Guide to Preliminary Exams for Faculty and Ph.D. Students:

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This essay describes the process of the Preliminary Exam in the Ecology and Evolution (EE) group, both for our graduate students and for new faculty. Prelims at most universities are odd historical constructs that can be difficult to understand for both new faculty and graduate students. The form and expectations for prelims vary a great deal from university to university, department to department, and even student to student within a department. Prelims have rules and “cultural” precedents, and there is a great deal of scary leeway between the two. To some degree, this is to be expected, as each student has different needs and different faculty have different expectations. The Ecology and Evolution program at FSU has always allowed a great deal of flexibility to committees in the format and content of preliminary exams; we feel that this is important for meeting the needs of a diverse graduate group.

I’ll divide this into facts and a consensus of the EE faculty. Note that the consensus does not represent any formal policy for the EE area, the Department of Biology, or Florida State University. However, this document has benefited from comments from the graduate students and discussion among the faculty between 2019 and 2021. In other words, this description of prelims represents the general view of the EE faculty, while also recognizing that prelims will vary for each student.

Let’s start with the facts about what the Graduate Handbook says about prelims in Biology as of February 23, 2022:

**The written portion of the Preliminary Examination should be taken no later than the seventh semester (**\*The seventh semester really means the first semester of the student’s third year of graduate school, as they are counting summer semesters\*) **and the written and oral portion of the exam should be completed within a 3-month period. Committees of students not meeting this schedule must submit a memo to the Associate Chair for Graduate Studies explaining why the exam is delayed and setting a clear date for the exam. At the discretion of the Supervisory Committee, any portion of the exam may be retaken within 3 months if the performance was judged unsatisfactory.**

**This examination is "designed to test scholarly competence and knowledge and to afford the examiners the basis for constructive recommendations concerning the student's subsequent formal or informal study" (2007-2009 FSU Graduate Bulletin, p. 54).**

**The possible outcomes of the Preliminary Examination are:**

1. **passed**
2. **failed, without possibility of re-examination**
3. **conditional pass, additional work to be completed**
4. **re-examine**

**Results of the Preliminary Examination must be submitted to the Graduate Office immediately following the completion of the exam. If a conditional pass is received, the committee must stipulate, in writing, the conditions and the deadline for meeting these conditions. A majority vote of failed will result in dismissal of the student from the doctoral program.**

And, what the Graduate Handbook says about the Ph.D. proposal:

**The writing of a PhD proposal is intended to provide experience in writing a research proposal. Therefore, the proposal should follow the NSF or NIH format. Writing the proposal also helps the student crystallize the plan for their dissertation research and map out the experiments that need to be done. The proposal must be defended within 6 months of completing the Preliminary Examination and no later than the tenth semester in the program, and students must submit their proposal to their committees no less than 2 weeks prior to the proposal defense. Committees of students not meeting this schedule must submit a memo to the Associate Chair for Graduate Studies explaining why the proposal is delayed and setting a clear date for the proposal defense. A minimum of 12 months must elapse between approval of the proposal and defense of dissertation.**

**Generally, the proposal will include the following:**

**A. Abstract**

**B. Significance**

**C. Introduction with background review**

**D. Proposed research and rationale**

**E. Facilities and equipment required**

**F. Budget (including indirect costs and "fringe benefits")**

**G. Time required to complete study**

**H. Vita**

**I. Literature cited**

**The student is required to meet with the supervisory committee to discuss and defend the proposal.  Upon committee approval, the proposal is submitted to the Graduate Office.**

Here are how the written and oral exams are generally dealt with in EE:

Written exams:

The writtens are taken first and are usually done within a single week. Generally, each member of the Ph.D. committee (including the major professor) is allowed up to an entire day for their questions. The major professor sends a reminder 1-2 weeks ahead of the prelims to the committee and requests questions. The major professor should also ask how much time should be allowed for the questions and whether the exam should be open or closed book (I usually provide instructions like “6 hours to write answer, closed book. Then, please take one more hour to re-read and edit your answer for clarity”). But, recognize that a component of these exams is time-management, which is why we don’t have a general time limit for each question.

