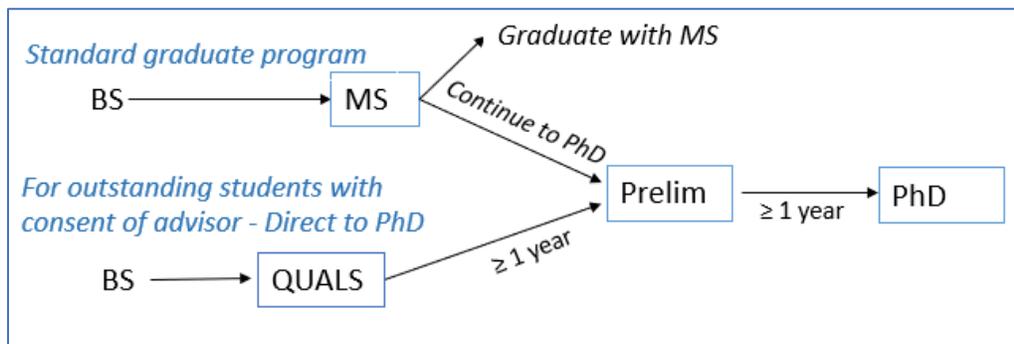


## **ABE Direct-to-Ph.D. Option**

Students with an outstanding record at their undergraduate institution, and a minimum cumulative GPA at graduation of 3.5, who are entering the program on a PhD-track without an MS may choose the Direct-to-PhD option. Students choosing this option will be required to complete the PhD Qualifying Sequence (QUALS) as described below. If successful, they will continue to the Preliminary Exam one to two years later and must meet all other requirements of all PhD students to graduate with a PhD degree.



*The Direct to PhD is an alternative track to the PhD for some outstanding students that do not wish to complete an MS.*

### **A. Ph.D. Qualifying Sequence Overview and Timeline**

The purpose of the Qualifying Sequence is to ensure that the student is prepared to conduct independent research as demonstrated by the student's ability to effectively summarize the literature in their research area; propose appropriate hypotheses or research questions that will advance knowledge; and, to develop appropriate research studies to test the hypotheses and answer the research questions. The Qualifying Sequence consists of three parts:

1. Student performance in coursework to ensure that the student demonstrates understanding of and ability to apply key principles in their Area of Specialization at the graduate level. (see B. below)
2. Request by the student, with approval from the student's research advisor, to proceed with QUALS. (see D. below)
3. Preparation and defense of a written report on their research and an oral presentation of the report. (see F. and G. below)

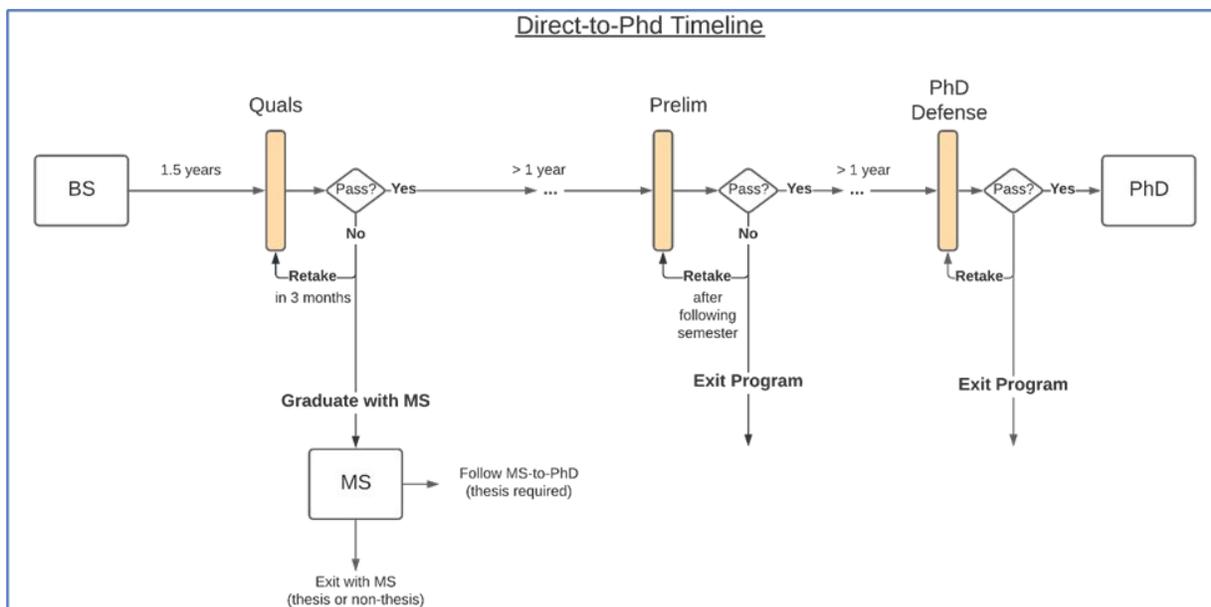
Students should attempt the QUALS in the semester after they have completed one year (i.e., Fall for those who entered in the Fall), and are required to complete it by the end of the following semester (i.e., Spring for those who entered in Fall).

