

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Students who are involuntarily withdrawn from a course will receive a W, WP, or WF in the course following the same rules that apply for voluntary withdrawals. Students may not be involuntarily withdrawn under this policy after the final exam period for the relevant term, sub-term, or mini-term has begun.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 Lab 241: Fall 2026

Professor: Dr. Stuart Hutton

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

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

Phone: [***.307.7560](tel:307.307.7560) Email: stuart.hutton@lyon.edu

Note this very clearly: labs are due by lab time 1 week after completing the lab. Labs are normally not accepted late. Any required revisions must be completed (and the lab accepted) by 2 weeks after the lab was completed. If these deadlines are not met, Your final lab grade will be reduced by a letter grade each time. **Additionally NO labs will be accepted after the last day of classes which is December 04, 2026. If you fail to receive accepted for more than 3 labs, you will fail the course.**

[Location:Section:Meeting times] =

[Derby 148:1:W 13:00-15:50,2:R 13:00-15:50,3:F 13:00-15:50]

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

The table below shows the point allocation for each of the labs and SRs

accepted Lab 01:8	SR01:2 (from lab 01)
accepted Lab 02:10	No SR
accepted Lab 03:8 / Lab 04:8	SR02: 4 (from lab 03 and lab 04)
accepted Lab 05:8 / Lab 06:8	SR03: 4 (from lab 05 and lab 06)
accepted Lab 07:10	No SR
accepted Lab 08:10	No SR
accepted Lab 09: 10	No SR
accepted Lab 10:10	No SR
Lab Total: 90	SR Total: 10

Points awarded are contingent upon successful completion of the lab and Submission of an acceptable lab report following the guidelines and rubric on the lab website. Note, however, that in the event that an acceptable lab report is not submitted, the lab is considered to not have been done and the final course grade will be lowered by 1 letter grade. **If you fail to submit more than 3 accepted reports, you will fail the course.** Further, if you submit no SR paragraphs, your grade will also be reduced by a letter grade. Each student is to submit an individual and independent electronic lab report (in pdf format only) for each experiment completed based upon data obtained in lab during FA26 and the report must be accepted in order to obtain credit. You will have the opportunity to revise based upon comments from the received electronic labs and resubmit your reports. To make every one's life easier, use email reply including comments in the event of revisions. SRs are not subject to revisions. Refer to Student Learning Outcomes for a discussion of minimal course outcome expectations. Do note: every lab or SR submitted must be as a pdf attachment and not a link to, for example, a cloud drive link.

Note: If you miss one of the labs when experiments are done and it is not made up, your lab grade will be lowered by one letter grade for each missed lab which is not made up. The full lab, including writeup, must be completed or your grade will be reduced by one letter grade for each lab not fully completed. You must make up any excused absences at the first opportunity.

It is important that you understand what you did during the lab before turning the lab report in to your professor. Your work on lab write-ups will be graded for correctness, clarity and completeness. If you want full credit for a lab, **you must** supply the logical steps that led to the result and the result **must include proper units**. You should supply sample calculations where appropriate. Diagrams and graphs should be included where appropriate. Aside from data tables and graphs, the components required for the proper lab write-up should take about 4 - 5 pages maximum for any given lab. Be sure that each lab starts with a cover page as indicated in the lab write-up guidelines. Make sure that your lab write-up is in the form of paragraphs with correct English grammar as indicated on the lab write-up guidelines. Failure to follow the guidelines will negatively impact your grade. **Please refer to AI usage guidelines regarding proper ai usage.**

**Phy241 is a separate course from either Phy210 or Phy240.
The grade in Phy241 has no impact upon the grade in either Phy210 or
Phy240 except as a co-requisite.**

In this course, your grade will depend upon successful completion of lab experiments and reports. **You are also expected and required to have read the lab before coming to class and to have reviewed the lab material.** You should bring your text, a calculator, and paper to lab. You will need to come to lab on time because, among other things, everyone has to wait for you to show up. Making up the lab for unexcused absences is normally not permitted: it is thus in your interest to show up to lab on time. If you schedule a make up lab and do not show up, you will not have another opportunity to make up that lab. Additionally, you should

never plan other activities during the lab period since labs normally will occupy the entire period. Your prime learning resource is the classroom: **punctual** and **complete** class attendance is expected. **Absences will negatively impact your final grade.** Do not show up late to lab because the entire lab has to wait on your appearance.

