**CHECKLIST FOR LAB 8**

*[Note: This is the first page of your lab report. One person should check and certify]*

|  |  |
| --- | --- |
| **General Formatting Questions** | **Student Initial** |
| 1 | Do you have the same font and font size across the whole report? | [yes | no] |  |
| 2 | Is your report single-spaced?  | [yes | no] |  |
| 3 | Are your equations, tables and figures numbered?  | [yes | no] |  |
| 4 | Do your tables and figures have descriptive captions?  | [yes | no] |  |
| 5 | Did you describe all the parameters in the equations | [yes | no] |  |
| 6 | Did you refer to your equations, tables and figures in the report?  | [yes | no] |  |
| 7 | Did you include units for all your measurements?  | [yes | no] |  |
| **Letter of Transmittal** |  |
| 1 | Did you briefly discuss your results?  | [yes | no] |  |
| **Materials and Methods** |  |
| 1 | Is this section written in paragraphs? (not bullet points or numbers lists) | [yes | no] |  |
| 2 | Did you include a picture (taken by your team) of the apparatus? | [yes | no] |  |
| 3 | Did you re-type the equations in an equation editor? | [yes | no] |  |
| **Results and Discussion** |  |
| 1 | Did you refer to equations in your methods? (Do not show calculations)  | [yes | no] |  |
| 2 | Did you calculate the loss coefficients and friction factor?  | [yes | no] |  |
| 3 | Did you discuss any inconsistencies in your measurements?  | [yes | no] |  |
| 4 | Did you write discussion in paragraph format? (not question & answer format) | [yes | no] |  |
| **References** |  |
| 1 | Did you cite your references in text?  | [yes | no] |  |
| **Appendix** |  |
| 1 | Did you include a sample calculation? (typed out) | [yes | no] |  |
| 2 | Did you answer yes to all the questions above?  | [yes | no] |  |

**CERTIFICATION (one person per team only)**

1. I acknowledge that the checklist is a guideline for minimum requirements in this lab report. Meeting these requirements does not guarantee a 100% grade.
2. I affirm that I was able to go through the checklist items above and ensure that my team was able to produce a report that meets the above requirements.

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 DATE PRINTED NAME SIGNATURE

**TEMPLATE LAB REPORT 8**

*[This is provided as a guideline. Use this to write your lab report. Delete descriptive guides before you submit]*

[LAB NAME]

[TEAM MEMBER NAMES]

|  |  |
| --- | --- |
| Name | Section Contributed |
|  |  |
|  |  |
|  |  |
|  |  |

[DATE SUBMITTED]

Page 2

**Letter of Transmittal** –

*[Look at the example provided. Briefly explain the purpose of the experiment and some of the results you obtained]*

Page 3

1. **Objective**

*[State the objective of the experiment in your own words. Do not copy from lab handout]*

1. **Materials and Methods**

*[This experiment involves an experimental method as well as a numerical method to complete the data analysis. We will separate them into two sections, so your report is organized. Subsections need not be indented]*

*2.1 Experimental Procedure*

*[Explain the experimental process here in your own words in paragraph format. Show a picture of the experimental apparatus.]*

* 1. *Numerical Method*

*[Explain the numerical process here. This is where you discuss the equations for energy losses in fittings due to different types of fittings and the friction factor]*

*[Number your equations and explains all the terms. Please re-type your equations in an equation-editor and use subscripts and superscripts as necessary]*

1. **Results and Discussion**

*[Include your results from the experiment here. All your results should be in a table with the following columns: Trial #, Average Experimental Flowrate (Q), velocity, velocity head, Reynolds number, loss coefficient for all pipe fittings]*

*[Figure showing the Δh and V2/2g for each fitting]*

*[Do not include calculations in this section. Refer to the equations in Methods. For example: You could say - “The percentage error was calculated using Eq. X”]*

*[Discuss your results, and comment on the type of flow regime (laminar, turbulent). Explain the difference between major and minor losses]*

1. **Conclusions**

*[Summarize your report and explain what you learned from this process.]*

1. **References**

*[Your references should not include the lab handout or Wikipedia. Include reputable sources]*

*[Your references should be cited in-text. Do not include links without showing where you used them]*

**APPENDIX**

*[Include a sample calculation here.]*

*[Please type your calculations. Handwritten calculations are not accepted]*