

Biology Masters Student Qualifying Exam

The following assignment is **to be completed before the end of the 3rd semester** and is designed to assess the student's ability to understand primary research literature and design scientific experiments in a specialized area of research. The questions below relate to a particular paper which has been selected by the committee and is based on the student's area of research.

The student will have up to **two weeks** to complete the written portion of the exam. After completion of the written portion, the committee will meet with the student (within the following two weeks) and, based on the paper and the written responses, the committee members will conduct an oral examination to assess the student's ability to **1)** think broadly (ecologically and/or evolutionarily), **2)** think mechanistically, **3)** integrate concepts and ideas, **4)** understand experimental design and data analysis and **5)** evaluate knowledge on any pertinent topic in the student's area of study.

After completion of the oral portion of the exam, the committee will assign a pass/fail grade and complete the **rubric for assessing Graduate Student Learning Outcomes**. The grade and rubric will be sent to the graduate coordinator. In case of a failed grade, the student will be allowed one attempt to retry. In case of a second failure, the student may be dismissed from the program.

The exact timing of the exam will be determined in agreement with the student and all the committee members.

Qualifying exam question for _____; prepared by _____.

Read carefully the primary research paper that is attached:

Then prepare a well-organized typewritten paper, no less than 3, nor more than 5, single-spaced pages long, responding to the following questions or assignments:

- ___/15% 1. Explain in your own words what "big question" this research attempts to answer.
- ___/15% 2. Explain in your own words the principal conclusion of this paper.
- ___/10% 3. How does this conclusion contribute to our overall understanding of this field?
- ___/15% 4. How does this paper relate to your own M.S. research project?
- ___/10% 5. Consider figure or table, _____, and explain how the data were obtained and analyzed.
- ___/10% 6. What is your most serious criticism of either methods or analysis in this paper?
- ___/10% 7. . Identify a novel hypothesis not tested in this paper but logically arising from the findings. Clearly explain its basis and significance.
- ___/15% 8. Propose an experimental or observational research protocol to test the new hypothesis. Justify your approach and outline expected outcomes and potential limitations.