

**Lab:**

Course Director:

Office location:

Office hours:

**Important Warning**

**You must read this document entirely. It is your responsibility to familiarize yourself with this course rules and regulations. If you have any questions, please ask as soon as possible.**

Physics 181 is a two-credit laboratory course. The co-requisite (or prerequisite) lecture course is Physics 113. All course material is posted on Physics 181 Blackboard site (<https://umb.umassonline.net>). Please check the blackboard page regularly during the semester for announcements and updates in Course Materials section.

**Object of the Laboratory**

- The laboratory course plays an important pedagogical role in the introductory physics sequence.
- This course provides tangible examples of the abstract concepts that are discussed in lecture; an opportunity to connect the theoretical with the real world.
- It also provides an opportunity to learn to effectively communicate difficult concepts and quantitative results and analysis.
- This laboratory teaches you how to extract meaningful insight from numerical data. We hope this course achieves these objectives and does so in a way that is fun.

**Schedule and Attendance**

- Each laboratory section meets once a week. You are expected to attend the laboratory during the lab time for your section.
- **Makeup is for medical emergency only and you need to provide doctor's note.** In such case you must inform your TA and Prof. ASAP so that they will provide the means to complete the experiment.
  - You cannot attend a section other than the one in which you are registered. TAs make note of their students and will not allow makeup students until or unless they have written permission from Prof.
- Also, there is no **make-up session at the end of the semester**. It is important that you complete your make up during the week the experiment you missed.
- Please be proactive in communicating about problems, as they are much easier to solve before the semester has ended and grades have been submitted to the registrar.

**Accommodations**

UMass Boston is committed to creating learning environments that are inclusive and accessible. If you have a personal circumstance that will impact your learning and performance in this class, please let me know as soon as possible, so we can discuss the best ways to meet your needs and the requirements of the course. If you have a documented disability, or would like guidance about navigating support services, contact the Ross Center for Disability Services by email ([ross.center@umb.edu](mailto:ross.center@umb.edu)), phone (617-287-7430), or in person (Campus Center, UL Room 211). To receive accommodations, students must be registered with the Ross Center and must request accommodations each semester that they are in attendance at UMass Boston. For more information visit: [www.rosscenter.umb.edu](http://www.rosscenter.umb.edu). Please note that the Ross Center will provide a letter for your instructor with information about your accommodation only and not about your specific disability. You must work with them if

you wish to modify the condition in which you take the lab exam.

### Email Policy

- Please use email only as a means to communicate about logistics (anticipated absences, scheduling concerns etc.) or brief clarifications, but not for lengthy scientific questions.
- Your TA is not expected to answer any scientific question on doing lab reports and pre-lab test via email.
- Your TA will not do mock grading and give the feedback. Instead, these concerns should be raised during office hours. Your TA is not required to check their email over the weekend.
- **Do not submit lab reports and pre-lab assignments via email.**

### Meeting TA

TA office hour schedule is available at the course blackboard page. It is best if you meet with your TA, but you are free to go to any TA during office hours. Another time that works very well to discuss issues and have questions answered is towards the end of the lab. Labs run for 2.5 hours. It is best not to discuss issues at the start of a lab or during the experiments, but once the lab work starts to finish up, your TA will have time to help you. Of course, you can ask questions relevant to the current experiment while that is happening.

### Preparation for the Laboratory

- All registered students will have access to Lab material that is posted on the course blackboard page.
- It is the responsibility of the student to print out all necessary materials (and complete any, if required) before coming to class.
- You are expected to have read the lab handout and be prepared for the experiment before coming to the laboratory.
- Your data analysis will be done on MS Excel. Google docs will not work.
- **Please note that food, candy and beverages are not allowed in the lab. Your TA is advised by the department that all the food and beverages that are brought into the lab be thrown away.**
- **Students are expected to clean their area when they leave the lab. Items left in the lab, as calculators, will be given to the physics office.**

### Pre-Lab Test

- For each experiment there is a pre-lab test. **It is worth 10% of your grade for that experiment.**
- The purpose of pre-lab tests is to help you to focus your reading of the lab handout and to prepare you for the analysis you will conduct during the lab itself.
- **The pre-lab will be posted on the blackboard site.**
- **You will have to complete the test and submit it at the beginning of the lab.**
- So, it is advised to go over the lab handout thoroughly before you take the prelab test.

### Quick Sheet

- At the end of each experiment, you need to fill out quick sheet to complete a summary of your lab results.
- It is your responsibility to submit the quick sheet before you leave the session.
- This quick sheet will provide a record of your attendance and **is worth 5% of your grade for that experiment.**

### Laboratory Reports

- A **typed laboratory report** is required for each experiment.
- The format of the lab report should not deviate from the guidelines. A sample lab report will be provided by

your TA.

