Newtonian Physics
- 1b. quantum mechanics as applies to simple situations.
- 1c. the basis of nuclear reactions and decay. Fall 26: expanded nuclear.

2. *Students will have lab exposure to milestone experiments in modern physics.*

2a. Phy335 students will also have lab exposure to several modern versions of important milestone experiments and fundamental experiments in modern physics.

The quantitative aspects (1a,1b,1c) can be measured of portions of currently-used standard exams and exam problems graded according to the problem solving rubric. For each exam, data will be recorded for 1 problem.

The Lab portions (2a) will be evidenced by very brief technical reports of several of the experiments performed in lab graded according to the standard lab grading rubric for two several selected experiments. Data will be recorded for two selected reports.