

Last Name	Name	Grade	Title Page, Clarity, Organization	FeedBack	Background and Objectives	FeedBack	Methods	Feedback	Results	Feedback	Error Analysis	Feedback	Discussion	FeedBack	Conclusion	FeedBack
		100	15		15		10	15		12.5		17.5		15		
		95	0		-3	(-1) Some equations presented in the Methods section can be incorporated in the Background. (-2) Didn't answer if the viscosity increases or decreases with temperature for gases.	0		0	Minor written mistake when you said you divided the SG by the density of the water instead of multiplying.	0		0		-2	Be more specific when answering the objectives of the lab. Include some comments about what did you learn.
		91	0		-3	(-2) Missing two other objectives stated in the lab guideline. Be careful with your hypothesis, probably you meant to say that the fluid was more dense than water? (-1) You answered the questions but didn't really explain why.	-2	Velocity(?) should not be in your free body diagram. Didn't describe what mg, Fd and Fb mean	-2	Be careful in equation 17, you include a velocity 0.0. Present also the mean value and standard deviation for your results.	0		0		-2	Use this to present a short summary of your findings. When answering the goals of the lab be more specific; if the goal was to compute the viscosity you need to present that value and explain its relative error. You can bring the main points of your discussion to this section.
		92	-0.5	Make sure you highlight your name in your title page.	-2	Missing two other objectives stated in the lab guideline.	-1	Buoyancy force acts in the opposite direction of the one you showed in your FBD	-2.5	Standard deviation of each variables should be presented (-2). Table 1 has some heading mistakes. I think the trials and diameters are switched (-0.5).	0		0		-2	Use this to present a short summary of your findings. Be specific when answering the goals of the lab: what is the viscosity of the fluid? What is the uncertainty? You can also reiterate the main points of your discussion.

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		100	15		15		10		15		12.5		17.5		15	
		85	0	-3	This should be an independent section. Bring the equations presented in the Discussion section to the Background, make sure you state the objectives of the lab and your hypothesis	-1	Buoyancy force acts in the opposite direction of the one you showed in your FBD	-4.0	The results of your calculations are missing from the results section, you are asked to present the mean value and standard deviation for each parameter. In the discussion section appears the results for only one ball bearing but you were supposed to compute the viscosity for all of them. Also, there must be a mistake when computing the adjusted viscosity because it shouldn't change that much from your first estimate. Putting your results from each step in a table might be helpful to keep track of your process.	-2	This should be an independent section. -2 Didn't estimate the error between the computed viscosity (w/o correction) and the textbook viscosity	-2	This is an independent section. You can move the results to the results and error analysis section. Here you should be able to discuss the errors obtained in your error analysis by referencing the previous work, that way it becomes easier to follow.	-3	This is an independent section. You can move the results to the results and error analysis section. Here you should be able to discuss the errors obtained in your error analysis by referencing the previous work, that way it becomes easier to follow.	Use this to present a short summary of your findings. Be specific when answering the goals of the lab: what is the viscosity of the fluid? What is the uncertainty? Instead of using words like "approximately" you can use your relative error to justify that it is close. You can also reiterate the main points of your discussion. Didn't sufficiently discuss how the experiment can be further improved to reduce uncertainties.

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		100	15		15		10		15		12.5		17.5		15		
		83	0		-4	(-2) Missing objectives and hypothesis. (-1) Remember to define all your variables. (-1) You need to provide more details in your background. Why the stokes equation is appropriate for this kind of experiment?	-2	The methods section should describe what was done to answer the research question, describe how it was done, justify the experimental design, and explain how the results were analyzed. What are the characteristics of the cylinder? What is the material of the ballbearings? What is the specific gravity of the fluid? Here you should define how you are obtaining your data. Missing force balance in FBD and definition of your variables.		Standard deviation are missing for the computed viscosity. There is an floating toolbar blocking the variables that you used for your calculations in your appendix C	-2.0		Missing sensitivity analysis.	-2	Didn't discuss how the experiment can be further improved to reduce uncertainties.	-3	Use this to present a short summary of your findings. Be specific when answering the goals of the lab: what is the viscosity of the fluid? What is the uncertainty? What did you learn. Draw your conclusions based on your objectives
		93.5	-0.5	All tables should have a caption.	-2	(-1) Equations presented in the results section should be included in the background instead. (-1) Missing one objective from the lab instructions	-2	Missing FBD. Missing force balance.	0		0		0		-2	Be more specific when answering the objectives of the lab, you can reiterate if it means answering the objectives. Include some comments about what did you learn, and ways to improve the experiment.	
		93.5	0		-0.5	Need to be more clear about your hypothesis.	0		-2.0	Standard deviation is missing for the computed viscosity.	0		-2	Didn't discuss sufficiently how the experiment can be further improved to reduce uncertainties.	-2	Be more specific when answering the objectives of the lab.	

