

## Lab Report Skills

By the end of Physics NYA, students are expected to have acquired the skills below. In subsequent semesters, students will be expected to demonstrate these skills when they prepare lab reports.

### A. Report Writing Skills

- Students must become familiar with the organization of a lab report as summarized in the Science Program Style Guide
- **Abstract** - Guidelines: 1. *Why did you do the experiment? (1 – 2 sentences),*  
 2. *Brief overview of what you did (N.B. NOT THE PROCEDURAL DETAILS!) (2 – 3 sentences),*  
 3. *Quantitative results as related to objective and brief summary of conclusions.*  
 ➤ One paragraph; present or past tense accepted.
- **Introduction** – Includes clear statement of lab’s Objectives and all relevant Theory
- **Data/Results** – Tables & graphs: see below.
- **Discussion/Analysis** - Interpret results & clarify implications. Emphasize clarity, brevity, specific reference to results (e.g. “Graph #1 shows ...”), use of paragraphs, proper grammar.
- **Conclusion** – BRIEF! Answer objective. Not a place for discussion or introduction of new information.

### B. Presentation/Computer skills

- subscripts, superscripts, italics, equation editor (e.g. no “/” for division, “^” for exponent, etc.)
- create graph in excel, get trendline
- format graph, display equation *with appropriate variables and significant figures.*
- produce a table

## General Physics Lab Skills

Taught in:	GRAPHING	TABLES	UNCERTAINTIES	LAB SKILL
<b>NYA</b>	<ul style="list-style-type: none"> <li>• use of a graph to establish a relationship</li> <li>• concept of ‘best-fit’ curve</li> </ul>	<ul style="list-style-type: none"> <li>• organize and present data in a table with headings and units.</li> </ul>	<ul style="list-style-type: none"> <li>• record data with reasonable sig figs.</li> <li>• recognize sources of uncertainty – teacher guidance</li> <li>• distinguish % deviation from % difference</li> </ul>	<ul style="list-style-type: none"> <li>• Careful data collection: manual and electronic</li> <li>• triple-beam balance</li> </ul>
<b>NYB</b>		<ul style="list-style-type: none"> <li>• use spreadsheet to perform repetitive calculations</li> </ul>		<ul style="list-style-type: none"> <li>• multimeter</li> <li>• construct a circuit</li> <li>• measure <math>V</math> and <math>I</math></li> </ul>
<b>NYC</b>	<ul style="list-style-type: none"> <li>• obtain parameters from non-linear relationships</li> </ul>		<ul style="list-style-type: none"> <li>• Error bars on graphs to determine uncertainty in slope</li> </ul>	<ul style="list-style-type: none"> <li>• Use spectrometer to determine <math>\lambda</math></li> <li>• Use various Vernier scales</li> </ul>