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| **WINTHROP UNIVERSITY**  **Department of Chemistry, Physics, & Geology**   **Semester:** Fall 2020    **Course:**PHYS 201L - General Physics I Laboratory, Sims 205 and 207 **Credit hours:**0                 **Co-requisite:** [PHYS 201](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201/phys201home.html)  **Professor:** Dr. Ponn Maheswaranathan ([Mahes](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/personal/mahes.html)), Sims 213-B. **Office Hours:**T, W, R 10-11:30 AM or by appointment.    **Phone**: 323 4940, **E-mail**: [mahesp@winthrop.edu](mailto:mahesp@winthrop.edu)  **Textbook:**College Physics, by OpenStax, Free Online Textbook, [https://openstax.org/details/college-physics](https://openstax.org/details/college-physicshttps:/openstax.org/details/college-physics).  After the completion of the lab, you need to do a post-lab quiz, in the PHYS 201 BB page. This will carry 10% of the lab score. The lab report (created by inserting data tables, graphs, and conclusion in the electronic copy of the lab handout) is due through the PHYS 201L BB page, will carry 90% of the lab score.  **Guidelines for the in-person laboratory:**  1.   You must read the lab-handout and the relevant materials from the textbook before the lab period and be prepared for the laboratory.  2.   You need to wear mask and follow social distancing in the lab.  3.   The laboratory equipment will be placed in the lab-tables, leave them as you found them when you leave.  4.   You need to handle the equipment carefully, giving special attention when warranted.    Lab Schedule: | | |
| **Lab #** | **Lab Dates** | **Experiment** |
| 1 | 9: 2-3 | [Graphing with Excel](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Graphing%20PHYS201L.docx), Remote Lab |
| 2 | 9: 9-10 | [Density](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Density%20PHYS201L.docx), Remote Lab |
| 3 | 9: 16-17 | [Vectors](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Vectors%20PHYS201L.docx), Remote Lab |
| 4 | 9: 23-24 or 30-01 | [Data Collection with a PC](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/PCData%20PHYS201L.docx), In person |
| 5 | 9: 23-24 or 30-01 | [Friction](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Friction%20PHYS201L.docx), Remote Lab |
| 6 | 10: 7-8 | [Energy](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Energy.docx), Remote Lab |
| 7 | 10: 14-15 | [Ballistic Pendulum](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/BallisticPendulum%20PHYS201L.docx), Remote Lab |
| 8 | 10: 21-22 or 28-29 | [Torque](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/TORQUE%20PHYS201L.docx), Remote Lab |
| 9 | 10: 21-22 or 28-29 | [Rotational Motion](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/RotationalMotion%20PHYS201L.docx), In person |
| 10 | 11: 4-5 | [Archimedes' Principle](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Archimedes'%20Principle%20PHYS%20201L.docx), Remote Lab |
| 11 | 11: 11-12 | [Hooke's Law and SHM](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Hooke's%20law%20and%20SHM%20PHYS201L%20F2018.docx), Remote Lab |
| 12 | 11: 18-19 | [Vibrating String](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Vibratingstring%20PHYS201L%20F2018.docx), Remote Lab |
| 13 | 12:2-3 | [Speed of sound in air](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/Speed%20of%20Sound%20in%20Air%20PHYS201L.docx), Remote Lab |
| Please Do Course Evaluations for PHYS 201L | Course Codes:   W 2PM: 10554 W 5PM: 11079 R  8AM: 11115 Include W with your CWID. | [https://winthrop.qualtrics.com/jfe/form/xxxxxxxxxxxxx](https://winthrop.qualtrics.com/jfe/form/SV_879ptVYtua3C20d)  Upon completion of the survey, you will be provided with a screen acknowledging completion of the survey. Please take a screen-shot of this screen, and upload it in the PHYS 201L BB page. If you come across any problems, [clear the cookies](http://bohr.winthrop.edu/faculty/mahes/link_to_webpages/courses/phys201l/HowTo__Clearing%20Cookies%20in%20Browsers.pdf) from your browser and try. |
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How to write a conclusion?

\* Conclusion is the most important part of your lab write-up. It is a summary, about a page or two, depending on the number of data tables and graphs. You must write your own conclusion, after completing the data collection and analysis. The data tables and graphs must be inserted at appropriate places. The conclusion section is the part of the lab which is most important to check for student comprehension of the topic. Even though you do the lab and collect data as a group, you should write your own conclusion.

\* Conclusion should state things that are unique for your investigation which can be accomplished by including values of the experimentally determined physical quantities.  Just remember that you cannot write your conclusion without completing your experiments or investigations. General statements like "I have determined the densities of given solids" and "Human Error" are not acceptable.

Start your conclusion by re-stating the purpose with appropriate changes. Then you need to briefly state (don’t repeat procedure) how you conducted the experiment and collected the data. Continue this with summarizing your results, referring to the inserted data tables and graphs when appropriate, and answer the purpose. State things that are unique for your investigation, which can be accomplished by listing important values of the experimentally determined physical quantities. Then you need to discuss about some of the difficulties you had, errors and their possible causes (be specific, human error is not acceptable) and suggestions for improvement. Describe your reasoning using physics terminology and principles. You should explain as completely as possible what goes through your mind that leads you to your conclusion.