Lab report formats

If you miss a lab for an excused reason, you must make up the lab as soon as possible. If you fail to hand in a lab report late which is accepted, you will lose a minimum of 10% of your grade final grade. Labs must be submitted in **pdf** format electronically. **When including spreadsheet screen captures in your reports, be sure to format tables so they fit on the page and are completely readable. I should be able to read your lab (as a single document in pdf format) without having to change anything. This means, check (proofread) your pdfs before you send them to make sure you can read them. Specifically, you must check your sent email to confirm that any attachments sent were correctly attached, could be opened, and were in pdf format. Do not submit links to documents; your report is a pdf attachment to your email.**

If you miss one or more of the labs without makeup, your lab grade will be lowered by one letter grade for each missed lab which is not made up. Do not submit non-pdf attachments or corrupted files via email and expect to obtain extra time to complete the lab.

Course Description

In this course you will be exposed to the experimental side of physics. Among the topics that we will investigate are mechanics, waves, and thermodynamics.

Course Objectives

As a consequence of this course, you should obtain an enhanced understanding of the experimental nature of physics. In addition, you should come away from this course with an ability to interpret data in a scientifically valid manner and to have increased experience with writing brief technical reports. Refer to Student Learning Outcomes for a discussion of minimal course outcome expectations.

Course Prerequisites

In order to be taking the physics lab, you must be currently enrolled in or have successfully completed either physics 210 or physics 240 and therefore you must satisfy the prerequisites for those courses.

Text

The text will consist of handouts in electronic format obtained via the physics gateway at: <http://physics.lyon.edu>

Academic Integrity

Each student is to submit an individual and independent electronic lab report for each experiment completed and the report must be accepted in order to obtain credit. Students are specifically prohibited from reference to lab reports prepared by other students or work performed in previous semesters in the preparation of their own reports. However, you are encouraged and expected to feel free to ask colleagues questions during lab and in the preparation of your reports. Never-the-less, **your submission must represent your own work.** Guidelines regarding AI use as is related to academic honesty are provided later in this document.

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	10:10-10:50
	11:00 - 11:50 Phy321 Astrophotography	11:00-11:50	11:00-11:50 Phy390	11:00-11:50
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>		

