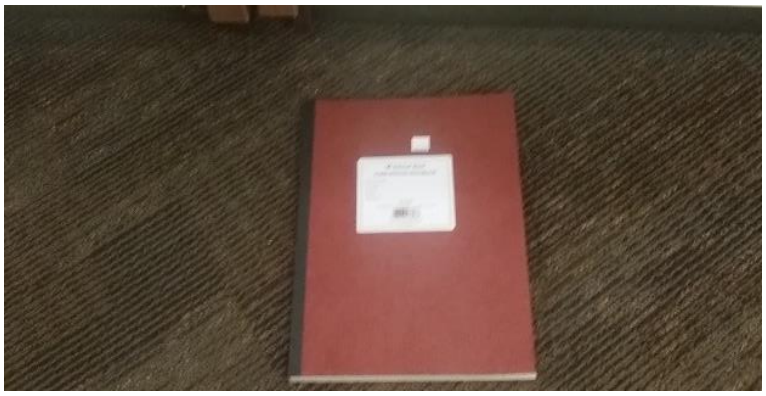
Physics 197, Laboratory Notebook Guidelines

The labs for Physics 197 are designed to be used with a standard laboratory notebook, National Brand 43-648 as shown below. This notebook has 156 oversized graph lined pages that allow for taping in standard size paper.



The labs themselves are designed to correspond roughly with a 16 week lecture course on Waves, Optics and Modern Physics. Miramar College uses University Physics by Young and Freedman, Edition 15 for this course in Spring, 2024. The first five weeks of the course typically cover Waves, the next five weeks typically cover Optics, and the final 6 weeks typically cover Modern Physics. Because the course combines two sections, each with its own 3 hour lab but a combined 4 hours of lecture, there is usually a holiday on one day during the semester. To account for the single day of lab available this year from missing President's day, students may make a hologram for extra credit on February 28 (Students in either section may attend).

Put your name on the outside front of the notebook. Then, on page 1 of the notebook, write "Table of Contents" at the top. Each of the 15 labs should be identified on a separate line throughout the semester. There needs to be a column for the lab title (for instance, "Lab 1, Traveling and Standing Waves"), then there needs to be a column for the page number where the lab starts, and then a column for the laboratory score (to be entered by the instructor). Students may use the Class Schedule from the Syllabus for the Table of Contents page. On the second page of the lab notebook, tape a copy of these Laboratory Notebook guidelines. There are plenty of pages in the notebook, so it is not a problem if a lab write-up takes 10 pages. Labs will be scored on a 100 point scale, with 20 points allocated to prelab activities, and 80 points allocated to the lab and the lab write-up. The general goal will be completion of the lab with adequate documentation. The instructor will grade the labs at the end of the period so that students will leave with their notebooks. If something isn't finished, or if something is documented or graphed improperly, the instructor will ask the student to go back and redo or finish an activity before the final lab notebook score is recorded.

The instructor considers a lab notebook to be a detailed record of exactly how an experiment was performed, what equipment was used, how the equipment was configured, what parameters relevant to the data were varied, what the raw data was, how calculations were performed to reduce the data, and what the results and conclusions of the experiment were. Proper graphical presentation is considered very important. The instructor's main goal is not just that you learn something from the lab activity and go through some procedures like following a cook-book recipe, but that you document your procedures, observations, data and conclusions in such a way that someone who was not familiar with what you are being asked to do could figure it out by reading your lab notebook. (If you are a graduate student or working engineer, this could be you three years later scratching your head about how exactly you obtained your data). Therefore, it is perfectly acceptable to tape in the list of equipment, photographs of an experimental apparatus, etc. that are provided in each week's laboratory procedure. (In fact, to save time, please tape in the first page of each lab hand out as the first page of your lab write-up). However, it is expected that students draw in their own layout diagrams and graphs, and provide written descriptions of procedures, data, and results. Finally, each laboratory write-up should end with a conclusion describing what the student learned by doing the lab.