

This document provides you with information about the requirements for assessment. Detailed instructions and resources are included to help you to complete and submit the task. The Criterion Reference Assessment (CRA) Rubric that markers use to grade the assessment task is included and should be used as a guide when working on the assessment task.

ASSESSMENT OVERVIEW

Assessment name:	Report B (Millikan)
Description:	<p>This is an individual report. Each individual will submit a single report via blackboard.</p> <p>The report will summarize your findings on the e/m experiment providing an in depth analysis of the data and will contain the following sections: Abstract – Introduction – Materials and Methods – Results – Uncertainties - Discussion –Conclusions –References - Figures</p> <p>This report is focused on data fitting and error analysis. Each group will upload the raw results of the experiment at the end of the experimental session on the unit repository in blackboard, and will compare its own results with the average class results in the report.</p> <p>This is an authentic assessment because a scientific report it is how real world researchers report on the results of a real experiment.</p>
Due Date:	Refer to Blackboard

Length:	2000 words
Weighting to overall:	15%
Individual or Group:	Individual

How will I be assessed:	Refer to Qualitative rubric (7 – 1) (<i>attached</i>)
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Learning outcomes measured:	<ol style="list-style-type: none"> 1. Collection and analysis of data using scientific equipment during practical experiments in laboratory settings 2. Analysis, design and construction of instrumentation 3. Critical and creative reasoning and problem-solving techniques (using data acquired or provided) to evaluate results <p>Communicating scientific arguments relevant to professional practice by producing written scientific reports incorporating visual representations of scientific concepts and numeric data, including the generation of graphs.</p>
Moderation:	This assessment item will be moderated before marks are released.

ASSESSMENT DETAILS

What you need to do:	<p>After running the experiment and acquiring the data in the lab following the instructions you will need to deposit your dataset in the blackboard repository provided by the teaching team, to be shared with the class. At the end of the week you will collect the class data for a statistical analysis.</p> <p>Title: Title of the experiment</p> <p>Name: Your name, indicate your lab partners</p> <p>Abstract – A concise summary (100-150 words) of the major aspects of the entire report. It should include the aim, (very) brief method and outcome.</p> <p>Introduction – Establishes the context of the work being reported, typically by providing an overview of the theory and background information. The introduction should also state the aim of the study in the form of a hypothesis. This should also include the main equations used for analysis. References to the literature should be included where appropriate.</p> <p>Materials and Methods – In this section you clearly explain how you made your observations. Enough detail should be provided about the experimental protocols so that other scientists with a similar level of knowledge to yourself can repeat your experiments. It should be written in past tense. (Length will vary depending on experiment)</p> <p>Results – A description of your observations without interpretation or speculation. Data can be presented objectively in both text and illustrative examples such as summary tables and graphs. Full tables of</p>
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	<p>results should only be included as appendix. All data must be accompanied by the experimental error.</p> <p>Uncertainties: You should include a discussion about the sources of error in the experiment – and how they impacted your results. A full calculation of the error propagation is also required. Error propagation should be used where required to calculate the final error. A statistical analysis of the errors of the whole class is required.</p> <p>Discussion – Provides a forum to interpret the experimental data in light of the pre-existing knowledge. This is where you should compare your experimental results to expected values and if they fit within the experimental error. Other issues that may be covered in a discussion include questions raised by the study that require further analysis or inconsistencies between the current study and other relevant publications.</p> <p>Conclusions – A brief summary of your findings, with comments on the key points and suggestions on future work if required.</p> <p>References - Include appropriate references to the original papers or books reporting the theory and the results of similar experiments or findings. In physics journals, references are typically progressively numbered. For more info on how to number references see http://www.citewrite.qut.edu.au/cite/qutcite.jsp#numbered-journal-print</p> <p>Figures: Graphs needs to be clearly labelled, with axes and scales properly marked. Prefer the sans serif, more simple fonts (Arial, Calibri, Helvetica, etc) which are more clearly readable. Data points need to be clearly visible. Indicate the error with suitable error bars, and the fitting/theory with a continuous or dashed line.</p> <p>In the schematics of the apparatus the parts need to be clearly described by appropriate labels.</p> <p>Photos can be inserted, but only if they are important to the discussion.</p> <p>Every figure need to be accompanied by a figure caption, with progressive numbers.</p> <p>Format the figures so that they are fitting nicely in the page, and the layout is well balanced. Make sure that the text and the details in the figures are well visible after formatting. Make sure you do not distort the pictures when resizing.</p>
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What you need to submit:	<p>One Adobe PDF document or Microsoft Word document that contains the following items:</p> <ul style="list-style-type: none"> ▪ Assignment Cover Sheet – must include: unit code, unit name, assignment title, student name, student number and word count ▪ Your report ▪ A bibliography correctly formatted in QUT APA referencing for citing academic literature ▪ A scan of the lab book pages related to the experiment as appendix.
How to submit:	<p>This assessment task must be submitted in electronic format via Turnitin within QUT Blackboard by the due date. Only pdf files containing the whole report will be accepted.</p> <p><i>Disclaimer:</i> On submission you are declaring that, unless otherwise acknowledged, this submission is wholly yours and/or the group's own work. You understand that this work may be submitted for plagiarism check and consent to this taking place.</p>

Academic Integrity

As a student of the QUT academic community, you are asked to work to uphold the principles of academic integrity during your course of study. QUT sets expectations and responsibilities of students, more specifically it states that students are expected to adopt “an ethical approach to academic work and assessment in accordance with this policy and the Student Code of Conduct. E/2.1” (QUT Manual of Policies and Procedures C/5.3.3 Academic Integrity, Roles and responsibilities).

