

Grading policy for the comprehensive exam:

In solving problems for the comprehensive exam, students are expected to provide a complete and correct answer that clearly communicates to the grader three main aspects:

- (1) physics principles were applied appropriately to the specific problem,
- (2) the problem-solving steps followed a logical progression,
- (3) the necessary calculations were carried out in a technically competent manner to reach the final answer.

A full score on a question (20/20) requires clear communication of all three aspects. Drawings, equations, and explanatory statements are typically needed to achieve clear communication. If a written response is lacking elements of (1), (2) or (3), and/or lacking clear communication, the grader must judge whether the written response, as a whole, warrants a passing grade. A score of 10 or greater generally indicates that the quality of the written response was acceptable for our PhD program. Scores between 10 and 20 reflect the relative quality of passable responses. Scores between 0 and 10 reflect the relative quality of non-passable responses. It is left to each grader to design a grading scheme based on these principles.

When scoring a less-than-perfect response, graders will look for evidence of (1), (2) and (3). In addition, graders will favor responses with appropriate sense-making checks and a self-consistent line of reasoning. Sense-making checks can be applied to the final and/or intermediate answers. Students may indicate why an intermediate or final answer is incorrect, thus demonstrating an understanding of the corresponding physics principle. To avoid self-contradictions, a student can cross out work (strike through with a single line), or mark a section of their response as “scratch”. Crossed out (scratch) work will not be graded. If multiple contradictory solutions are presented, it is at the discretion of the grader to assess the level of understanding communicated by the student’s written response.

It is the student’s responsibility to ensure that they correctly understand the problem statement. We suggest carefully reading the question multiple times while solving the problem and asking for clarification from the proctor if any part of the question statement is unclear.