**SPH 4U CULMINATING TASK: LAB BOOK**

The lab book will be worth 5% of the final mark in SPH 4U. The lab book will be formally marked in the last three weeks of the course, but students will receive descriptive feedback on their progress throughout the semester.

For every lab activity, the lab book should contain:

* The **date** the experiment was performed, at the top of every page
* The **purpose** – you can copy this from the lab handout, it should be in a sentence
* The **accepted value / prediction** for the experiment – refer to your course notes to make the prediction, it should be in a sentence
* An explanation of “**why**” (this is similar to the **theory** section of a formal lab) – again, referring to your course notes, point form is fine, although it should be detailed
* Questions, concerns and changes to the **apparatus** and **procedure** – point form is fine
* Quantitative and qualitative **observations**, in an appropriate format (table) – graphs should be attached to the lab book (where applicable)
* Any necessary **calculations**, in an easy to read format, to the correct number of significant digits
* A list of **errors** and improvements, including any relevant error calculations – point form is fine
* Answers to **discussion** questions
* A **concluding statement** that answers the purpose

Other things to keep in mind:

* The purpose, accepted value, theory, apparatus and procedure, and observations table should be completed before starting the lab
* The lab book should be written in pen / permanent marker. Draw a line through any errors, do not use white out. A pencil may be used for calculations.
* The lab book is a record of the completion of the lab. It is to be completed as the lab progresses. It is not to be re-written as a good copy.
* No pages are to be removed from the lab book
* If you are absent on the day of a lab, you are still expected to complete the lab book. In addition to the date the lab was performed, please include the name of the person / people the results were borrowed from

**SPH 4U CULMINATING TASK – LAB BOOK RUBRIC**

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| **Categories** | **Level 0****0 – 49%**  | **Level 1****50 – 59%** | **Level 2****60 – 69%** | **Level 3****70 – 79%** | **Level 4****80 – 100%** |
| **Knowledge and Understanding of content**(Purpose, Accepted Value, “Why”, Apparatus, Procedure) | Does not demonstrate knowledge or understanding of content | Demonstrates limited knowledge and understanding of content | Demonstrates some knowledge and understanding of content | Demonstrates considerable knowledge and understanding of content | Demonstrates thorough knowledge and understanding of content |
| **Use of processing skills and strategies**(gathering evidence and data as Observations and Errors) | No evidence of the use of processing skills and strategies | Uses processing skills and strategies with limited effectiveness | Uses processing skills and strategies with some effectiveness | Uses processing skills and strategies with considerable effectiveness | Uses processing skills and strategies with a high degree of effectiveness |
| **Use of critical thinking processes, skills and strategies**(problem solving in Calculations, evaluating, forming and justifying Conclusion) | No evidence of the use of critical thinking processes, skills and strategies | Uses critical thinking processes, skills and strategies with limited effectiveness | Uses critical thinking processes, skills and strategies with some effectiveness | Uses critical thinking processes, skills, and strategies with considerable effectiveness | Uses critical thinking processes, skills and strategies with a high degree of effectiveness |
| **Making connections between science, technology, society and the environment**(when answering Discussion questions) | Does not make connections between science, technology, society and the environment | Makes connections between, science, technology, society and the environment with limited effectiveness | Makes connections between, science, technology, society and the environment with some effectiveness | Makes connections between, science, technology, society and the environment with considerable effectiveness | Makes connections between, science, technology, society and the environment with a high degree of effectiveness |
| **Expression and organization of ideas and information** (clear expression, logical organization, diagrams) | Expression and organization of ideas and information is so poor as to make the information unreadable | Expresses and organizes ideas and information with limited effectiveness | Expresses and organizes ideas and information with some effectiveness | Expresses and organizes ideas and information with considerable effectiveness | Expresses and organizes ideas and information with a high degree of effectiveness |
| **Use of conventions, vocabulary, and terminology of the discipline** (symbols, formulae, scientific notation, SI units) | Conventions, vocabulary and terminology of the discipline are not used | Uses conventions, vocabulary and terminology of the discipline with limited effectiveness | Uses conventions, vocabulary, and terminology of the discipline with some effectiveness | Uses conventions, vocabulary, and terminology of the discipline with considerable effectiveness | Uses conventions, vocabulary, and terminology of the discipline with a high degree of effectiveness |
| **Demonstrates appropriate scientific investigation skills**(the lab book is a ‘in the moment’ record of the completion of the lab and has not be re-written or edited) | Appropriate scientific investigation skills are not used | Appropriate scientific investigation skills are used with limited effectiveness | Appropriate scientific investigation skills are used with some effectiveness | Appropriate scientific investigation skills are used with considerable effectiveness | Appropriate scientific investigation skills are used with a high degree of effectiveness |