- One of the objectives of the lab is that you learn to generate a lab report involving data analysis, computations and answers to questions on each experiment. You will cut down a considerable amount of time in doing a lab report if you complete your data computations during the lab period and have your work checked by the TA before you leave the lab. This requires the completion of the Quick Sheet.
- Each lab report should be unique, and not a copy of another person's work. Lab partners should only share data. Each must do their own report, as well as calculations.
- You will cut down a considerable amount of time in doing a lab report if you complete data computations during the lab period and have your work checked by the TA before you leave the lab.
- You must submit **two copies of each lab report (one electronic, one hard copy).**
  - An electronic copy of your lab report must be submitted on Blackboard. A portal is generated for this purpose. Note that there is a timeline for the lab report submission. After the due date this portal will be closed and won't be open.
  - A printed copy of your lab report must be handed in to your TA.

*The deadline for both copies is the same: Lab reports are due at the beginning of the following class period.*

*Hardy copy will not be graded if the report is not submitted online.*

*A late lab report will merit a minimum loss of 20 % a day. If either the online submission or the hard copy is late this penalty will apply.*

Comments will be provided for reports submitted more than five days late and the report will receive a grade of zero.
- **There will be no exception to this policy except for medical emergencies.** In such case you need e-mail your TA and the course director, Professor prior to class and send an electronic copy of your lab report to TA. You must then submit a hard copy at the earliest convenience. Also include, in this email, why your report is late.
- **Your TA may take off points for extremely messy or unorganized lab reports (if we are unable to read something, it is wrong). The first page of your lab report should include your name, section number and your TA's name, and all pages of your lab report should be stapled.**

### Academic Integrity and Student Code of Conduct

Education at UMass Boston is sustained by academic integrity. Academic integrity requires that all members of the campus community are honest, trustworthy, responsible, respectful, and fair in academic work at the university. As part of being educated here, students learn, exercise, increase, and uphold academic integrity. Academic integrity is essential within all classrooms, in the many spaces where academic work is carried out by all members of the UMass Boston community, and in our local and global communities where the value of this education fulfills its role as a public good. Students are expected to adhere to the Student Code of Conduct, including policies about academic integrity, delineated in the University of Massachusetts Boston Graduate Studies Bulletin, Undergraduate Catalog, and relevant program student handbook(s), linked at [www.umb.edu/academics/academic\\_integrity](http://www.umb.edu/academics/academic_integrity).

- **Students must always submit their own written work.**
- ***DON'T SUBMIT WORK THAT IS NOT YOUR OWN. This includes but is not limited to text downloaded from the internet, text produced by other students, and any text included in the course materials.***
- ***Work from previous semesters is also considered as plagiarism. Please check with Prof. on this matter.***

- ***If you submit work that is not your own, you will receive a “zero” grade and could be considered as violation of an academic integrity.*** This includes the pre-lab test.

- In case of copied worked, both parties may be held accountable.

### Grading Lab Reports

Your lab reports will be graded by your lab instructor (TA) on a scale of 0 to 100 points, broken down by sections of the report as follows: (the other 15 points come from the Quick Sheet (5 points), and the Pre-Lab test (10 points), as noted above.)

- × Title and Objectives/Purpose 5 points
- × Data with Appropriate Units and Error 15 points
- × Calculations and Analysis 30 points
- × Answers to Questions 30 points
- × Discussion 15 points
- × Results/Conclusion 5 points
- Calculations and formulas used must be shown. The instructor will indicate on your reports the reasons for loss of any points. If you cannot resolve a conflict with the instructor regarding grading, consult the course director.
- **Use office hours, and the period when lab time is finishing, to discuss grading concerns.**
- **A sample lab report is available for you to use as reference.**

### Exam

- During the semester, there will be two in-class, closed-book exams.
- They will contain questions from ALL the experiments that you have performed in the lab.
- These questions could be either asking you to make experimental measurements similar to the ones done in the lab and/or performing analysis and answer questions to the given data. Be sure to study the questions in the labs and pre-labs when preparing for the exam.
- To prepare for the exams, you should be able to do each and every experiment on your own in the lab.
- You will not be working with your lab partner when doing the exam.
- Also the exams cannot be offered at Ross Center. However we will meet Ross center's recommendations.

*No personal electronic devices are allowed during exams. This includes, but is not limited to, laptop computers, cell phones, smartwatches, headphones, and programmable calculators.*

*Regular non-programmable calculators are allowed.*

*If you are caught using any of the above-mentioned electronic devices, your TA will take our exam right away and you will be awarded “zero” for the exam. In case you have to use restroom during the exam, you have to surrender your Cell phone to TA. You cannot take them with you.*

*Finally, **NO MAKE-UP FOR THE EXAM.***

### Course Grade

The practical exams demonstrate your understanding of laboratory technique.

