HAS ATMO Ph.D Qualifying and Comprehensive Examination Procedures Approved by Faculty Vote on May 7, 2024

PhD Qualifying Exam:

1) Purpose: To test the student's basic understanding of their general field of study, particularly in the four core courses in the Atmospheric Sciences, and to evaluate their ability to communicate their knowledge with the scientific community.

2) Requirements for incoming Ph.D. students with a M.S. degree:

Written Component:

ATMO graduate students must complete the four core courses within the first year of the program. If they received at least 3 As and 1 B in those four core courses at the end of that academic year, their qualifying exam will be waived. Otherwise, ATMO faculty will provide them with a set of 100 questions that encompass topics from the four core courses as well as broader ATMO-related topics. In the Fall semester of their second year, students who did not meet the above requirement will take the Ph.D. Qualifying Exam. This in-person, 4-hour exam comprises 10 questions drawn or adapted from the pool of 100 questions. The exam questions will be divided as follows: 4 on Dynamic Meteorology, 4 on Physical Meteorology, and 2 on general ATMO-related topics. Each question carries a value of 10 points for an exam total of 100 points.

Grading:

The written exam will be graded as Pass/Fail. Students will receive "Pass" if their total score is equal or greater than 60, or "Fail" if the score is lower than 60. When receiving a grade of "Fail," the student will not be allowed to continue their pursuit of Ph.D. study in HAS. Each question will be graded by two faculty members, and the final score will comprise an average of those grades. In situations where the discrepancy between scores for a given question is greater than 2 points, the director of graduate studies will review that response or request a third faculty member to review that response. The committee of ATMO faculty participating in the qualifying exam will make a final decision.

Oral Component:

ATMO graduate students must present their research in either oral or poster format during a professional meeting within two years, such as AGU and AMS, to demonstrate their ability to share their research results with the scientific community. Presenting their research in either oral or poster format during the HAS El Dia symposium will count toward this requirement.

PhD Comprehensive Exam:

1) Purpose:
   - Evaluate a student's breadth of understanding across the atmospheric sciences and related fields.
   - Evaluate a student's depth of understanding in their chosen field of research, writing and presentation ability, and ability to conduct original research.
   - The comprehensive exam committee members will provide feedback on the student's intended research direction.

2) Timing:
   This exam should be scheduled as soon as possible once all non-dissertation credits and Ph.D. minor requirements have been completed. Students normally take their comprehensive exam after they have passed their qualifying exam, submitted at least one manuscript to a refereed journal, and have begun working on their next manuscript.

3) Requirements:

   - **Written component:**

   The Ph.D. comprehensive prospectus consists of three parts: Abstract (1-2 pages), attachment of the published/submitted paper(s), and the proposed future work (5-10 pages). The basic graduation requirement for HAS ATMO Ph.D. students is the submission of three research papers as the first author. Students must submit their prospectus to their committee members at least 2 weeks prior to their scheduled oral Ph.D. comprehensive exam.

   - **Oral component:**

   The student will deliver a presentation (~30 min) on the research from their published/submitted papers as described in their prospectus followed by questions and discussions with their committee members. The oral component should last a maximum of 2 hours including the student presentation.

   - **Committee members:**

   The comprehensive exam committee should be the same as the dissertation committee, and its membership should include at least 3 faculty from HAS and 1 faculty from the Ph.D. minor department. External committee members may be included on the dissertation committee.

   - **Grading:**

   The comprehensive exam will be graded as Pass/Fail. Students must receive a "Pass" grade from at least 3 of the 4+ faculty members to pass the comprehensive exam. If students fail the comprehensive exam, they must work with their academic advisor toward addressing their shortcomings and will retake the oral exam within two months of receiving notice that they failed their exam.