

## I. Laboratory Report Elements

A laboratory report (shortly *a lab report*) is created using the following characteristics.

**1. Name, Title, Page Number, and Date:** Lab report document requires Name, Title, Page Number, and Dates. These are essential elements of formatting. Place your name or title with the page number in the header.

**2. Standard Formatting:** This document follows standard academic formatting guidelines. These include Times New Roman 12 pt Font. The text of lab report is single-spaced.

**3. Graphic Numbering:** This document uses visuals. Each graphic, such as: figures, tables, pictures, equations, etc, is labeled and numbered sequentially.

**4. Format:** The lab report follows the IMRD traditional report writing standard. It contains the following sections in this order: **I**ntroduction, **M**ethods, **R**esults, and **D**iscussion. Introduction provides background and the question addressed, methods describes how that question was answered, results show the resulting data from the experiment and discussion is the author's interpretation of those results. Often results and discussion are combined.

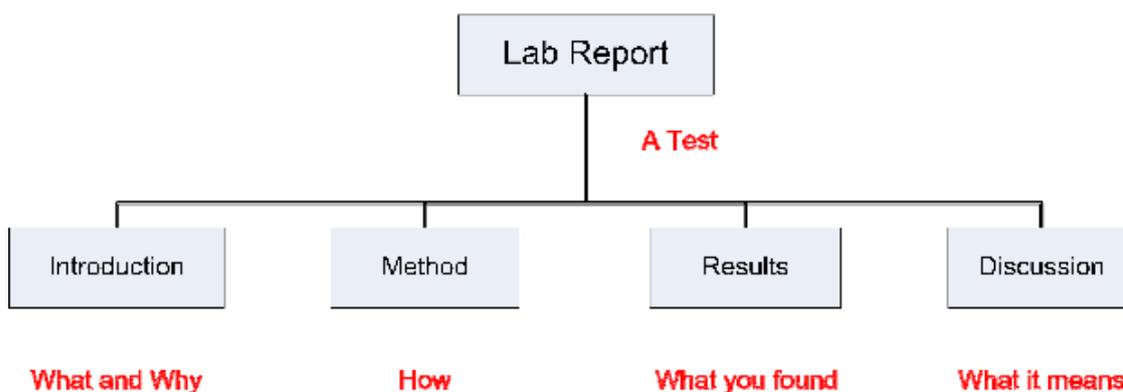
**5. Tense:** Technical writing varies its tense depending on what you are discussing. Tense should be consistent for each section you write.

### ➤ Past Tense

The lab report uses past tense. As a rule of thumb, past tense is used to describe work you did over the course of the report timeline.

### ➤ Present Tense

The lab report uses present tense. As a rule of thumb, present tense is used to describe knowledge and facts that were known before you started.



The lab report involves the solving of a specific question, described in the introduction and answered in the discussion.

## II. How to Write a Lab Report

Report Sections		Explanation
<b>Title Page</b>		
<b>Table of Contents</b>		
<b>Introduction</b>	<ul style="list-style-type: none"> <li>• Background/Theory</li> <li>• Purpose</li> <li>• Governing Equations Discovery and Question</li> </ul>	<p>In this section, <b>what</b> you are trying to find and <b>why</b> are describe.</p> <p>Background and motivation are used to provide the reader with a reason to read the report.</p>
<b>Methods</b>	<ul style="list-style-type: none"> <li>• Experiment</li> <li>• Overview Apparatus</li> <li>• Equipment Table</li> <li>• Procedures</li> </ul>	<p>In this section, <b>how</b> question addressed is answered, is explained.</p> <p>Clearly explain your work so it could be repeated.</p>
<b>Results</b>	<ul style="list-style-type: none"> <li>• Tables and Graphs</li> <li>• Equations in Variable</li> <li>• Form</li> <li>• Uncertainties and Error Analysis</li> <li>• Indicate Final Results</li> </ul>	<p>In this section, you present the <b>results</b> of your experiment. Tables, graphs, and equations are used to summarize the results. Link equations and visuals together.</p>
<b>Discussion</b>	<ul style="list-style-type: none"> <li>• Theoretical Comparison</li> <li>• Explanation of Anomalies/Error</li> <li>• Conclusion/Summary</li> </ul>	<p>In this section, you <b>explain</b> and <b>interpret</b> your results. Insert your opinion, backed by results. Discuss issues you had and how this could be corrected in the future.</p> <p>The conclusion is a summary of your results and discussion.</p>
<b>References</b>		
<b>Appendices</b> – Raw Data, Sample Calculations, Lab Notebook, etc.		