

Faculty of Applied Sciences, Universiti Teknologi MARA, 40450 Shah Alam Selangor, MALAYSIA

CREATED BY ASSOC. PROF. DR JAAFAR JANTAN aka Dr JJ. <http://drjj.uitm.edu.my>. Initial Draft copyright DrJJ-FSG-UITM, April2011.**RUBRICS FOR ASSESSING LABORATORY PRACTICAL EXAM AND LAB-RELATED ASSESSMENT TASKS**

CRITERIA		STANDARDS				
		Superb: 4 (A+, A)	Going beyond 3 (A-, B+, B-)	Meeting the mark: 2 (C+, C)	Needs more work: 1 (C-,D)	Miss the mark: 0 (E,F)
PRACTICAL SKILLS	METHOD	All of the following were CLEARLY described: The steps or strategies used in sample preparation, the measurement tools selected, the experimental setup, the measurement or data collection techniques employed, the precautionary measures taken, the independent variables and dependent variables chosen.	Four of the following were clearly described and the other was disorganised: The steps or strategies used in sample preparation, the measurement tools selected, the experimental setup, the measurement or data collection techniques employed, the precautionary measures taken, the independent variables and dependent variables chosen.	Three of the following were clearly described while the others were quite disorganised.: The steps or strategies used in sample preparation, the measurement tools selected, the experimental setup, the measurement or data collection techniques employed, the precautionary measures taken, the independent variables and dependent variables chosen.	Most of the following were NOT CLEARLY described. :The steps or strategies used in sample preparation, the measurement tools selected, the experimental setup, the measurement or data collection techniques employed, the precautionary measures taken, the independent variables and dependent variables chosen.	Sample preparation strategies, measurement tools selected, the experimental setup, the measurement or data collection techniques employed, precautionary measures taken, independent and dependent variables chosen were NOT described or minimally described.
PRACTICAL SKILLS	DATA	Data collected is relevant and sufficient to answer the question. Data was tabulated in EXCEL. Each column was labeled with the appropriate quantity, units and prefixes (if required).	Data collected is relevant and sufficient to answer the question. Data was tabulated in EXCEL. Some columns were NOT labeled with the appropriate quantity, units and prefixes (if required).	Data collected is relevant and sufficient to answer the question. Data was tabulated in EXCEL. Columns were NOT labeled with the appropriate quantity, units and prefixes (if required).	Data collected is relevant and but NOT sufficient to answer the question. Data was tabulated in EXCEL. Columns were NOT labeled with the appropriate quantity, units and prefixes (if required).	Data collected was NOT relevant and NOT sufficient to answer the question. Data was tabulated in EXCEL. Columns were NOT labeled with the appropriate quantity, units and prefixes (if required).

Rubrics for Science Laboratory Skills
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PRACTICAL SKILLS	ANALYSIS	All collected data was transformed. Equation used to transform data is CLEARLY indicated in the cells. Data or transformed data is graphed where appropriate with the axis CLEARLY labeled along with the units and prefixes (if needed). Slope of initial graph, area under the graph, regression or best fit including regraphing of slopes obtained from each data point or other appropriate information is obtained/calculated and CLEARLY shown.	All collected data was transformed. Equation used to transform data was CLEARLY indicated in the cells. Data or transformed data was graphed where appropriate with the axis CLEARLY labeled along with the units and prefixes (if needed). Slope of initial graph, area under the graph, regression or best fit including regraphing of slopes obtained from each data point or other appropriate information is obtained/calculated.	All collected data was transformed. Equation used to transform data is CLEARLY indicated in the cells. Data or transformed data was graphed where appropriate but the axis, units and prefixes (if required) were NOT labeled. Slope of initial graph, area under the graph, regression or best fit including regraphing of slopes obtained from each data point or other appropriate information was NOT obtained/calculated.	All collected data was transformed. Equation used to transform data is CLEARLY indicated in the cells. Data or transformed data was NOT graphed. Slope of initial graph, area under the graph, regression or best fit including regraphing of slopes obtained from each data point or other appropriate information was NOT obtained/calculated.	Collected data is NOT transformed.
PRACTICAL SKILLS	Conclusion	Conclusion is EXCELLENT and derived from the collected and analysed data and not from other sources. Conclusion CLEARLY answers the research questions or problem statement/s.	Conclusion is GOOD and derived from the collected and analysed data and not from other sources and directly answer the research questions or problem statement/s.	Conclusion is GOOD and derived from the collected and analysed data and not from other sources but did not directly answering the research questions or problem statement/s.	Conclusion is derived from the collected and analysed data but is NOT answering the research questions or problem statement/s.	No attempt was made to conclude. Research questions were not answered.

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Teamwork		Team showed great cohesion, interaction respect. Team members shared the tasks equally and utilizing abilities of each team member. Tasks were completed on time and with great results.	Team showed great cohesion, interaction respect. Team members did not share the tasks equally and did not utilize abilities of each team member. Tasks were completed on time and with good results.	Team showed good cohesion, interaction respect. Team members did not share the tasks equally and did not utilize abilities of each team member. Tasks were completed on time with satisfactory results.	Team demonstrated some cohesion, interaction respect. Most work was done by only 1 member of the team. Tasks were completed on time but with unsatisfactory results.	Team showed poor cohesion and poor interaction & poor respect. Only 1 person did all the work. Tasks were NOT completed.

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PRACTICAL SKILLS: METHOD	Sample Preparation					
	Instruments/Devices Used					
	Experimental Setup					
	Data Collection Strategies					
	Dependent/Independent Variables Precautionary Measures					
PRACTICAL SKILLS: DATA	Raw data					
	Data Tabulation in EXCEL					
	Column labeling					
	Units labeling					
PRACTICAL SKILLS: ANALYSIS	Data is transformed					
	Equation for data transformation					
	Graphs					
	Axis labeling					
	Unit labeling Slope/Area/Regression					
PRACTICAL SKILLS: CONCLUSION	Use evidence from investigation					
	Answers research question					
TEAMWORK	Share responsibility					
	Cohesion/Interaction/respect					
	Completion of task					