Once the questions are received from the committee, the major professor can decide the order in which to give them out, generally interspersing harder and easier examiners. The writtens are generally done on an “honor” basis and students can complete the exam wherever they are most comfortable. Usually, early each morning, the major professor e-mails the question of the day to the student and the student e-mails his/her answers back after an appropriate time. The major professor then e-mails the answer for grading to the faculty who wrote the question.

Oral exams:

Orals usually occur within 2-4 weeks after the writtens, but are contingent on the approval of the committee and based on “passing” the written exam. Sometimes committees ask that students re-do the writtens before proceeding to the orals, or perhaps take more time to prepare before the orals. Once the writtens are approved, the student should make appointments with each committee member and ask if they have suggestions on preparing for the orals. Often the faculty have specific problems with the writtens that they intend to pursue further at the orals –faculty may want to give the student advance warning about these concerns so they may prepare for their orals. But, note that writtens and orals are separate exams. The faculty can ask similar questions or follow new avenues of questioning.

Orals are generally conducted in a single meeting that usually lasts from 1.5 to 3 hours. Usually, each member of the committee is allowed to ask a series of questions in 1 or 2 rounds of questions, with the other members of the committee being allowed to follow up on any response from the student.

Exceptions to the above formats for writtens and/or orals can certainly be made for students with special needs, as long as the exams meet the general guidelines in the Graduate handbook. More extreme exceptions may need approval at higher levels. Students should discuss alternative formats with their advisor and committee as needed; the Associate Chair for Graduate Studies should be contacted if there is insoluble difficulty coming to agreement.

Now, some consensus thoughts from the EE faculty:

-- Mentors should be keeping track of their student’s progress. Regular meetings are ideal, while Gradbeta is an easy way to make sure that the official steps are being met in a timely fashion. Checking on Gradbeta *at least* twice a year is recommended.

-- Students should be thoughtful in choosing members of their committee. It is OK if they ask the faculty about their expectations as committee members. But, committee members should be viewed as allies, not obstacles, toward the degree. Students are encouraged to check in with committee members regularly and keep them informed of your progress.

-- It is good for students to take prelims as early as reasonable, just to get them out of the way and allow the student to focus on research. However, there is a slight danger in taking it too early, because the student may not be ready. Further, the student must defend within five years of advancing to candidacy (passing prelims). Most students will take their prelims in their 5th to 7th semester (this is the spring of their second year to the fall of their third year).

-- It is really good for the student to provide the committee as much information as possible about his or her research interests BEFORE prelims. This helps focus the questions the committee will ask, which in turn greatly helps the student to focus his or her studying. The best way to do this is to provide a significant draft of the research proposal to the committee significantly before the prelims. While this is not a hard and fast rule, it is the sense of the faculty at this time (2020) that all students should have a draft prospectus done before their prelims – this also allows students to get feedback on their research plans before their second summer of research. So, students should attempt to get the committee a draft of their proposal in the fall or spring of their second year.

-- Different advisors and committees may ask for specific formats for the research proposal. But, for EE, it is common to require a NSF-style proposal of no more than 8 pages, not including the vita and references.

-- In my experience, about half pass outright, another 40-45% get a conditional pass, usually requiring the student to take a specific course(s) or write a review paper. Maybe 5 to 10% are asked to “re-examine”. I can’t remember a student who we “failed, without possibility of a re-examination” on their first try. There is no shame to conditional passes or re-examining – some of our very best students took their prelims twice.

-- The biggest variation is in the scope of the exam. Some faculty or entire committees view prelims as “comprehensive exams” that are an evaluation of the student's general knowledge in a field. In this case, different students from the same research area may have pretty similar exams. At the other extreme are prelims that evaluate a student’s knowledge in a narrower area associated with their research. In this case, the exam can be quite different from student to student and among faculty examiners. Students need to consult with their committee before the exams to clarify the goals and expectations of each committee member (see below).

