**CHECKLIST FOR LAB 5**

*[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 compare the correction factor values with expected values in literature for orifice?  | [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 5**

*[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 velocity, discharge and the various correction factors.]*

*[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 #, Flowrate (Q), head (h)]*

*[Table showing the results for x and y for different trials]*

*[Figure showing the graph between x and* $\sqrt{yh}$*. Equation for trendline and R2 should be present]*

*[Figure showing the graph between Q and* $\sqrt{h}$*. Equation for trendline and R2 should be present]*

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

*[What are the Cd. Cv and Cc values? What are the ranges of these values in literature for an orifice? Explain any discrepancies and discuss the percentage of error. Where could the error be introduced?]*

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]*