General/University Physics Laboratory
Oral presentation grade sheet

Students’ names

Presentation should include the following

1. Introduction
   5: Correctly identifies all the group members, experiment(s), and date(s). Clearly and briefly states the objectives of the experiment(s) including the principles examined and the measurement(s) performed.
   4: Correctly identifies all the group members, experiment(s), and date(s). Gives long-winded and somewhat confusing statements for the objective of the experiment(s) including the principles examined and the measurements performed.
   3: Incorrectly or incompletely identifies group members, experiment(s), and date(s). Gives long-winded confusing and somewhat incorrect statements for the objectives of the experiment(s) including the principles examined and the measurement(s) performed.
   2: Incorrectly or incompletely identifies group members, experiment(s), and date(s). Gives confusing and/or somewhat incorrect statement(s) for the objectives of the experiment(s). Does not mention either the principles examined or the measurement performed.
   1: Incorrectly or incompletely identifies group members, experiment(s), and date(s). Does not mention neither the principles examined nor the measurement(s) performed. The introduction has almost been reduced to the title of the experiment(s).
   0: There is no introduction.

2. Theory behind the experiment
   14-15: Clearly and briefly explains the theory behind the experiment including the principles used and solving the equations using the appropriate level of details.
   12-13: Gives long-winded and somewhat confusing statement(s) for the principles used. Gives not enough or too many details in solving the equations involved.
   8-11: Gives too long or too short and somewhat incorrect statement(s) for the principles used and equations solved.
   4-7: Gives no information about basic principles used, says something about the equations not really solving them.
   1-3: Gives the final equation(s) without any explanation.
   0: There is no theory.

3. Experimental design (Apparatus and Experimental Procedures)
   14-15: Clearly and briefly explains what equipment was used and how it was put together. Presents a clear, easily visualized picture of the steps involved, understandable to a typical colleague, explicit enough to reproduce the experiment without being tediously long. Justifies the important steps, and (if appropriate) indicates steps that require exceptional care.
   12-13: Gives too lengthy and somewhat confusing description of the equipment and experimental procedures used. Indicates steps that required care. Goes into too many details.
   8-11: Gives too long or too short and somewhat incorrect description of the equipment used. Presents a possibly misleading picture of the steps involved, explicit enough to figure out the procedure. Possibly indicates steps that require care.
   4-7: Correctly lists all the equipment and gives some ideas of what was done with it.
   1-3: Gives somewhat incomplete list of equipment. No mention of procedure.
   0: There is no mention of experimental design.

4. Data
   9-10: Data are organized and sorted to show interesting patterns, includes column headings with variables and units and lists uncertainties. Calculated data are distinguished from measured data. Graphs are presented with axes labeled with variable name (and unit is given in parentheses). Data points are clearly displayed on graphs. A trendline is drawn (if appropriate); the equation of the trendline (slope and intercept) is given. The uncertainties for these slope and intercept are found as well.
   7-8: Data show interesting patterns and includes column headings with variables, units, and uncertainties. Calculated data are distinguished from measured data. Graphs have axes labeled. Data points are clearly displayed on graphs. A trendline is drawn (if appropriate); the equation of the trendline (slope and intercept) is given.
   5-6: Data may include column headings with variables, units, and/or uncertainties. Calculated data may be mixed with measured data. Graph axes are vaguely labeled. A trendline is drawn (if appropriate); the equation of the trendline (slope and intercept) is given.
   3-4: Data are shown without variable names, units, and/or uncertainties. Calculated data may be mixed with measured data. Graph axes are not labeled. Data points cannot be distinguished. The trendline and/or the equation of the trendline (slope and intercept) are missing.
   1-2: Data? We were supposed to include numbers? A graph is missing or drawn by a squirrel.
   0: No data.
5. **Analysis**

15: Patterns in the data are made explicit and related to predicted expectations based on the theory. The authors comment on the shape of the graph(s) and how that shape expresses the theoretical relationship. Comparable numbers are put in the same units and compared with %-difference or %-error (as appropriate) as well as a comment about overlapping uncertainties. Sources of uncertainty are tied to the values of uncertainty and the author considers what would happen to the results and the uncertainties, if one or more measurements had given a larger or smaller result.

Analysis implies the conclusions in a logical progression.

14-13: Patterns in the data are made explicit and related to predicted expectations based on the theory. The authors comment on the shape of the graph(s). Comparable numbers are put in the same units and compared with %difference or %error (as appropriate). Sources of uncertainty are tied to the values of uncertainty. Analysis implies the conclusions in a logical progression.

12-10: Patterns in the data are made explicit. The authors comment on the shape of the graph(s). Comparable numbers are compared with %-difference or %error (inappropriately). Sources of uncertainty are mentioned. Analysis leads the reader close to the conclusion.

9-7: Patterns in the data are mentioned, possibly with inconsistencies. The authors comment on the graph(s). Comparable numbers are compared. Some source of uncertainty is vaguely mentioned. Conclusion is drawn.

6-2: There is a somewhat vague reference to the data and the graph. An important number is mentioned. An attempt is made to transition to the conclusion.

1-0: Essentially comparable to “Our data is good and consistent with the theory.”

6. **Conclusion**

15: The brief discussion mentions which results could justify the theory, mentions what those results (with uncertainties) are, and compares them to what the theory says they should be. If multiple aspects of the analysis support (or detract from) the theory, then each is systematically addressed, clearly indicating the validity or invalidity of the theory. Finally, an overall conclusion is drawn indicating the general validity of the theory based on the analyzed data.

14-13: The discussion mentions results (with uncertainties) that could justify the theory and compares them to what the theory says they should be. If multiple aspects of the analysis support (or detract from) the theory, then some of these are addressed, indicating the validity or invalidity of the theory. Finally, an overall conclusion is drawn indicating the general validity of the theory based on the analyzed data.

12-10: The discussion mentions results (with uncertainties) and compares them to other quantities. If multiple aspects of the analysis support (or detract from) the theory, then at least one of these is addressed. An overall conclusion is drawn.

9-7: The discussion mentions results (possibly without uncertainties) and relates them vaguely to the theory. A possibly incorrect conclusion is drawn.

6-2: No results are mentioned and the conclusion seems unrelated to the important point of the exercise.

1-0: The authors draw a conclusion about the ease of the experiment, their ability to make a measurement.

7. **Organization of the presentation**

9-10: Obvious format, structure and connectivity between the parts. The appropriate visual aids are used if necessary.

7-8: Obvious format, structure and connectivity between the parts. Too heavy or too light on details.

5-6: Coherent format. Clear structure. Suitable connections.

3-4: Confusing format. Weak structure. Poor connection points.

1-2: Incoherent organization. No transitions.

0: There is no any organization. The entire presentation is the collection of unrelated, incomplete statements.

8. **Delivery**

9-10: Appropriate grammatically correct language. Eye contact with the audience. Natural movement. Confidence.

7-8: Appropriate grammatically correct language. Somewhat not confident.

5-6: Few grammatical mistakes. Somewhat not confident.

3-4: Grammatically correct but monotone reading from the paper.

1-2: Unrehearsed, grammatically incorrect reading from the paper.

0: Unrelated mixture of words

9. **Overall**

5: The presentation was very well done and truly reflected the experiment.

4: The presentation was good and somewhat reflected the experiment.

3: The presentation was not too bad, but had too many confusing points.

2: Only few points from this presentation were clear.

1: The presentation is completely confusing.

0: This presentation is a waste of time.