Students are expected to demonstrate their own understanding and thinking using the ideas provided by ‘others’ to support and inform their work, always making due acknowledgement to the source. While we encourage peer learning, it is not appropriate to share assignments with other students unless your assessment piece has been stated as being a group assignment. If you do share your assignment with another student, and they copy part of or all of your assignment for their submission, this is considered collusion and you may also be reported for academic misconduct. If you are unsure and need further information you can find this at http://www.mopp.qut.edu.au/C/C_05_03.jsp#C_05_03.03.mdoc.

ASSESSMENT RUBRIC

Criteria	7	6	5	4	3	2	1
Abstract 1. Exhaustive and synthetic summary 2. No jargon or acronyms 3. Correct length Marks: 10%	All criteria fully satisfied	All criteria fully satisfied with minor errors	Most criteria fully satisfied. Other criteria partially/no satisfied.	Most criteria satisfied with minor errors. Other criteria partially/no satisfied.	Some criteria fully satisfied. Other criteria partially/no satisfied.	Some criteria satisfied with minor errors. Other criteria partially/no satisfied.	No criteria fully satisfied
Introduction 1. Complete account of the scientific background to the experiment 2. Physics and formulas correct 3. Adequate and correct citations Marks: 20%	All criteria fully satisfied	All criteria fully satisfied with minor errors	Most criteria fully satisfied. Other criteria partially/no satisfied.	Most criteria satisfied with minor errors. Other criteria partially/no satisfied.	Some criteria fully satisfied. Other criteria partially/no satisfied.	Some criteria satisfied with minor errors. Other criteria partially/no satisfied.	No criteria fully satisfied
Materials and Methods 1. Complete and correct description of the methodology 2. Correct description of the apparatus 3. Clear drawings and pictures of the apparatus Marks:10%	All criteria fully satisfied	All criteria satisfied with minor errors	Most criteria fully satisfied. Other criteria partially/no satisfied.	Most criteria satisfied with minor errors. Other criteria partially/no satisfied.	Some criteria fully satisfied. Other criteria partially/no satisfied.	Some criteria satisfied with minor errors. Other criteria partially/no satisfied.	No criteria fully satisfied
Results 1. Calculation clearly set out with correct formulas 2. Values consistent with data substituted correctly into formulas 3. Clear and informative graphs including scales, labels and errors 4. Correct fitting procedure adopted 5. Data uploaded in the QUT repository Marks: 10%	All criteria fully satisfied	All criteria satisfied with minor errors	Most criteria fully satisfied. Other criteria partially/no satisfied.	Most criteria satisfied with minor errors. Other criteria partially/no satisfied.	Some criteria fully satisfied. Other criteria partially/no satisfied.	Some criteria satisfied with minor errors. Other criteria partially/no satisfied.	No criteria fully satisfied

Criteria	7	6	5	4	3	2	1
Uncertainties 1. Realistic uncertainty values stated or calculated 2. Correct uncertainty calculations clearly shown 3. Measurement errors correctly identified and discussed: random or systematic 4. Analysis of the statistical distribution of the full class dataset Marks: 20%	All criteria fully satisfied	All criteria satisfied with minor errors	Most criteria fully satisfied. Other criteria partially/no satisfied.	Most criteria satisfied with minor errors. Other criteria partially/no satisfied.	Some criteria fully satisfied. Other criteria partially/no satisfied.	Some criteria satisfied with minor errors. Other criteria partially/no satisfied.	No criteria fully satisfied
Discussion and conclusions 1. Correct discussion of the data 2. Correct link to the physics 3. Correct explanation of the phenomenon 4. Meaningful conclusions Marks: 20%	All criteria fully satisfied	All criteria satisfied with minor errors	Most criteria fully satisfied. Other criteria partially/no satisfied.	Most criteria satisfied with minor errors. Other criteria partially/no satisfied.	Some criteria fully satisfied. Other criteria partially/no satisfied.	Some criteria satisfied with minor errors. Other criteria partially/no satisfied.	No criteria fully satisfied
Presentation 1. Neat and clear organization of the report 2. Correct use of the English language 3. Correct punctuation 4. Simple and clear sentences Marks: 10%	All criteria fully satisfied	All criteria fully satisfied with minor errors.	Most criteria fully satisfied. Other criteria partially/no satisfied.	Most criteria satisfied with minor errors. Other criteria partially/no satisfied.	Some criteria fully satisfied. Other criteria partially/no satisfied.	Some criteria satisfied with minor errors. Other criteria partially/no satisfied.	No criteria fully satisfied

This rubric and grading scale is in accordance with the QUT Manual of Policies and Procedures (MOPP C/5.2.3 QUT Grading scale).