-- In prelims, a goal of the committee is to get the student to "think on their feet"; to use what they know to think in a logical fashion about things they don't know. This means that the committee should ask some questions in new or unexpected areas.

-- Committees often work to determine the limits to the student’s knowledge in a given topic. This means that “I don’t know” is a perfectly acceptable answer to a question. Neither the student nor the committee should be worried when a student cannot answer a question – this is a natural part of the process.

Finally, here is what the EE faculty propose as a guide to the content and timeline for prelims. It is based on the idea that the student finishes a good draft of a research proposal before their prelims, in order to “guide” the committee to somewhat narrower questions in the written and oral prelims.

1. Faculty need to make their expectations for the rate of student progress and for the preliminary exam known to their students as early as possible. Further, the students should choose their committee thoughtfully and meet with them regularly. Students and faculty should take advice on what faculty would be most appropriate for each student’s committee. Committees are generally formed at the end of the first year of study.
2. The student and faculty mentor should decide approximately when to take prelims, then announce this plan (this usually occurs at a committee meeting in the second year). Generally, the exam will be in their 2nd spring or summer semester or 3rd fall semester.
3. The student should complete a complete draft of a research proposal in their second year. This should be distributed to the committee at least a month before prelims. Always remember the wise words of Joe Travis (or maybe one of his mentors) – “this is a proposal, not a contract.” It should contain what the student reasonably hopes to accomplish, but is not necessarily everything the student will be absolutely required to complete for his or her Ph.D.
4. The student should then make an appointment to meet with each committee member to ask for (1) feedback on the proposal and (2) guidance on how to study for prelims.
5. At this time the faculty should give the student some guidance as to whether they are likely to ask general knowledge or more narrowly directed questions. This is purely the prerogative of the individual faculty. (Personally, I write this down in 2-3 sentences, then send a confirming e-mail to the student and to myself. That way, I can remind myself what I told the student before their prelims).
6. The student should contact each committee member and arrange a date for the writtens and, if appropriate, the orals. This should probably be done at least 2-3 months before the prelims, as scheduling multiple faculty can be worse than herding sheep with a poorly trained cat.
7. Depending on the guidance they received from the committee members, students should then study appropriate materials. This may involve meeting again with the faculty to generate a dialog about the material and the expectations. In my opinion, studying for more than 2 months isn’t really that useful. In essence, students are studying all through graduate school, as they take classes, learn the appropriate literature, write their proposal, and initiate their own research projects.
8. The student should take their writtens. EE Faculty should note that written questions should probably be limited to 8 hours or fewer, but traditions vary in different groups in the department and across campus. It is probably not a good idea to allow students as much time in the day as they choose – they could agonize for 24 hours and then be unprepared for later examiners.
9. Afterwards, each examiner should provide (preferably written) feedback to the student and the major advisor on the answers, and a statement about whether they think the student should or should not move on to the orals.
10. Assuming the committee is in favor, the student should then move on to the oral exam (note this must be done within 3 months of writtens). The student should then go again and talk to each committee member (if they are willing) and ask if there are any new expectations, based on the writtens.
11. Students are strongly encouraged to ask older students to run a mock-orals for them. It can make the whole thing a little less frightening. Ask students who have completed their prelims to play the role of your supervisor and committee members; ideally ask students who have had prelims with those people and know their style.
12. The student should then take and pass their orals.
13. The fun never ends – now the student needs to have the formal research proposal approved by the committee (if they haven’t already). As per the graduate handbook, **“The proposal must be defended within 6 months of completing the Preliminary Examination and no later than the tenth semester in the program, and students must submit their proposal to their committees no less than 2 weeks prior to the proposal defense.”** There is no formal proposal defense for Ecology and Evolution students, other than their committee’s approval of the final document. Students who gave their committee a full proposal before prelims can benefit by using feedback from prelims to edit the proposal.