

---

**In-Lab Checkout**

The following items are worth 50% of the lab-report grade, and must be completed and signed off by a TA or instructor in the laboratory before starting the next experiment. These items, this grade sheet, plus any responses to TA/instructor input, should be turned in as part of the full lab report.

---

**Record Keeping**

Points \_\_\_\_/30

**In-class notes (5 pts.) 5 4 3 2 1 0**

- Notes are **original**, in-class notes.
- Notes are **easy to follow**: an outsider could tell what was being recorded and why.
- Notes are **complete**: operations or conditions that affect the interpretation or analysis of data are given.
- **First page** includes **name of experiment**, names of **all partners**, and **dates** beginning and ending experiment.
- Each page is **numbered** and **dated**.
- Notes are **neatly kept** and are recorded in **pen**.

**Apparatus diagrams and annotations (10 pts.) 10 8 6 4 2 0**

- The diagrams + annotations **succeed** in communicating **how the apparatus works** and **how it was used**.
- Diagrams are **functionally clear**: the diagrams would make sense to other students in the course.
- Diagrams are **correct** and **well annotated**, indicating the **use** and/or **function of each important component** and **sub-component**, **clear signal paths**, and **important physical features** (e.g. magnet orientation, important dimensions).
- Diagrams are **original drawings** taken from the apparatus itself, not merely copied from the instructions.

**Data (15 pts.) 15 13 11 9 7 5 3 1 0**

- **Raw data** are **correct**: no significant mistakes in collection of data. [Note – you should annotate corrected mistakes]
- The data set is **sufficient** to calculate **all important results** and **random uncertainty**.
- **Relevant conditions pertaining to data sets** (e.g., sample type, run number, equipment settings) are present.
- **Tables of data** include an **estimate of uncertainty** along with **reasons for assigning that uncertainty**.
- Raw data are **recorded neatly**, with **correct units**.
- **Copies** of original data (XY plots, computer printouts, tables, etc.) are **complete** and **annotated with information** describing the sample, conditions or other information pertaining to it.

---

**Preliminary Analysis and Results**

Points \_\_\_\_/20

**Data analysis (10 pts.) 10 8 6 4 2 0**

- **All classes of data** taken have at least one set **analyzed**. [All data sets must be analyzed in final report.]
- Analysis of data is **correct**, with correct units.
- **Plotting and fitting** of data to obtain results **is used** when appropriate.
- **All calculations** performed, in whatever manner (spreadsheets, code, by hand), are **fully and clearly** described with **annotations**. [Any computer code must be included in final report.]
- **Graphs** are at least **1/2 page** in size and **easy to read**: one could estimate data points from the graph itself.
- **Graphs follow these basic formatting conventions**: **Legends** are given for graphs with multiple data sets and/or curves; **data points** are **bare**—point symbols **not connected** with lines; when applicable points include **error bars**; theoretical **curves** and/or **fits** are shown as **lines** (not points); **axes** are labeled with **quantity** and correct **units**; there is a clear **title** explaining the graph's purpose.
- Spreadsheet **printouts** are **clearly laid out** with **labeled** columns and rows, including **quantities** and **units**.

**Uncertainty analysis and calculation (10 pts.) 10 8 6 4 2 0**

- **Uncertainty** is calculated for numerical results for at least one data set in each class of data. [full calculation to be included in final report].
- **Reasoning and method** used to derive uncertainty in final results is **clearly presented** and **correctly applied**.
- Uncertainty **calculations** themselves are clearly shown (either in entirety or with examples).