

Quick Guide for Extra-Departmental Members of Graduate Advisory Committees (Feb 2009)

Thank You. If you are someone outside Chemistry who is serving on a Chemistry graduate Advisory Committee, thank you for your service. We are grateful that you are able and willing to apply your expertise and scholarship toward the student's education and professional development.

Overview. This Quick Guide summarizes the doctoral program in chemistry, emphasizing key assignments, exams, and events that require the participation of the student's Advisory Committee.

Annual Evaluations. In Spring 2009 the Department established a formal annual evaluation system for all graduate students. Each Advisory Committee must meet every year (typically in the Spring, for about 30 minutes) to conduct these evaluations. The Committee reads 3 short (one-page) student documents submitted beforehand, and then they complete a one-page form during the meeting.

Students are *not* present during the Evaluation Meeting, but they must arrange it, otherwise they get an Unsatisfactory rating for that academic year. Students are encouraged to append the Evaluation Meeting, whenever possible, to the four Milestone events that already require the Committee to be present. These are the Preliminary Oral Exam (2nd year), the Original Research Proposal Oral Exam (3rd year), the Internal Seminar (4th year), and the Final Oral Exam (5th year). A key feature of the Evaluation System is that students must stay "on schedule" with these Milestones.

First Year. Students go through orientation, complete perhaps two-thirds of their courses, select a Research Director (i.e., join a research group), and set up their Plan of Study. Foundation Course requirements are triggered by low scores on Proficiency Exams taken during Orientation Week. Major Courses are specific to the student's chosen sub-discipline (e.g., Organic). Elective Courses are chosen in consultation with the Research Director. Programmatic Courses are special courses that are part of the overall program (e.g., CHEM 5914 Literature Review). The First-Year evaluation is completed by the Research Director on behalf of the Advisory Committee.

Second Year. While working to finish up their last few courses, students will prepare a 25-page "Literature Review and Research Plan" in the fall semester (CHEM 5914). Members of their Advisory Committee (the student selects three "readers") critique and formally evaluate this review in two drafts. In the spring, students have their Prelim Oral Exam, which covers the Literature Review, Research Plan, research progress, and general knowledge. The Prelim Oral is a serious test. Students who pass this exam must demonstrate the characteristics expected of doctoral candidates.

Third Year. In the spring, students will prepare an Original Research Proposal (CHEM 6914). The 500-word Project Summary must be approved by their full Advisory Committees before they may proceed to preparing the 2500-word main document, also evaluated by the full Committee. Students will receive some guidance in generating proposal ideas in the fall (CHEM 6904). A third-year "ORP" Oral Exam (late Spring) covers the Proposal and the student's research progress.

Fourth Year. Students report their research progress in a 40-minute seminar (CHEM 5944). A student audience, and the Advisory Committee, provides written feedback.

Fifth Year. Students prepare their dissertations and defend their work in a Final Oral Exam before their Advisory Committee.

Questions and Comments should be directed to Paul Deck, Chemistry Department Graduate Program Director, pdeck@vt.edu, (540)231-3493. There is a special web site for Graduate Advising (available March 15, 2009). There you will find forms, instructions, web-links for you to submit your document evaluations electronically, etc.

Table 1. Main Duties for Chemistry Department Graduate Advisory Committee Members

First Year	Sign on as member of Advisory Committee, approving Plan of Study.
	Research Director conducts Annual Evaluation on behalf of the Committee.
Second Year	Read & evaluate Literature Review, two drafts, if selected as a "Reader" (Fall)
	Prelim Oral Exam (Spring)
Third Year	Annual Evaluation Meeting (Spring, usually right after the Prelim Oral Exam)
	Read & critique Original Research Proposal, Summary and Full Proposal (Spring)
	ORP Oral Exam (Spring)
Fourth Year	Annual Evaluation Meeting (Spring, usually right after the ORP Oral Exam)
	Seminar (Spring, or sometimes Fall of Fifth Year)
Fifth Year	Annual Evaluation Meeting (Spring, usually right after the Seminar)
	Final Examination (whenever)

Table 2. Chemistry Department Programmatic Courses for Doctoral Students

First Year	CHEM 5004 Orientation to Graduate Research (1 cr, PF, Fall term). This is a new course that will apply to students who entered Spring 2009 or later.
	GRAD 5004 GTA Training Workshop (1 cr, PF, Fall term).
	ENGL 0014 English Presentation (for international students, 1 cr PF, Fall term)
Second Year	CHEM 5914 Literature Review and Research Plan (3 cr, PF, Fall term). Students who entered before Spring 2008 will have already used CHEM 5904.
Third Year	CHEM 6904 Generating Research Ideas (1 cr, PF, Fall term). This is a new course that will apply only to students who entered Spring 2007 or later.
	CHEM 6914 Original Research Proposal (3 cr, AF, Spring term). Students who entered before Spring 2007 will already have used CHEM 5904.
Fourth Year	CHEM 5944 Graduate Seminar (1 cr, PF, usually Spring term)

Snapshot of the Literature Review. A 20-page (approx) review in area of the student's thesis project. There is an expectation of some critical analysis, not just "Smith did this, Jones did that." An additional 5 pages (approx) outline the research plan in the context of prior work. References, figures, tables, etc. should be properly formatted. Plagiarism is **not** tolerated. The Research Director reads a Preliminary Draft. Three "Readers" (student-selected Committee members) read the First Draft and provide critiques. The "Readers" also evaluate the Final Draft, which must be either approved or not approved as sufficient for the student to pass CHEM 5914 and enter the Preliminary Oral Exam.

Snapshot of the Original Research Proposal. A 2500-word proposal based on a "main idea" of the student's invention. The proposal must be in the area of Chemistry as broadly defined, but it may not be in any specific area(s) currently or recently under investigation in the student's own research group. During the Fall of the third year, students will enroll in a seminar course (CHEM 6904, new for Fall 2009) in which they discuss the strengths and weaknesses of their ideas, as well as strategies for developing their ideas into proposals, with faculty members and with senior graduate students. In the Spring term, students first submit a 500-word Project Summary to their Advisory Committee, which must decide if the main theme is worthy of development into a full proposal. Students then prepare a 2500-word full proposal, which is evaluated by the Advisory Committee members as a Final Draft and assigned a grade (100-point scale). Members' critical feedback helps the student prepare for the ensuing oral exam. Members are discouraged from requesting revisions. If the average grade is 60 or higher, students may enter the ORP Oral Exam, where another grade is assigned, also on a 100-point scale. Both the written and oral scores are used to determine the final grade in CHEM 6914.