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		100	15		15		10		15		12.5		17.5		15	
		95.5	0	-0.5	Missing hypothesis	0		-2.0	Standard deviation is missing for the computed parameters, including viscosity.	0		0		-2	Missing evaluation of hypothesis. Use this to present a short summary of your findings that are specific to answer the objective of the lab	
		95.5	0	-0.5	Make sure you define all your variables (Eq 1 and 2). Missing hypothesis	0		-2.0	Standard deviation is missing for the computed parameters, including viscosity.	0		0		-2	Missing evaluation of hypothesis. Use this to present a short summary of your findings that are specific to answer the objective of the lab	
		90	-1	Equations need to be numbered. All table should have captions.	-3	Remember to define all your variables (-1). Reference your equations and bring all the equations that you are using to get your results, to the Background section (-1). Make sure you state your hypothesis and objectives clearly (-1)	0		-2.0	Standard deviation is missing for the computed parameters, including viscosity.	0		-2	did not sufficiently discuss how to improve the experiment to reduce uncertainties	-2	Be more specific when answering the objectives of the lab. Include some comments about what did you learn.
		85	-0.5	Make sure you highlight your name in your title page.	-2.5	Make sure you state your hypothesis clearly (-0.5). Didn't show the units for viscosity properly (-1) Didn't discuss the temperature dependency for fluids and gases (-1)	-2	Missing FBD. Missing force balance.	-2.0	Standard deviation is missing for the computed viscosity.	-4	Missing sensitivity analysis	-2	did not sufficiently discuss how to improve the experiment to reduce uncertainties	-2	Be more specific when answering the objectives of the lab. Include some comments about what did you learn.

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		100	15		15		10	15		12.5		17.5		15		
		89	0	-2	Be careful when defining your objectives, use the lab instructions to define the objectives for the experiment. When introducing your equation you need to explain what they mean, for example why do you need to use Brenner's correction? What is the devide that you are using? Why a falling sphere can help you to define the viscosity of the fluid?	-2	Use the lab instructions to draw your methods. The purpose is not to replicate the same instructions but to explain how you are obtaining your data. Mentioning that you had to time the fall of each ball inside the cylinder, that you tested 9 different trials are relevant details that need to be included	-2.0	Mean and Standard deviation are missing for the computed viscosity and remaining parameters	-3	For the sensitivity analysis keep in mind that is the quantity that you are interested in that goes on the left hand side of the equation. Since you decided to use time as your variable with uncertainty, the velocity is the one directly affected and that correction translates to the viscosity. You could also have used the diameters, the distance inside the cylinder or even the densities. The error that you are obtaining is still in seconds, so it does not add to the viscosity as kg/m3	-2	Your estimations are correct, with some small differences. The error analysis is the one that is misleading but it can be fixed.	0		
		100	0	0	Great!	0		0		0		0	Make sure you include an independent discussion section.	0		
		93	-1	Equations need to be numbered	-3	Make sure you state your hypothesis clearly (-0.5). Missing two other objectives in the lab guide (-2). Didn't discuss the temperature dependency of viscosity, why is that true(-0.5)?	-1	missing equation for "Write the force balance assuming the sphere has reached terminal velocity"	-2.0	Standard deviation is missing for all parameters (required in the lab guide)	0		0	Great!	0	
		88	-0.5	All tables should have a caption.	-2	Missing two other objectives in the lab guide. Bring your hypothesis to the background.	0		-2.0	Standard deviation is missing for all parameters (required in the lab guide)	0		0		-7.5	No conclusions