

9-21-01

Requirements for the Ph.D. in Chemical Physics

- A. The general requirements for the College of Natural Science for the Ph.D. degree apply.
- B. Specific requirements of the Ph.D. degree Program in Chemical Physics are as follows:
1. Students must satisfy the admission and qualification requirements for the Ph.D. degree of either the Department of Chemistry or of the Department of Physics. **Prospective students should request admission into the Chemical Physics Program in a letter to the Committee on Chemical Physics.**
 2. The Ph.D. Guidance Committee for each student must have at least two members from the Department of Chemistry and at least two members from the Department of Physics. The Major Professor serves as chair. Another committee member is designated as Second Reader. The Guidance Committee Report must be completed within two semesters after admission into the Chemical Physics Program. Copies are to be filed with the Director of the Chemical Physics Program, the graduate office of the admitting department, and the Dean of the College of Natural Science.
 3. At least six credits of course work from each department must be included in the student's course program. The courses chosen, and any changes in the program made thereafter, are to be approved by the student's Guidance Committee. (Changes are made on a form available from department graduate offices.) **In meeting these credit requirements, candidates should be enrolled in courses that are recognized as being graduate level, unless the Committee on Chemical Physics has granted written permission for course work constituting an exception to this rule.**
 4. **Students must hold a graduate teaching assistantship for a minimum of one semester during their tenure in the Chemical Physics Program.**
 5. One portion of the Comprehensive Examination is of the cumulative type. The requirements of the department into which the student was admitted apply. **The Comprehensive Examination in the Department of Physics and Astronomy is based on passing the final examinations in a core set of entry-level graduate courses. In the Department of Chemistry,** Chemical Physics cumulative examinations will be given six times each academic year—three per semester; they are graded on a pass/fail basis. Candidates for the Ph.D. degree may begin these examinations immediately after they have enrolled in the graduate program and must be continued without interruption. Physical Chemistry cumulative exams may be designated in lieu of a separate Chemical Physics examination: A grade of 2 or 3 on the **designated** Physical

Chemistry exams is equivalent to a pass for a Chemical Physics student, while a grade of 0 or 1 is a fail. **By the end of the second year, it is expected that at least two cumulative exams (either Chemical Physics or designated Physical Chemistry) have been passed. Students who fail to meet this minimum requirement will be removed from the Chemical Physics Program. The candidate must pass four cumulative exams; a minimum of two Chemical Physics exams and the remainder designated Physical Chemistry exams.**

6. No later than the midpoint of the third semester (not including summer semesters) each graduate student must meet with his/her Guidance Committee. The research advisor will call and preside over this short meeting. The purpose of the meeting is to:
 - a. Discuss course measurements and the Guidance Committee Report. The Guidance Committee Report will be completed but not signed until the Second Year Oral Examination.
 - b. Present the plan for the student's second year, focusing on the work to be completed to prepare for the Second Year Oral. The advisor will present his/her goals for the student for his/her second year and beyond. In some cases, the goals for the student may be to perform certain experiments, learn certain instrumental methods, build an instrument, make compounds, etc. In other cases, the goal may be to master certain concepts required for pursuing the research. In this way, the student and the committee members will clearly know what will be expected by the time of the Second Year Oral Examination.
 - c. The first seminar (scheduling, content) should be discussed at this meeting.
 - d. **Progress on the Chemical Physics Cumulative Examinations will be discussed.**
 - e. There should be some preliminary planning of the time of the Second Year Oral.
7. An oral examination, intended to provide an assessment of a student's preparation for his or her independent-research project, forms the remaining component of the Comprehensive Examination. This oral examination is administered by the student's Guidance Committee, under the supervision of the Second Reader; it is normally taken in the second year and must occur before the end of the **fourth semester in residence (not including summer semesters). The oral examination can only be schedule after the student has passed two cumulative exams (either Chemical Physics or designated Physical Chemistry).** A research proposal is to be prepared by the student and distributed to the members of the Guidance Committee at least 14 days

prior to the oral examination date. The results of the exam are transmitted by the Second Reader to the Graduate Office of the admitting department and to the Director of the Chemical Physics Program, on a form provided by the latter. If the examining committee determines that a student's research preparedness and/or progress is unsatisfactory, the graduate program may be terminated or specific recommendations for a course of remedial action, including re-examination, will be given.

8. Each student must pass two seminars (graded on a pass/fail basis) presented before appropriate groups in the physics or chemistry departments—the Physical Chemistry Seminar (CEM 998) or **the regular solid-state or Cyclotron seminar series**.
9. The final oral defense of the dissertation research is presented before the Guidance Committee; **the seminar portion of the final oral defense will be open to all members of the university community**. A manuscript, reprint, or similar evidence of the student's participation in the dissemination of the research results must be submitted, with the thesis draft previously approved by the Major Professor and Second Reader, to the members of the Guidance Committee at least one week prior to the scheduled defense. A form to be signed by each committee member at that time, as well as the MSU form to be completed after successful thesis defense, is available from the Director of the Chemical Physics Program.
10. **The Guidance Committee of every student beginning their sixth year of study, and every year thereafter, must meet during the first semester of every year. The purpose of this meeting will be to assess the progress of the student and could be the final oral defense. The meeting will normally be called by the Major Professor. If the Guidance Committee does not meet during the first semester of the year, the Director of the Chemical Physics Program will call a meeting of the committee during the first month of the following semester.**