*If your average exam score is **between 25% and 35%** of the total available points, the highest score you can receive is D, regardless of lab report scores.*

*If your average exam score is **less than 25%** you will fail the course.*

*Missing four lab reports, or having four report grades of 0, will result in a failing grade.*

By completing all lab reports and achieving an average exam grade greater than 35%, your grade will be calculated as follows:

Prelabs	10%
Quick sheet	5%
Lab reports	55%
Exam 1	10%
Exam 2	20%

Your letter grade for the course will be based on the following:

Above 93.33 = A 80.00 – 83.32 = B- 66.66 – 69.99 = D+

90.00 – 93.32 = A- 76.66 – 79.99 = C+ 63.33 – 66.65 = D 86.66 – 89.99 = B+ 73.33 – 76.65 = C 60.00 – 63.32 = D 83.33 – 86.65 = B 70.00 – 73.32 = C- Below 60.00 = F Students should periodically ensure that all grades are accurately recorded by their TA during the semester.

For a number of students, the style of lab report required for this class is new. In light of that, the lowest grade from the first 3 labs will be dropped to reduce the impact of such learning curve on their grades.

**Note:** Given the facts that different TAs are teaching different sections, grades that students receive in different sections might be slightly different for the same or similar lab-report. The grade received at the end of the semester is not directly correlated to the amount of time and effort invested into the class but rather of your understanding of the materials covered as evidenced by the grades received on the lab reports and the exams. Furthermore, there is no direct correlation between grades in the physics lecture course and the physics lab course.

### Work Expectations

This is a course with 2 ½ hours of class time very week. A useful guideline for time invested in a class is two to three times the number of class hours. For this course that works out to be 5 to 7 ½ hours a week. The amount of time any individual student needs to invest will vary significantly around this expected range depending on background. In particular, foreign students, for whom English is not a first language, may need to invest significantly more time than other students to produce lab reports. Over the past two years the average amount of time students has spent per week outside of class is approximately six hours.

### Health, Wellbeing, and Success

We are still coming through the COVID-19 pandemic. Due to the emerging COVID-19 variants, all members of the UMass Boston community — students, faculty, and staff — as well as contractors and visitors are required to wear face coverings in public indoor spaces on the UMass Boston campus. The requirement applies to vaccinated and non-vaccinated individuals. Wearing a face covering is important for the health and safety of our community, and each of us has a responsibility to do our part. While on campus, if you notice someone without a face covering indoors, you should feel free to distance yourself to the extent possible or, if you are comfortable doing so, politely remind them of the university policy requiring face coverings for all individuals indoors. As an instructor, for classes on campus, I will remind all students about the indoor masking policy. I will ask students to leave class if they do not comply and I may also refer students to the Dean of Students. If a student refuses to wear a face covering and does not heed requests to comply with the policy, the UMass Boston Police Department may be called to assist. To safeguard your own health and safety as well as that of all students, staff, and faculty,

you are reminded that vaccinations are required for all faculty, staff, and students, with limited exceptions (see [www.umb.edu/healthservices/corona\\_virus\\_information/coronavirus\\_vaccination\\_requirements](http://www.umb.edu/healthservices/corona_virus_information/coronavirus_vaccination_requirements)). Following current public health guidance from the CDC and given the protection flowing from a highly vaccinated population, enhanced HVAC and air filtration systems, and the indoor face covering mandate, we have lifted the social distancing requirement. However, if you have symptoms of COVID-19, you should not come to campus. Flexibility and support will be provided for students in such situations and are addressed in this syllabus.

UMass Boston is a vibrant, multi-cultural, and inclusive institution committed to ensuring that all members of our diverse campus community are able to thrive and succeed. The university provides a wide variety of resources to support students' overall success. As we continue to deal with the evolving impacts of the COVID-19 pandemic, these resources are more important than ever.

- Are you in emotional distress? Call 617.287.5690 to speak with a licensed clinician 24/7 who can offer support, crisis recommendations, and assistance with finding resources.
- Have a campus question or issue? Use Here4U in the UMass Boston app or via [www.umb.edu/here4U](http://www.umb.edu/here4U).
- Want advice in navigating a university or life situation? Contact the Dean of Students Office at [www.umb.edu/deanofstudents](http://www.umb.edu/deanofstudents).
- Want to connect with housing and food insecurity support, student life groups and events, or recreation activities? Visit [www.umb.edu/life](http://www.umb.edu/life).
- Want to access resources specifically for immigrant-origin, DACA, TPS, and undocumented students? Visit [www.umb.edu/immigrant](http://www.umb.edu/immigrant).
- Looking for additional identity-based community support? Find more resources at [www.umb.edu/identity-support](http://www.umb.edu/identity-support)
- Want to make the most of your academic experience? Visit [www.umb.edu/academics/vpass/academic\\_support](http://www.umb.edu/academics/vpass/academic_support).
- Unable to attend class on a specific date or participate in an exam or class requirement due to a religious observance? Fill out the excused absence form (requires 2-weeks' notice) to request religious accommodation at [www.umb.edu/religiousabsence](http://www.umb.edu/religiousabsence).