This includes style, comprehensiveness and writing mechanics (spelling, punctuation, etc.).

Lab Reports – General Information

All lab reports should be submitted bound in a "bend tab" binder. A copy of the handout instructions should be *under* each report in your folder, so that the grader (and the student) can refer to it easily. The lab reports shall be in inverse order in your folder, with the latest report on top. The following list of DOs and DON'Ts apply to both Formal and Informal lab reports:

Drawings – All drawings (schematics) must be neat. Freehand drawings will result in point deductions. For example, a curve can be drawn free-handed or with the assistance of a French curve, when possible, but axes cannot. If the graphed line is a straight line, it must be drawn with a straight edge.

Grammar – Spelling, punctuation, and other grammatical errors will be marked and deducted. Do no use slang expressions (right on, way off, pretty close, etc.).

Graphs – All graphs must be neat (no freehand drawings). Axis scaling should be logical (e.g., a scale of 0.25V/division is OK, but 0.2319V/division is not). The axes should be labeled with the name and units (e.g., Armature Voltage in Volts). Each graph should have a descriptive title. If you draw the graph in landscape (i.e., with the paper turned sideways), you must orient it so that the three hole punch is at the top. Be sure to position the graph so that none of it is hidden by the binding. Parts of the graph under the binding are considered to be missing when graded.

Typeface – If the writing in the report is hand printed, use both upper and lower case letters as appropriate. Points will be deducted for reports written in all upper case. Write only on one side of the page. If typed (preferred), use 12 point courier, sans serif, or arial, double spaced with 1" margins on all sides.

Collaboration – Each student must do his/her own work. Computer-generated graphics may be shared, but title pages, writing and calculations must be your own work.

Late Papers – Five points per day will be deducted for late papers. Reports over 2 weeks late will not be accepted.

Accuracy – Be precise. Say "The measurement differed from the calculated value by 3%" rather than "Our measured values were very accurate." Descriptors such as very, mostly, not very , almost, not quite, and others add nothing to a lab report because they leave interpretation up to the reader.

Lab Reports - Informal:

Informal Reports should be neat; however, being type-written is not a requirement. They must have a cover page as described below. Informal reports will be checked and

graded at the time formal reports are submitted. Place the informal report, with a copy of the handout instructions under it, in your laboratory report folder, latest report on top.

Informal lab reports should contain the following material:

Calculations - Complete any calculations or analysis asked for in the handout instructions.

Graphs – Prepare any graphs requested in the handout instructions in pencil on engineer's graph paper

Answers to Questions – Prepare and identify properly any answers to questions, discussion, or comments requested in the handout instructions. The answers should be legible, but need not be printed or typed.

Lab Reports - Formal:

Each student will submit a total of four formal laboratory reports. The report numbers that will be in a formal format will be designated in the course syllabus. The lab reports shall be in inverse order in your folder, with the latest report on top.

Report Sections - Formal lab reports should contain the following sections:

Cover page – "EET 365 Electrical Power and Machinery Laboratory," name, lab title, date, names of lab partners.

Title Page - The title page contains the report title, your name, date and course number. The date is the due-date, not the date the report was prepared.
(Refer to Appendix B: Sample Report, first page, unnumbered)

Abstract page – A separate page, single spaced type, containing a few sentences defining what is in the paper. The abstract page is page 1. Nothing else goes on this page except the abstract. The title "ABSTRACT" is vertically indented one additional inch below the top margin, for a total of 2 inches.

The abstract is a one-paragraph synopsis of the report.
(Refer to Appendix B: Sample Report, Page 1 of 10)

Introduction – A few sentences describing the purpose (basis) of the experiment. This can include equations used in the experiment. For example, "Experiment 7 investigates the characteristics of the single-phase capacitor start motor. Parameters to be measured include torque versus speed, armature current, and starting torque. The equipment required for the experiment includes a capacitor start motor, dynamometer, DC loads, strobotachometer, rotor locking device, and various voltmeters, ammeters, and wattmeters."

Procedure – A description of what was done, how measurements were made, what instruments were used for each measurement. This should contain enough detail that the experiment could be repeated using your written procedure alone.

