Grading Rubric for CMP 150 Lab Problem Sets

This document gives the general outline for how grades are assigned to Lab Problem Sets in CMP 150, the team-based problems worked on in the class meetings.

Lab Problem Sets are worth 50 points each. Those points are broken into two parts:

- 10 points for a rough draft of the team's problem solutions, which are due at the end of the Wednesday class meeting in which they are assigned.
- 40 points for the completed package of materials, due by 11:00 PM of the Thursday following the class meeting.

Rough Draft Grading Rubric

The rough draft is graded mainly on the basis of **effort** and **reasonable completeness**. Specifically:

- 2 points are awarded for handing in anything at all, provided there is a nonzero amount of work that is pertinent to some portion of the problem set. Basically your team earns 2 points if it shows up, breathes, and gets SOMETHING done during the class period.
- The remaining 8 points are assessed as follows:

Description	**Points**	**Characteristics**
Excellent	8	Substantial progress is made on all the problems to solve.
Good	6	Substantial progress is made on at least half of the problems to solve.
Fair	4	Some meaningful progress (but not what you'd call "substantial") is made on at least half of the problems to solve.
Poor	2	Meaningful progress is made on fewer than half of the problems to solve, but more progress than just the minimal amount that earns the initial 2 points.

Note that complete solutions are NOT needed by the end of the class, nor does your work even need to be correct. Even if you have a complete solution and then want to make changes, that's OK. Again, this stage of the problem set is based on effort and completeness, not correctness.

If you do not turn in any further work on the Lab Problem Sets before 11:00 PM Thursday, it will be assumed that what you turn in at the end of the class period is both your rough AND final draft, and it will be graded accordingly. You might choose not to hand anything in after the class period on purpose, because you feel that you have a completed set of work. If so, again, what you submit will be considered both the rough and final draft.

Final Package Grading Rubric

Lab Problem Sets always consist of some combination of M-files, graphical objects (for example, PDF's of plots), and verbal responses to questions (usually typed up in a word processor or included as comments in an M-file). The final package from a Lab Problem Set is graded on four main criteria:

- Correctness, which refers to the extent to which M-files produce correct output, graphs represent data or functions correctly, and verbal responses are correctly reasoned.
- Specifications, which refers to the extent to which M-files, graphs, and verbal responses deliver what they are supposed to deliver. Note that this is different from Correctness; an M-file can produce correct results but not in the way specified by the problem statement, and vice versa, an M-file can meet specifications but contain some errors that affect accuracy.
- Readability, which refers to the extent to which code in an M-file is well-organized and human-readable; graphs are plotted in conformity to professional rules for plots; and verbal responses are given with good organization and explanatory value.
- Efficiency, which refers to the extent to which code in an M-file is written without extraneous effort or computation; graphs are plotted to focus on the most important graphical information; and verbal responses are written concisely and with precision.

Each of these four criteria are evaluated on a 10-point scale, using the following guidelines. Note that typically a complete effort on a Lab Problem Set will earn at least 4 points on each criterion. Only in the cases of incompleteness or critical failures will work earn less than this.

Correctness:

Label	Points	Description
Excellent	10	M-files execute without syntax errors and produce correct results throughout. Graphs correctly represent the data or functions they are supposed to represent. Verbal responses contain no grammatical or spelling errors, and verbal arguments are correctly reasoned.
Good	8	M-files execute without syntax errors. One or two errors in M-file output, graphs, or verbal responses are present.
Fair	6	M-files execute without syntax errors. Multiple errors in M-file output, graphs, or verbal responses are present.
Poor	4	M-files execute without syntax errors, but there are numerous errors in M-file output, graphs, and/or verbal responses.

Note: If a Final Package contains an M-file that gives a syntax error when executed, t**he entire final package will receive a 0 on Correctness.** Make sure your M-files do not produce syntax errors before you turn them in!

Specifications:

Label	Points	Description
Excellent	10	M-files produce all the results asked for in the problem statement in the ways specified and are displayed properly. Graphs focus on the information addressed in the problem. Verbal responses answer the questions being asked in a direct way.
Good	8	M-files produce most the results asked for in the problem statement and are displayed properly. Graphs draw attention to the information addressed in the problem, with some extraneous information. Verbal responses answer most of the questions being asked in a direct way, or all of the questions being asked in a somewhat roundabout way.
Fair	6	M-files produce results that are not displayed properly or which do not meet most of the specifications of the problem. Graphs address but do not focus on the information being addressed in the problem. Verbal responses answer the questions but not in a direct and clear way.
Poor	4	M-files do not produce the results asked for. Graphs do not display the information being addressed in the problem. Verbal responses are vague and do not answer the questions being asked.

Readability:

Label	Points	Description
Excellent	10	M-files are titled correctly and contain useful human-readable comments, and the code in the M-file is readable. Graphs conform to the professional plotting standards discussed in class. Verbal responses are organized in a clear and logical way.
Good	8	M-files are titled correctly and contain comments, and the code is fairly easy to read. Graphs conform to most of the professional plotting standards discussed in class. Verbal responses are somewhat well-organized and logical.
Fair	6	M-files are titled correctly, but the code is only readable by someone who already knows what it is supposed to be doing. Graphs lack several of the professional plotting standards. Verbal responses show an attempt at organization and logic.
Poor	4	M-files are not titled correctly; or the code in an M-file is poorly organized and difficult to read. Graphs lack most of the professional plotting standards. Verbal responses are disorganized or illogical.

Efficiency:

Label	Points	Description
Excellent	10	M-files contain code that is extremely efficient (i.e., does what it is supposed to do with a minimal amount of effort) without sacrificing readability. Graphs focus on the most important features of the data being plotted and do not contain extraneous space or objects. Verbal responses get to the point quickly and make the point without unnecessary argumentation.
Good	8	M-files contain code that is fairly efficient without sacrificing readability. Graphs focus on the most important features of the data being plotted with little extraneous space or objects. Verbal responses are fairly concise.
Fair	6	M-files contain code that is mainly brute-force and unnecessarily long. Graphs contain enough extraneous space or objects to be distracting. Verbal responses get to the point eventually.
Poor	4	M-files contain code that appears to be simply patched together and is much longer than necessary. Graphs show so much unnecessary space or objects that it is hard to find the information we are supposed to find. Verbal responses meander and include much more writing than is necessary.