MS students may enter the Direct-to-PhD track up to one year after they begin, by emailing the Graduate Program Administrator with advisor approval to notify them of the pending examination date.

## B. Qualifier Outcomes

Each student's Advisory Committee will be responsible for preparing a short (less than a few sentences) write-up summarizing the results of the examination. Based on an evaluation of the student's coursework and performance in the qualifying procedure, there are four possible outcomes:

1. **Pass:** The student is admitted to the PhD program and must complete all PhD program requirements to be awarded a PhD degree. The QUALS does not replace the PhD preliminary exam, which must be completed at least 1 year after the QUALS date.
2. **Retake:** The student is asked to retake the qualifier (oral, written, or both) by the end of March (October for Spring Admissions);
3. **A) MS required for PhD:** The student must complete an MS (thesis) degree for evaluation for admission to the PhD program by the graduate committee.  
**B) Graduate with MS:** The student may graduate with an MS (thesis or non-thesis) degree. Funding support during completion of the MS degree will be at the discretion of the Major Professor and the Department Head.



*Direct to PhD steps and potential outcomes*

## C. Coursework Performance

Students on a Direct-to-PhD track must complete at least 12 credits of courses from their Plan of Study before their fourth semester (including summer) at Purdue and maintain an overall GPA of 3.0 or higher. A student who does not maintain this GPA or receives a grade lower than a B in any course may not proceed on a Direct-to-PhD program but may continue on the regular PhD track.

#### **D. Student Request to Proceed Through QUALS**

A student on a Direct-to-PhD track must submit a request for QUALS comprising: 1) written approval from research advisors; 2) unofficial transcripts for coursework taken during their graduate program at Purdue; 3) CV. The Request for QUALS must be submitted to the Graduate Program Coordinator at least two weeks before the intended date of the oral exam. As stated in Section A.1, the QUALS should normally be completed in the semester after a student has completed one year (i.e., Fall for those who entered in the Fall).

#### **E. QUALS Committee**

The advisory committee for the QUALS consists of the major professor and at least two other members of the graduate faculty, with at least one member being from outside the Department of Agricultural & Biological Engineering. When the major professor has a courtesy appointment in ABE, the advisory committee should include at least one regular ABE faculty member.

#### **F. Written QUALS Research Report**

The qualifying written report should review literature in the student's research area, summarize the initial research plan for the PhD work with emphasis on the immediate future work (approximately 1 year), and present preliminary results, in about 5,000 words (10 to 15 pages at 1.5 line spacing). This is not expected to be a complete PhD proposal as will be done for the Prelim, but rather to show that the student is capable of conducting graduate research based on evidence of critical thinking skills, understanding of the scientific method, and knowledge of relevant subject matter. A typical written report for the examination will have the following structure:

- Introduction, including research objectives
- Literature review and theory that form the basis for your study
- Methods and materials you plan to use, based on what you know so far (recognizing they will be expanded and fine-tuned in future years)
- Preliminary results (if available) and/or discussion of what you have learned so far
- Plan for next 12 months

The student should engage consistently with the advisor to coordinate the document and submit the report to the Advisory Committee at least two weeks before the exam. The report will be used as the basis for evaluation along with the student's performance in oral presentation.

#### **G. Oral QUALS Examination**

All students must undergo an oral examination on the thesis research and the subjects of relevance to the respective area of specialization in front of the Advisory Committee. Oral examination dates should be scheduled with the Advisory Committee to occur before the end of the third semester, not including summer (in other words, fall of the second year for those who start in the Fall.) If unsuccessful, the student may retake the exam in the fourth semester. The student should prepare and print Rubric Forms (available in Appendix D of the ABE Grad Manual) for each member of the Advisory Committee.

The purpose of the oral examination is to provide an early assessment of the student's knowledge of their discipline, critical thinking skills, experimental and/or computational skills, communication skills, as well as their vision and motivation to complete the Ph.D. They should not be expected to display the same level of mastery that would be expected at the Prelim. The Oral QUALS exam may last up to two hours, beginning with a short presentation from the student to the committee, followed by questions and additional discussion. The committee may ask questions on the written report, the presentation or other topics related to the area of specialization. Time should be reserved for a closed-door deliberation among the committee members (in the absence of the student) during which the committee will determine the results of the exam among the choices in Section B., complete the rubric, and provide the results to the student. Rubrics or copies of them, need to be returned to the Graduate Program Administrator, as with all other examinations.

#### **H. Stipends**

Students interested in the Direct-to-PhD program and who are on assistantship will earn a stipend equivalent to that of an MS student until a determination is made following completion of the QUALS (see section 1., B). If the student successfully advances to the PhD program (section 1., B., Outcome 1), the student will receive a stipend at the PhD level beginning the semester following the one in which the student takes the qualifier and subject to the availability of funds and continued satisfactory performance. If the determination is that the student retakes the qualifier or first completes an MS before advancing to the PhD (1., B., Outcomes 2 or 3A) the student will remain on an MS stipend subject to the availability of funds and continued satisfactory performance. Funding support for students set to graduate with MS degree (section 1., B., Outcome 3B) will be at the discretion of the Major Professor and the Department Head.