Introduction and Rationale
The PhD Qualification process is designed to assess the readiness of the student for the final stage of the PhD degree program, which is the performance of original research work and the organization and presentation of that work in oral (dissertation defense) and written (dissertation) forms under the direction of the PhD supervisor.

The platform for success in the final stage of the PhD program is built on the following four pillars: (a) a general understanding of the fundamentals of physics, (b) the ability to think originally and creatively about a specific problem or topic, and to translate this thinking into conducting research, (c) scholarship (depth and scope of knowledge) in the area of research, and (d) the ability to organize and clearly communicate the results to the scientific community.

The PhD Qualifier process is designed to assure that the student has developed these four foundational features, through course work and through the research rotations, and therefore has the potential to successfully complete the PhD program.

Requirements
GPA in Physics Courses. The minimum GPA requirement assures a sound general knowledge of the fundamentals of physics, corresponding to pillar "a", above. The student is required to maintain a cumulative grade point average (GPA) of B (3.0) or higher in all Physics courses. The minimum GPA requirement takes the place of a formal "Qualifier Exam", in which knowledge in core subject areas of physics is assessed with a written or oral test. A traditional "Qualifier Exam" is not a part of the Graduate Program in Physics at Emory.

Qualifier Proposal. Pillars "b-d", above, are addressed through the Qualifier Proposal. The Qualifier Proposal involves the independent preparation of a research proposal that is conceived, literature-researched and presented in the spirit of a research grant proposal. Along with the stylistic aspects of organization and presentation, the strength of the Qualifier Proposal will be evaluated on the basis of whether it offers a logical and consistent approach to the chosen problem, and on the level of conviction of the committee members that the proposal offers a reasonably successful solution to the problem.
Specific Requirements for the Qualifier Proposal

1. The Proposal topic may be selected by the student in consultation with their future dissertation research supervisor, or with the DGS in the case that a future advisor has not yet been identified.

2. The Proposal topic is not the same as the dissertation research topic that the student plans to pursue, but may be related to the general area in which the dissertation research topic lies.

3. The subject of the Qualifier Proposal will be a specific, well-defined problem in a subfield of physics. In general, a hypothesis will be made regarding the solution of the problem, and an approach to verifying the hypothesis will be presented. The possible outcomes of the approach, and degrees of uncertainty in the methods, will be discussed in detail. The context of the problem (connection to past and present work in the area of the topic) will be made clear.

The reasons for a proposal topic that is independent of the student's dissertation work are as follows: (a) The PhD Qualification Process seeks to assess the readiness of the student to perform the quasi-independent level of dissertation research. Therefore, the dissertation supervisor's own chosen research and topics are inappropriate for judging the independent thinking of the student. (b) The Qualification Proposal is a relatively small, closed-ended work that is to be completed on a timescale of ≥3 months, and involves literature-based and modest calculational work. The compact nature of the Qualifier Proposal seeks to evaluate the student's ability to bring to closure a topic. In contrast, the PhD research represents a minimum input of 3 years time and is heavily based on individual research, carried out within the confines of the PhD supervisor's own research effort.

4. The hardcopy form of the Qualifier Proposal should be at least 10, and not more than 40, pages long (typed, double spaced; not including illustrations, figures and tables), and contain the following sections: Title, Abstract (≤200 words), Introduction, Proposed Experiments (or Proposed Simulations, or Proposed Theory) and Expected Results, Discussion, Principal Conclusions, and References. The committee will receive the written version of the Qualifier Proposal at least one week prior to the oral defense. The hardcopy form of the Qualifier Proposal provides, for the student, a touchstone for organizing the presentation, and for the committee members, an introduction so that they can be prepared for the oral defense.

5. The oral defense of the Qualifier Proposal will be a minimum of 30 and a maximum of 40 minutes in length (not including the question/answer period afterwards). The presentation will be open to all those interested. After the presentation and questions, the student and committee members will meet privately to further discuss the proposal. Following this, the committee members will meet privately to decide the pass/fail outcome of the Qualifier Proposal.
Committee Composition
The committee should consist of three Department of Physics faculty members, one of whom should not be in the Departmental Group (soft condensed matter or molecular biophysics) that is associated with the Qualifier topic, and at least one faculty member from outside of the Department of Physics. The external faculty member should be chosen for their expertise or familiarity with the subject area of the proposal. The intended dissertation supervisor may serve on the committee. Therefore, the committee shall be composed of a minimum of four faculty members.

Timetable
The Qualifier Proposal committee should be chosen in the Spring of the second academic year. The student will submit the names of the committee members and a title for the Qualifier Proposal and a brief summary (<300 words) outlining the problem and approach selected to the Director of Graduate Studies no later than the last day of classes for the Spring semester. The Director of Graduate Studies will examine the proposal and give notice to proceed with, or modify, the Qualifier Proposal by the last day of the Spring semester. The Qualifier Proposal shall be completed by August 15 of the second year. Work on the Qualifier Proposal should be the principal activity of the student from the end of the Spring semester of the second academic year until August 15 of that year.

Passing the PhD Qualifier Proposal
The committee will inform the student of the satisfactory completion of the Qualifier Proposal following their meeting after the oral defense. If the student has maintained a B minimum GPA in Physics coursework, the student will be informed that, subject to the condition that any remaining Physics coursework be completed in accord with the minimum B GPA requirement, they have passed the PhD Qualification process, and may now enroll in PHYS 799R, "Dissertation Research".

Failing the PhD Qualifier Proposal
The committee will inform the student of unsatisfactory performance on the Qualifier Proposal following their meeting after the oral defense. At the discretion of the committee, the student may be allowed to present a revised Qualifier Proposal. In this case, the date for presentation of the revised Qualifier Proposal will be no more than one month from the date of the original Qualifier Proposal.