Time: \_\_\_\_\_\_ Section: \_\_\_\_\_\_  Group: \_A\_\_\_B\_\_\_C\_\_\_D\_

Lab title: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

\*Each of the following members has made significant contribution to this lab report and we agree to receive a grade as a group:

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

*Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

*Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_*

Name: \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_

Date: \_\_\_\_\_\_\_\_

***Grading Rubric***

|  |  |  |  |  |  |
| --- | --- | --- | --- | --- | --- |
| **Lab objectives** | **Methods and materials** | **Experimental results and data analysis** | **Discussion of the results** | **Conclusions** | **Writing** |
| **2 points** | **5 points** | **40 points** | **40 points** | **3 points** | **10 points** |
|  |  |  |  |  |  |

***Comments:***

**STRUCTURE OF THE LAB REPORT**

# 

# **A. Lab Objectives (*one short paragraph*)**

# It should state the problem and the technical questions you are addressing. Write what you are attempting and which methods you will use. Write it as a technical report, not as a class assignment.

# **B. Methods and Materials** (***one page, no photos, only diagrams if necessary***) **B.1. Methods.** This is the place where you briefly describe the equipment, selected parameters or setup, most important measurement steps, resolution, calibration (if applicable), cite corresponding ASTM documents, required test parameters and samples' type and dimensions. **B2. Materials.** Describe all materials which will be analyzed in your lab report. **Use table to list material’s chemical composition, type of processing, expected mechanical properties obtained from technical documents and ASTM with corresponding citations.**

# **C. Experimental Results and Data Analysis (*2-3 pages, or as needed*) C.1.** Equations, relations, definitions, graphswhich will be used for data analysis.

# **C.2.** Figures and/or Tables with raw data and results of their analyses. Prepare all this data within Excel sheets and then copy and paste it into a report. At the end summarize the main results in one table.

# - This section should present the outcomes, arranged in a logical sequence that is easy for a reader to follow. This is rarely the chronological sequence of what you did. - In a group report, be careful to combine each portion as a unified whole. It should not look like a last-minute cut & paste combining sections from everyone. - All tables must have informative **Title** at its top, and figures – **Caption** at its bottom. - Use, display or cite to “Methods” necessary equations, define all variables used in the calculations. - Results must be presented as mean value with standard deviations. Be careful about "significant figures" – don't display that, for example, the "fracture strength is **59.376596 MPa +/- 10 MPa**".

# **D. Discussion (*1-2 pages*)**

# **You must answer all the questions from the manual for this lab.**

# This is the second most important part of your report. This is where you tell the reader what your results mean and provide the technical rationale. How reliable is the data? Are the expected results obtained or not? How do these results compare with literature/technical data from other sources?

# Uncertainty is okay, unverified data is not okay.

# **E. Conclusions (*one short paragraph*)**

# Here you shortly repeat the conclusions that you formulated in the "Discussion" and summarize the results and analyses that supported them. You do so because your discussion is detailed and subordinates the conclusions to the analysis. Here, you focus on your conclusions. A "Conclusion" is a short statement of the important information in your Report. It is written for persons who have read the Report, synthesizing your conclusions for your readers as a convenience for them.

**References** (not mandatory but strongly recommended) are bibliographic citations of publications, ASTM documents and other materials actually cited in your report.

**Appendix.** If you have large amounts of tabulated data, or many images, you could put them in an appendix, and refer to them as "Appendix A", etc. Put what you consider essential information in your Appendices, but do not use them as undifferentiated data-dumps.

***Evaluation criteria of the report text*** *- clarity of communication, terminology, grammar, syntax, appropriate college-level academic tone.*