Laboratory Report Rubric

Each item below is evaluated on the degree to which objectives have been achieved:

<table>
<thead>
<tr>
<th>Item</th>
<th>Description of exemplary work</th>
<th>Score (5 pts. max.)</th>
</tr>
</thead>
</table>
| Title/Abstract/Intro  | **Title** is descriptive, and not just “Experiment x.”  
**Abstract** is the “Cliff’s Notes” version of the entire report; it is complete, concise, and clear, and includes all of the following:  
What is the purpose of the report, and why are you performing the test?  
How did you measure the data (general technique, basic equipment or procedure)?  
What were the essential results (what numerical answers did you get)?  
What are the important conclusions of the work?  
**Introduction** (purpose) is stated completely. |                     |
| Procedure             | **Procedure** is thorough and complete, and includes all details necessary for a colleague to replicate the experiment.  
It is written in paragraph format, not a list of tasks.  
It is written in past tense, and not in imperative voice (i.e., a set of directions, such as “turn the motor on”).  
Includes a schematic diagram of the experiment. Apparatus is thoroughly described. |                     |
| Results               | **Results** are complete, technically correct, and include the following:  
All required table(s) of measured and calculated quantities.  
All required figures.  
All figures and tables are thoroughly described in words before presenting them.  
All important calculated results, quantities, and uncertainties are presented. |                     |
| Discussion x2         | **Discussion** is thorough, technically correct, and well thought out.  
Discussion is written in paragraph form, not a simple listing of answers or question-and-answer format.  
All required questions are answered correctly and demonstrate thorough understanding.  
Conclusions are justified; important results are judged for accuracy and physical significance (e.g., do magnitude, sign make sense?), and corroborated when possible (e.g., compare with textbook values).  
Work demonstrates physical insight into the problem being studied or the physical mechanisms that are revealed. |                     |
| Spreadsheets/Sample Calcs | **Spreadsheets** (if required) are clear, logical, and easy to follow.  
Columns of data, as well as constants, are labeled (and include symbols and units).  
Numbers do not show excessive significant figures.  
**Sample Calculations** are correct, complete, annotated, and easy to follow, like a standard homework solution.  
Calculations begin with general equations (symbolic form) and assumptions.  
Calculations include units and all unit conversions.  
Calculations describe thought process (e.g., why did you choose a given correlation, what the value of your calculated Reynolds number implies).  
Calculated values are commented on (e.g., significance of magnitude or sign of result, verify assumptions). |                     |
| Report Format/Organi- | Figures and tables are properly formatted (Guide to Writing Laboratory Reports).  
Figure titles are below the figure; table titles are above tables.  
Figures, tables, and diagrams are described in words, and referred to in text.  
Results section begins with a verbal description of results, not just a listing of data and charts.  
Writing is in proper tense: past tense when describing experiment procedure, present tense when describing experiment results (e.g., “the data show,” “pressure increases with time”)  
Writing is complete, accurate, and concise. Sample calculations are legible.  
Minimal grammatical or spelling errors.  
Writing contains no contractions, improper capitalization, or improper punctuation (e.g., no exclamation points!) |                     |
| zation/Style/Communi- |                                                                              |                     |
| cation                                                             |                                                                              |                     |

**Total Score (35 max.)**