Common mistakes by students in engineering lab reports

1. Rhetorical knowledge
    a. Not clear about the purpose of the lab report (Reason: The instructor would like to see if the student has a clear idea of the audience-writer-purpose of the report.)
    b. Saying "I" or "we" too often. (Reason: Active voice might be important in humanities. In engineering, the work results should be focused rather than the performer of the work. It doesn't matter much who conducts work in engineering. This doesn't mean that you never use "I" or "we" in the report. What YOU or YOUR TEAM did is extremely unique, you can use "I" or "we" in the report to emphasize the ownership of the work.)
    c. Failure to provide the background/theory and context behind all the work that will be presented.
    d. Often students use procedure as background/theory.
    e. Use of extreme (and subjective) adjectives often: very, extremely, significantly, etc.
    f. Show your feeling: "This lab is unsuccessful." "I am glad the system works!" "Data make sense."
2. Organization
    a. Writing the report the night before it is due without any proper organization.
    b. Lack of proof-reading so one report seems to be the combination of many short write-ups.
    c. Including the experimental data in the methods/experimental section instead of results and discussion.
    d. Conclusion contains an extensive amount of discussion and/or no clear response to the lab report objectives.
3. Evidence
    a. Pick the sources from inappropriate places such as Wiki, About.com, etc., which anyone can update.
    b. Use irrelevant tables, figures or illustrations as evidence.
    c. Presentation of numerical information in non-tabular form.
    d. Not including the simulation code and its comments.
    e. Not explaining the logic of the code.
4. Critical thinking
    a. Putting the data (graphs, tables, etc.) without mentioning them in the text. (Reason: Often, students assume the reader is only faculty or TA who already knew the subject well, therefore they believe "let the data do the talking." Students need to synthesizes, analyzes, interprets, and evaluate all the data in the text form on the report.)
    b. Refusal to draw any conclusions from your data. (Just listing the data as is without analysis and interpretation)
    c. Make claims without relevant evidence.

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d. Use vague terms (close enough, very good, seems okay, make sense, etc.)
e. Putting a linear least squares line through your data even though the data appears to be non-linear, or vice versa.

5. Conventions
    a. No page number
    b. Titles and subtitles are not well-organized. (Reason: Titles not reflecting the content; giving procedure a results and discussion subtitle)
    c. Citations are not quoted in the text. (Reason: Thanks to information technology, anybody can access pretty much any source. The writer needs to specify which text on the report came from where clearly. If the writer doesn't specify the references in the text, it is a plagiarism.
    d. Use students' own citation styles. See your instructor's policy in citation. (Reason: Your audience expects some sort of standardized citation styles. Unlike humanities (MLA is most common), each engineering discourse communities use different formats of citation. APA or AMA formats are quite popular but not always. Ask your instructor which format she/he wants students to use.)
    e. Simply copy and paste a lot of digits from the calculations. (Reason: The average value of 10/3 equals 3.3333333333333… You are the one who determines if this is 3 or 3.3 or even 3.33333333. First, the number of digits depends on the lab equipment resolution. If the equipment provides up to thousandths 0.000, you may write the numbers up to thousands. Second, the digits need to match with the use of your data. Assume you obtain an average value of 3.3333333333333… grams from the measurements of multiple earphones when presenting your data to the customers. If you use 6 digits after the decimal point, the last digit becomes micrograms. Not many customers care that small weight for earphones. In this case, use of one or two digits after the decimal point meets the purpose of your data presentation.)
    f. Incorrect and inconsistent titling of figures and tables (Tables are labeled at the top and Figures are labeled beneath the figures.)
    g. Add graph axes not labeled, or without correct units, or illegible.
    h. Lack of proofreading: Check for typos, spelling errors, punctuation problems, formatting issues, and grammatical mistakes.