

# AOSC's Revised Comprehensive Examination: Rules

AOSC Examination Committee: Liang (Chair), Zhang, Li, and Tamara Hendershot  
Drafted by Liang; edited by Genevieve Cooper; reviewed/revise by Nigam (7/19/20)  
Returned to the Committee for their approval and sign-off on 7/19/2020  
Comments and edits by Tamara Hendershot on 7/21 and 8/13; edits by Sumant Nigam on 7/28  
and 8/12; Reviewed and Approved by the Exam Committee on 8/14/2020.  
Update to scheduling exams process, Item 6.) approved by the Exams Committee and DGS:  
Xin-Zhong Liang, Zhanqing Li, Da-Lin Zhang and DGS Sumant Nigam on 10/31/2022.  
Scheduling change update as of 8/1/2023 per DGS Sumant Nigam, Exams Chair; Xin-Zhong  
Liang, Committee Chair; Da-Lin Zhang.

1. The M.S. degree will require submission of an acceptable scholarly paper, a student seminar presentation, and attendance of student and department seminars, but no written examination.
2. The Ph.D. Comprehensive Examination elements:
  - a. The candidate's GPA from the six (6) core courses [AOSC 610, 611, 620, 621, 617, 680] must be 3.0 or greater with no individual course grade below B<sup>-</sup>. If the candidate has not taken any or all of the core courses at UMD, the candidate must submit a detailed syllabus of the external courses and received grades to the AOSC Graduate Director to obtain equivalent grades [see footnote for more details on this process]. The GPA based on equivalent grades will be defined as the candidate's core-course GPA.  
[Atmospheric chemistry students can petition out of AOSC611 in favor AOSC600 by written request to the advisor and graduate director for approval.]
  - b. Two-part oral examination: The candidate will first give a 10-minute presentation with no visual aids (i.e., no ppt slides) on a pre-assigned topic (see #4) to the oral examination committee (see #3). This will allow the candidate to organize her/his thoughts on the topic. The committee will then examine the candidate and evaluate his/her ability to use the knowledge acquired from the six core courses in discussing the assigned topic and other problems in atmospheric and oceanic sciences. After committee discussion, each committee member will grade the student independently using the UMD graduate school letter grades. The average of the obtained grades will be recorded as the candidate's oral examination score.
  - c. The six core-courses-based GPA (or its approved equivalent) and the oral examination score will be weight-averaged to yield the final comprehensive exam score. The weights will be 60% for the core course GPA and 40% for the oral examination score.
  - d. The comprehensive exam score must exceed 3.2 for passing. If the score is below 2.7, the candidate will fail the exam. If the score is between 2.7 and 3.2 (inclusive), the student will be offered a second chance to take the oral exam in its immediate next offering, with the permission of the AOSC Graduate Director. The

candidate will have a maximum of two opportunities to take the oral examination, and if failed twice, the candidate fails the comprehensive exam.

3. The oral examination committee will consist of five (5) AOSC faculty members. One member is the candidate's research/academic advisor, while the other four members will be from the tenure or professional track faculty from three groups: (i) dynamics, (ii) climate, and (iii) physics-chemistry. No more than two faculty members, including the

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advisor, will be from the same group. The oral examination committee will be assembled by the AOSC Exam Committee; its members are not selectable by the candidate.

The oral examination committee (excluding the advisor) will be the same for all candidates taking the exam in that cycle. Only in extenuating circumstances can the composition of this committee (of four) change within an exam cycle, and only with the permission of the AOSC Exam Committee and AOSC Chair.

4. The oral examination topic will be sufficiently general and desirably interdisciplinary. The AOSC teaching faculty will provide multiple topics to allow all candidates to comprehensively use the broad knowledge and skills learned in all the six core courses. The oral examination committee (excluding the advisor) will review the topics submitted by the AOSC faculty and select/finalize several topics for the examination; the committee can go beyond the submitted topics list, revising them or creating new ones as needed. The number of topics selected will likely vary with the applicant pool size.

The topics will be given to all candidates with the same lead time of four (4) weeks. Each candidate is allowed to choose one topic. For those who take the exam for the second time, the topic shall not be repeated.

5. The oral examination will be given in the presence of only the examination committee (five members) and the score will be kept confidential to preclude the sharing of student responses. Candidates who do not display sufficient knowledge of the core material during the oral examination may be required to audit the core course(s). This decision is at the discretion of the oral examination committee.
6. Students will be provided topic questions at the start of the semester (fall and spring). The exams will be administered approximately 4-6 weeks after receipt of topic questions.

Core Course Waiver Process:

A student with an earned master's degree or who has taken master-level courses in atmospheric sciences in a graduate program of another institution may request a core course(s) waiver. For each course, the student must provide the syllabus for the current AOSC core course as well as the corresponding course taken at the other institution, and include a comparative summary of the two courses. This written petition must be approved, on a case by case basis, by the student's advisor and the AOSC Graduate Director before registration for the oral comprehensive examination.