Summary and Conclusions – this is requested in the "Presentation of Results" section of the lab assignment, but it actually should be a separate section of the report. Include general conclusions, problems encountered, assumptions made, if necessary. In this section, you should answer the questions in the *Presentation of Results* section of the lab assignment sheet.
(Refer to Appendix B: Sample Report, Page 7 of 10)

Major Headings - Major headings break the paper into logical pieces. The heading should stand-out from the other text by either bolding or underlining it.
(Refer to Appendix B: Sample Report, Pages 2-5 of 10)

Equations - Equations must be sequentially numbered. The equation number should be in parentheses and located against the right margin.
(Refer to Appendix B: Sample Report, Page 2 of 10)

Figures - Figures should be sized so that components are roughly 1/2" to 1" in length. Sizing too small makes the figure difficult to read and sizing too large makes it look ametuerish. As a good rule of thumb, size them similar to those that you would find in a textbook.

Figures should be horizontally centered between the margins.

Each figure must have a figure number and a title. Locate it centered below the figure as shown here. Schematic figures may be clipboarded/copied from PSpice or any other available drafting program.

If you wish, a figure can be embedded in the text pages of the report. If this is done, it should be centered between paragraphs and immediately after the paragraph in which it is first referenced (unless the page break makes this impossible).
(Refer to Appendix B: Sample Report, Page 8 of 10)

Graphs - Graphs should be sized to make them readable. If you wish to make it large, turn it 90 degrees counterclockwise on the page as shown here.

Some graphing software will not allow the title to be below the graph. In this case, the figure number and title should be centered above the graph.

Label the scale of both axes and give each axis a title showing what the axis represents and the unit of measure.

If you are graphing experimental data points, mark them with a circle or "X" on the curve.
(Refer to Appendix B: Sample Report, Page 9 of 10)

Tables - Tables should have a table number and title centered below the table. Each column in the table must have a heading showing what type of data appears in the column. The units (if any) for the data in the table may appear either with the data, or in the heading, or both.

Tables should be horizontally centered between the margins.

If you wish, a table can be embedded in the text pages of the report. If this is done, it should be located between paragraphs and immediately after the paragraph in which it is first referenced (unless the page break makes this impossible).
(Refer to Appendix B: Sample Report, Page 10 of 10)

Margins and Fonts - In general, the report has 1" margins on all four sides and is double spaced. You may use any standard font (courier, san-serif, arial, etc). Avoid fancy fonts such as script, gothic, technical).
(Refer to Appendix B: Sample Report)

Grammar and Spelling - Use a spell checker. Additionally, although grammar checkers don't perform well on technical papers, they will catch sentence fragments, run-ons, and punctuation errors. They will also tell you that there is too much jargon in the paper. However, it is a technical paper - it is supposed to have jargon.

Most Common Report Errors:

- Some of your text, figure, or graph is hidden under the binding.
- On a plot, you simply connect the data points with straight lines. These should all be smooth curves. If you have a bad data point (that obviously is off the curve), do not bend the curve to force it to fit. A French curve helps in drawing smooth curves.
- Orienting a landscape page so that when the booklet is held with the binding at the top, the page is upside down.
- Missing "Summary and Conclusions" in a formal report.
- Common grammatical errors: Using the pronouns "I," "we," or "you;" run-on sentences; slang; overuse of capitalization and contractions.
- Using non-descriptive adjectives such as "almost," "nearly," "very close," "not far." Saying "The result was very close to the calculated value" conveys no quantitative meaning. Instead, say "The result of 525 milliamperes was 3% below the calculated value."
- Every graph must have a grid (If you are using Excel or Quattro, don't forget to switch on the grid! ... both of them.); a descriptive title ("Lab 8, P3" is a title, but it

is not descriptive); and be labeled correctly. Be sure to submit only the required graphs. Graphs submitted that are not requested will be graded also. Each graph must have a unique title. For example, in Lab 8, naming them all "Lab 8 Graph" is not acceptable.

- Writing on the back of a page will result in two deductions because a) you have written on the back, and b) any material on the back of a page is considered to be missing.