Schedule for Phy210, Phy240, and Phy241: Fall 2026

labs	Worksheet Number	Date	210: Cutnell: 8 th ed. Assignment Reading : Homework	240:Serway 4 th ed Assignment: Reading: homework
WRF Lab 00	Class Initialization	W August 19	Chapter 01: Units, vectors, math and trig	Chapter 01 Introduction and Vectors
	Worksheet 01 units trig	F August 21	Chapter 01:H01	Chapter 01:H01
	Worksheet 02 1d motion	M August 24	Chapter 02:H02: 1d motion	Chapter 02:H02 1d motion
WRF Lab 01: Forces & Vectors	Worksheet 03 free fall	W August 26	Chapter 02:H03	Chapter 02:H03
	Worksheet 04 2d motion1	F August 28 UQ01	Chapter 03:H04: 2d motion	Chapter 03:H04: 2d motion
	Worksheet 05a 2d motion2	M August 31	Chapter 03:H05	Chapter 03:H05
WRF Lab 02: Problems: 1 and 2D motion: SR1 due	Worksheet 05 2d motion2	W September 02	Chapter 03:H05	Chapter 03:H05
	Worksheet 06 force1, fbd	F September 04 UQ02	Chapter 04:H06: Forces, fbd	Chapter 04:H06 Forces, fbd
	Labor Day	M September 07		
WRF Lab 03: Planes & Friction	Worksheet 07 force 2, fbd	W September 09	Chapter 04:H07	Chapter 04:H07
	UnTest #1	F September 11		
	Test 1	M September 14		
WRF Lab 04: Atwood's, mechanical advantage, work & Energy: SR2 due	Worksheet 08 inclined plane	W September 16	Chapter 06:H08: work and energy	Chapter 06:H08 Energy and Energy Transfer
	Worksheet 09 inclined 2	F September 18 UQ03	Chapter 06: H09	Chapter 07:H09 Potential Energy
	Worksheet 10 energy 2	M September 21	Chapter 07:H10: impulse, momentum	Chapter 08:H10 Momentum and Collisions
WRF Lab 05: Centripetal Force & Hooke's Law	Worksheet 11 spring energy	W September 23	Chapter 07: H11	Chapter 08:H11
	Worksheet 12 collisions1	F September 25 UQ04	Chapter 05:H12: Uniform Circular Motion	Chapter 10:H12 Rotational Motion
	Worksheet 13 collisions2	M September 28	Chapter 08:H13: Rotational kinematics	Chapter 10:H13
WRF Lab 06: Static Equilibrium: SR3 due	Worksheet 14 ucm 1	W September 30	Chapter 08: H14	Chapter 10:H14
	Worksheet 15 acc frames	F October 02 UQ05	Chapter 09:H15: Rotational dynamics	Chapter 10:H15
	UnTest #2	M October 05		
W Lab: TBA	Test 2	W October 07		
	Hurkle-Durkle Day 1	R October 08		
	Hurkle-Durkle Day 2	F October 09		
	Worksheet 16 non ucm	M October 12		
WRF Lab 07: Simple Harmonic Oscillation	Worksheet 17: Rotate2 energy	W October 14	Chapter 09: H17	Chapter 10:H17
	Worksheet 18 Torque, L	F October 16 UQ06	Chapter 09: H18	Chapter 10:H18
	Worksheet 19 statics	M October 19	Chapter 10: H19 Simple Harmonic Oscillation	Chapter 12:H19 Oscillatory Motion
RF Lab: TBA	Service Day	W October 21		
	Worksheet 20 osc1:spring	F October 23 UQ07		
	Worksheet 21 osc2:pendulum	M October 26		
WRF Lab 08: Standing Waves and Vibrations	Worksheet 22 string waves1	W October 28	Chapter 16:H20 waves and sound	Chapter 13:H20 Mechanical Waves
	Worksheet 23:string waves2	F October 30 UQ08	Chapter 16:H21 waves and sound	Chapter 13:H21 Mechanical Waves
	Worksheet 24 sound waves	M November 02	Chapter 16:H22 waves and sound	Chapter 13:H22 Mechanical Waves
WRF Lab09: Archimedes' Principle & Pressure	Worksheet 25 beats, Doppler	W November 04	Chapter 16:H23	Chapter 13:H23
	UnTest #3	F November 06		
	Test 3	M November 09		
WRF Lab: TBA	Worksheet 27 therm 01	W November 11	Chapter 12: H24 Temperature and Heat	Chapter 16: H24:Temperature and the kinetic theory of gasses
	Worksheet 28 therm 02	F November 13 UQ09	Chapter 13:H25: transfer of heat	Chapter 16:H25
	Worksheet 29 therm 03	M November 16	Chapter 14:H26: IDG and kinetic theory	Chapter 17: H26:Energy in Thermal Processes: 1 st law of thermo
WRF Lab 10: Thermodynamics	Worksheet 30 therm 04	W November 18	Chapter 15::H27: thermodynamics	Chapter 18: H27: Heat Engines, Entropy, and the 2 nd law of thermo
	Worksheets 30, 26	F November 20 UQ10	Chapter 15: H28	Chapter 18:H28
	Worksheet 31 Fluids 1	M November 23	Chapter 11: H29: Fluids	15: H29:Fluid Mechanics Sections 15.1 - 15.4 Chapter 16:Fluid Mechanics: Sections 16.5-16.9
	Thanksgiving Break	Wed-Sun November 25-29		
	UnTest #4	M November 30		
[WRF No Lab]	Test 4	W December 02		
	Course Review / last day	F December 04		
	Final Exams	December 07 - 11		

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:

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

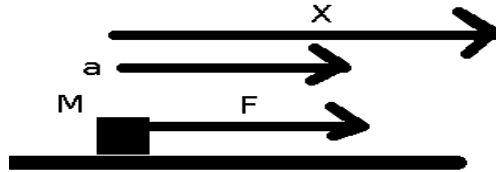
The test score is then determined by

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

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

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

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.

Student Learning Outcomes for the Physics Program at Lyon College FA2026

1. Students who complete the physics 210/220, 240/250, 241/251 sequence are able to

1a. Articulate the basic principles of physics.

1b. Apply the basic principles of physics to solve a variety of qualitative and quantitative problems at the introductory physics level.

This can be measured with portions of exam problems.

General Education learning outcomes for Phy 210/Phy240/ Phy241/Phy220/Phy250/Phy251

Critical thinking: 210,240,241,220,250,251

Inquiry and analysis: 241,251

Quantitative literacy: 210,240,241,220,250,251

Scientific thought and Information literacy: 210,240,241,220,250,251

Portions related to Phy:241,251 will be evaluated by percentage numbers of accepted labs. Students are allowed to submit revised reports. Portions related to Phy:210,240,220/250 rubric will have results recorded from exams.

Critical thinking is regularly evaluated in 210,240,241,220,250,251. It is evaluated in terms of starting with correct physical principles applicable to a given situation and being able to follow it through to completion. It is evaluated by use of exam problems. In 241/251, it is part of the process of scientific thought and is evidenced by use of supporting data for a hypothesis as is required by the lab rubric.

