First-Year Exam: Physical Tracks

This document describes the first-year exam requirements for the chemistry graduate students who are pursuing the following tracks: Analytical Chemistry, Atmospheric Chemistry, Biophysical Chemistry, Physical Chemistry, and Theoretical Chemistry. Note that this list does not include ChaMP; the ChaMP first-year exam requirements are quite different. In addition, these requirements do notapply to students who do not intend to stay in the Ph.D. program after fulfilling their M.S. requirements.

Your first-year exam requirement will be satisfied by submitting two written statements (see below) and a presentation, which describe your past research experiences and clearly define the goals of your future Ph.D. research. You will have two uninterrupted months of research work (from end of June to the end of August) to come up to speed on your project and complete your first-year exam requirements. Specifically, you must prepare and submit the following three documents to Prof. Eric Potma (epotma@uci.edu) in an electronic form (pdf files) by August 31 (at the end of your first year).

Format for the research statements

1. "Graduate Research Statement", limited to two pages. Please refer to this link for guidelines. Some general guidelines can be found here: https://www.nsfgrfp.org/applicants/application_components/statements
2. "Personal Statement, Relevant Background and Future Goals", limited to three pages.
3. One summary page

All the research statements must be written in full accordance with the current guidelines for the NSF graduate fellowship application. The reason we require this format is that we fully expect you to apply for an NSF fellowship in your second year (the application deadline will be in November). If you already applied for an NSF fellowship in the first year, you may submit your previous research and personal statement from your previous application. However, your proposed research application must be appropriately updated to include any changes that have happened since you applied last time.

Note: If you already have an advanced degree (M.S. or Ph.D.), or if you are a foreign student, you are ineligible for NSF GRFP funding. In this case, you may spend more pages on proposed research, and fewer pages on past research with the total adding up to 5 pages.

Format for the presentation

A summary of the most important results you have been able to obtain over the summer in the form of a short presentation, limited to 15 pages. Most of you will prepare this document as a PowerPoint presentation and convert it into the PDF

format but it is not a requirement. It is highly recommended that you present your presentation to your group in a group meeting before presenting it to the committee. Your presentation file must include the following parts:

- 1 title page
- 1-3 pages summarizing the broad goals or motivations for the study
- 1 page summarizing the specific goals of what you have been trying to accomplish over the summer
- 1-2 pages summarizing the methods used (such as diagrams of the experimental setup, description of the input parameters for the program you used, etc.)
- 3-6 pages with examples of your best experimental, theoretical, or modeling results in a graphical or tabular form. Each such example must contain a one sentence statement of what you have learned from this.

The statements and the presentation will be graded by a faculty committee appointed by the physical chemistry academic advisor, Prof. Potma. A grade of B- or lower assigned for any of the three submitted documents will constitute a fail of the first-year exam. Hastily written, poorly structured statements are not likely to get a passing grade.

If a poorly organized presentation that does not make sense is submitted you may be called in for clarifications or get a failing grade. If you do not qualify for a grade of B or better for your statements and presentation, the physical chemistry academic advisor will ask you to revise your documents and/or presentation within 2 weeks. If your second attempt fails as well the fail will become official.
According to the “Chemistry department policy for students who are not making normal progress”, you will have a right to do a re-examination within one quarter, that is before the fall quarter of your second year ends. Once you pass your first-year exam successfully, Prof. Potma will appoint your advancement to candidacy committee based on the information provided in your proposed research statement and a brief meeting.