

Post-Lab Meeting Scoring Rubrics

Lab scores in this course will be based on criteria clearly stated in the lab handouts. A large portion of each score will be determined by the quality of the demonstration of a circuit or test procedure that your group designs or develops and/or responses to prompts listed in the lab handout that take place in meetings scheduled after the formal lab sessions. The post-lab meetings in this course are meant to mimic interactions in the engineering profession in which supervisors, clients, or funding agency representatives view an actual or proposed solution to a problem. Presentations are effective only if they offer clear and concise explanations supported by high-quality visual aids.

During your post-lab presentations, I will be looking for:

- Application of sound design principles in a completely (or at least mostly) intentional manner with little to no reliance on trial-and-error.
- Significant engagement by you and your lab partners in the lab activity and full comprehension of the fundamental principles by everyone.
- Effective visual aids that add clarity and that are well organized and legible.
- A high level of preparation by individual members and by the group as a whole.

The rubrics below are keyed to the degree to which your group displays these attributes.

Rubric Philosophy

A rubric is set of evaluation guidelines that focuses on the degree to which specified expectations are met. It differs from other commonly used evaluation methods in that it reports levels of quality rather than simply checking off the presence of required items or assessing the correctness of factual information. Those elements are important of course and must be addressed, but a rubric is a more holistic view that also considers overall engagement with the material. For the specific purpose of assessing a lab demonstration, the rubrics below consider such factors as accuracy, thoroughness, organization, clarity of presentation of data and results, and clarity of explanations.

It is important for you to understand that the quality of a presentation must be above a minimum threshold before significant credit can be earned. For example, a verbal circuit description that has no diagram to accompany it is almost useless since the listener might not be able to visualize what the circuit is supposed to do. Such a presentation would be assigned the minimum score. Likewise, lack of preparation on the part of one or more group members represents an extreme lack of professionalism and would also result in a low score. In the professional world you will have to interact with multiple individuals who are either heavily invested in the success of your work or who have technical problems that you are trying to convince them that you can solve. You must be able to come up with good solutions, but you must also be able to convince others that your solutions are good.

You should view the rubrics below as opportunities for receiving feedback to help you improve your verbal communication and persuasion skills. With the practice provided by post-lab meetings, you should become more sensitive to the needs of your listeners and more able to craft

good presentations. The skills that you learn here can transfer to other aspects of your life and career as well such as interacting with professional colleagues and government or industry authorities, competing for contracts, grants, and other types of funding, explaining your work and accomplishments to supervisors, and setting clear expectations for others who work for you.

Interpretation of Rubrics Used in ECEG 350

The numerical columns in the rubrics below correspond to the various sets of quantized point values that are assigned to the relevant lab score criteria in the handouts. The multiple columns allow for different possible weights from one lab exercise to the next. If the set of scores used in a particular case does not match one of the columns, then it should nevertheless be obvious how the individual scores match to the relevant ratings. Different scoring systems could be specified in some lab handouts; in those cases, the system outlined in the handout supersedes these rubrics. The rubrics below could be revised during the semester.

Rubric for Assessing Circuit Operation or Test Procedure

The following rubric will be followed to score the degree to which design specifications are met and the degree of functionality of the assembled circuit. Although the explanatory text for a particular score level might list several potential issues, the presence of just one of the issues could lead to that score being assigned to the relevant criterion.

50	40	30	<i>Exceeds Expectations:</i> Circuit works perfectly/test procedure is fully effective and accurate and exhibits elements of good design technique. Test equipment is properly configured and expertly utilized to obtain relevant and useful results.
45	35	23	<i>Meets Expectations:</i> Circuit works fairly well, but there is a minor design flaw or two. (Unnecessary use of trial-and-error would be viewed as a flaw.) Minor issues with the use and/or configuration of the test equipment and/or component properties is evident. Some misunderstanding of the design goals.
40	30		An intermediate score applicable in the 40 and 50-total-point systems.
30	20	15	<i>Below Expectations:</i> The design exhibits many minor flaws and/or one major flaw. There is significant difficulty with configuring the test equipment and/or component values and interpreting the measurements. Significant misunderstanding of the design goals.
20	10	8	<i>Unprepared:</i> The circuit contains a host of flaws and/or significant outside assistance was necessary to obtain meaningful results. Little original work has gone into the design. There seems to be little to no understanding of the design goals.
0	0	0	<i>No Circuit:</i> No circuit or test procedure is submitted.

Rubric for Assessing Responses to Prompts Listed in Lab Handout

The following rubric will be followed to score the quality of responses listed in the lab handouts. This is a composite score that incorporates a wide range of attributes that include, but are not limited to, effective verbal explanations, comprehension of concepts, use of supporting visual aids, and accuracy and sophistication of results. The highest score is difficult to achieve.

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| 50 | 30 | <i>Exceeds Expectations:</i> Explanation is professionally presented and exhibits thorough comprehension of concepts and understanding of circuit operation. Good visual aids are provided that effectively support the explanation. |
| 38 | 23 | <i>Meets Expectations:</i> Explanation is fairly well executed but is not fully up to professional standards. For example, the explanation might contain a minor misconception; some lack of comprehension of the design principles is evident; there is some struggle with follow-up questions; or the visual aids are a little disorganized. A combination of a few of the above might be present. |
| 25 | 15 | <i>Below Expectations:</i> Explanation falls well short of professional standards. For example, major misconception(s) and/or a significant lack of comprehension is evident; there is an inability to answer follow-up questions; or the visual aids are sloppy, highly disorganized, or missing. |
| 13 | 8 | <i>Unprepared:</i> Clearly not ready for the meeting, or the preparation was clearly rushed. For example, little comprehension or understanding of the design principles is evident, and the visual aids are irrelevant or missing. |
| 0 | 0 | <i>No Response:</i> Meeting not attended or no response given. |

Rubric for Assessing Visual Aids

The following rubric will be followed to score the quality of the visual aids. The most important aspect is the degree to which they support and clarify the discussion.

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| 10 | <i>Exceeds Expectations:</i> All visual aids are clear, well organized, uncluttered, and support understanding. All aids are immediately accessible by the individual or group. |
| 8 | <i>Meets Expectations:</i> Visual aids are mostly helpful and accessible, but they are a little unorganized, sloppy, or missing some important information. |
| 5 | <i>Below Expectations:</i> Visual aids are somewhat helpful but are disorganized, possibly in multiple pieces. Accessing them or the appropriate information within them causes some delays. Cross-outs and irrelevant text/equations might be mixed with the relevant material. Significant amounts of information might be missing. The aids are not ready for presentation purposes. |
| 2 | <i>Unprepared:</i> Aids are grossly insufficient, clearly ad hoc, or pieced together in the moment with no prior organization and/or are mostly illegible. Accessing the material causes significant delays, or the material cannot be located when it is needed. |
| 0 | <i>No Aids:</i> No visual aids are provided. |