Inquiry and analysis is regularly evaluated in 241/251 as part of the required element of accepted lab writeups. It is evidenced by student explanation of the experiment and is a required element by the rubric.

Quantitative literacy is evidenced primarily in 210/240/220/250 by successful completion of physical problems with correct units and correct numerical operations. It is evaluated by use of exam problems. Quantitative literacy is exhibited in 241/251 by students being able to follow through with sample calculations sometimes partially enabled by spreadsheet examples and being able to interpret the results. This is evidenced by the accepted writeup and is a required element by the rubric.

Scientific thought and information literacy is regularly evaluated in 241/251 and is evidenced by use of hypothesis with supporting evidence (or not supporting evidence) based upon experiment as is required by the lab rubric. Information literacy is regularly evaluated in 241/251 and is evidenced by correct physics terminology in lab reports as required by the lab rubric. It is also a significant portion of 210/240/220/250 and is evidenced by student success in using the basic physical terminology enabling students to correctly initiate quantitative solutions to physical situations.

Scientific Reasoning FA26

For labs 01, (03+04), (05+06), a 1/2 page paragraph (and absolutely no more than 1/2 page paragraph and written with normal sized font) will be submitted. The schedule of due dates for these (3) paragraphs is shown in the table below. Note that for labs 3,4 and labs 5,6 the SR is a combined submission (of only one single paragraph which combines the ideas from both labs) where as for lab 01, there is a submission only covering lab01. **SR paragraphs are to be submitted separately from the lab report to the proper email address in pdf format only with the subject correctly provided as SR1, SR2 or SR3.** The total from this effort is 10 points in your final grade with the labs counting as shown below. Ultimately since you have 10 labs, you will receive 10 points total for each completed lab which is accepted when combined with the SR points. If the lab does not require a SR submission, the maximum of 10 points is awarded. For each lab which is not accepted, your final grade is reduced by one letter grade. If you fail to have more than 3 labs accepted, you will fail the course. **Note that rewrites of SR will not be permitted. Additionally, if no SR paragraphs are submitted, your final grade is reduced by 1 letter grade. Refer to AI usage guideline in preparation of SR paragraphs.**

Absolutely no labs will be accepted past the deadline of Friday December 04, 2026.

The table below shows the SR due dates. **No SR will be accepted past the due date.**

lab days L01	SR due data	Points: L/SR L01/SR1	lab days L03/L04	SR due data	Points: L03/L04/SR2	lab days L05/L06	SR due data	Points: L05/L06/SR3
Aug 26	Sept 02	8/2	Sept 09/16	Sept 30	8/8/4	Sept 23/30	Oct 07	8/8/4
Aug 27	Sept 03	8/2	Sept 10/17	Oct 01	8/8/4	Sept 24/Oct 1	Oct 08	8/8/4
Aug 28	Sept 04	8/2	Sept 11/18	Oct 02	8/8/4	Sept 23/Oct 2	Oct 09	8/8/4

In this Field of Inquiry, students explain the basic processes that govern the physical, chemical, and biological aspects of the natural world. Students will demonstrate an awareness of and respect for the breadth and diversity of human cultures, and their intersection with the natural world. Explain the basic processes and laws that govern the physical, chemical and biological aspects of the natural world.

The SR maximum score for a single report (lab01) is calculated as (score/12)*2.

The SR maximum score for a double report (lab 03+04, Lab 05+06) is calculated by (score/12)*4.

The rubric for grading the SR paragraphs is show below.

	3: Exceeds Expectations	2: Satisfactory	1: Beginning	0: No Evidence
Scientific Knowledge	Evaluates how knowledge evolves based on observation of the natural world	Describes how knowledge evolves based on observation of the natural world	Recognizes how knowledge evolves based on observation of the natural world	
Scientific Problem Solving	Evaluates a scientific principle or concept, discusses rationale for selecting the principle, and applies the principle to solve the problem	Describes the principle to solve the problem and reach valid conclusions	Attempts to solve a problem, but not enough steps are present or correctly applied, hindering conclusions	
Scientific Conclusions	Evaluates the validity of conclusions drawn from scientific data	Describes the validity of conclusions drawn from scientific data	Incompletely understands the validity of conclusions drawn from scientific data	
Real-World Application	Evaluates how everyday phenomena relate to scientific concepts	Describes how everyday phenomena relate to scientific concepts	Recognizes how everyday phenomena relate to scientific concepts	