Advising Toolkit: Checklists for thesis advisors

UNL Department of Mathematics
Graduate Advisory Committee
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The following is a collection of tools for use by faculty members of supervisory committees in advising their students. This document is organized into separate sections, each section corresponding to how much the student has completed in their studies, containing a checklist of suggested items for advising discussion.

Supervisory Committee: First (partial) semester

Before the last week of the semester in which the supervisory committee is formed, the following paperwork should be submitted. Further information on doctoral degree requirements should be reviewed, at http://www.unl.edu/gradstudies/bulletin/doctoral.

◯: **Appointment of Supervisory Committee form.** This transfers advising from the GAC to the supervisory committee. The committee must consist of at least one chair (the chair must be a member of the graduate faculty in the Department of Mathematics; if there are two co-chairs, then one of the chairs may be an emeritus faculty member, or a graduate faculty member of another department), at least one member of the graduate faculty from another UN department, and a total of at least four UN graduate faculty. This form may be found at http://www.unl.edu/gradstudies/current/degrees/doctoral along with further instructions. This form should be signed by the Mathematics Graduate Chair and submitted to the Mathematics Graduate Programs Coordinator.

Advice: Two non-chair members must be designated as "Readers"(see "Program of Studies" below); they will be asked to give feedback on the thesis. In choosing members, considerations include: Mathematics faculty from another area for broader perspective, and faculty who may be valuable as mentors for writing/exposition in the thesis, as mentors for teaching and/or other professional development of the student, and as recommendation letter writers for the student's eventual job search.

◯: **Program of Studies.** This must be completed and submitted in the same semester or summer of approval of the Supervisory Committee by Graduate Studies. Of the minimum of 90 credit hours required for the Ph.D., there should be at least 45 hours remaining to be taken at the time of the filing of the Program of Studies. The form and instructions are at http://www.unl.edu/gradstudies/current/degrees/doctoral. This form should be signed by the Supervisory Committee Chair(s) after it is approved by the entire supervisory committee, and submitted to the Mathematics Graduate Programs Coordinator.

Courses taken during the semester in which this form is filled out are counted under "Graduate courses to be taken"; this list must include at least 45 credit hours. Of the required minimum total of 90 hours of coursework on this form, a minimum of 12 and a maximum of 55 are to be dissertation (Math 999) hours. The choice of "Readers" for the dissertation is also recorded on this form (see above).

Suggestion: In choosing courses for the remainder of the student's graduate study, consider the breadth of knowledge that will be needed for the beginning years of their post-graduate career, rather than just the knowledge needed toward a specific thesis problem. Also consider the balance between coursework and adequate time for the dissertation; a common balance between coursework and dissertation hours for the remaining 45 credit hours is roughly half of each.

◯: **Comp Exam Progress Form, Part A.** (Aka Form Pi.) The newly established supervisory committee records its decision on the required areas for the student's Comprehensive Exams with this form. This form is available at www.math.unl.edu/graduate/ under "Departmental Forms". *From the GIOGP:* "The Supervisory Committee is required to follow Graduate College rules regarding the Comprehensive Exam, which may be found online at http://www.unl.edu/gradstudies/bulletin/doctoral/exams. In particular, the Comprehensive Exam must include a written portion and may, at the discretion of the Supervisory Committee, include an oral portion. Typical Comprehensive Exams in the Mathematics Department consist of two parts." A vote of the supervisory committee on the areas and formats of the exams should be recorded on the Comprehensive Exam Progress Form Part A and submitted to the Mathematics Graduate Programs Coordinator.

Supervisory Committee: Before graduation year

See http://www.unl.edu/gradstudies/bulletin/doctoral for more information on the first few items in this list.

☐: **Coursework:** Students should continue to take the courses from their Program of Studies. Alterations to that program can be submitted by the supervisory committee chair via email to the Doctoral Specialist in the Office of Graduate Studies.

☐: **Comprehensive Exam Progress Form, Parts B and C:** Desirable progress in the comprehensive exams is completion after 5 semesters in the program; completion within 6 semesters is considered adequate progress toward the doctoral degree. The decision as to whether the student has passed the Comprehensive Exam, and if not, which part(s) of the exam must be repeated, rests with the supervisory committee. After the committee votes on the result of each portion of the exam, the chair should record this on the Comp Exam Progress Form (at www.math.unl.edu/graduate/) and submit this to the Mathematics Graduate Programs Coordinator.

☐: **Admission to Candidacy:** This form from http://www.unl.edu/gradstudies/current/degrees/doctoral should be completed by the supervisory committee and submitted to the Math Grad Programs Coordinator after the student has completed the Comprehensive Exam. It must be submitted at least 7 months before the dissertation defense. Once this form is submitted, the student must be registered for at least one credit hour in every fall/spring semester until their graduation.
Financial note: After this form is filed, a student can, for up to two years, be "certified" as a full-time student (for purposes of earning a GTA or fellowship) while only registered for a single credit hour.

☐: **Professional Development:**

- ◯: **Professional Development Seminar:** In their third or fourth year students should be encouraged to participate in the department's (Math 996) Professional Development seminar. This offers information on aspects of academic and nonacademic jobs: Life in various positions (as a postdoc, as faculty in an undergraduate institution, in government/industry), negotiations, writing grant proposals, teaching and curriculum development, professional societies, professional resources, time management, etc.
- ◯: **Resumé:** During these years, advisors and students should consider activities which will build the student's employment resumé. In addition to conference/workshop/seminar activities below, this may include applying for internships, UNL and external awards and fellowships (more below), etc. Students considering applying for academic jobs should request that a faculty member observe them in several different classes during these semesters and discuss educational matters, toward an eventual teaching recommendation letter.
- ◯: **Speaking and Writing:** *Suggestion:* Frequent feedback to students on writing up their research results and on presenting them in seminars/conferences in these semesters can be invaluable. Be sure to work on written/oral research exposition before the graduation year.

☐: **Conferences, workshops and seminars:**

- ◯: Advisors and students may consider summer workshops geared toward graduate students (and sometimes postdocs/young faculty) offered each year to introduce mathematicians to their research area.
- ◯: Students should be encouraged to attend conferences in their research area through the year, as appropriate. As students begin to develop their own results, they should

also be encouraged to present them at conferences. *Tip:* The AMS offers funding to grads to attend AMS meetings; see www.ams.org for application details.

◯: The supervisory committee should discuss with the student which UNL research seminars are helpful for their area, and encourage active participation including speaking. All graduate students should also be advised to continue attending the Department's Colloquium each week.

□: **Fellowships:**

◯: *UNL Graduate Studies fellowships:* UNL Grad Studies offer a variety of fellowships. Deadlines are usually in the winter. For more information, see http://www.unl.edu/gradstudies/current/funding/fellowships.

◯: *Dissertation fellowships:* Several foundations offer fellowships for students in the final year of their doctoral study. Advisors and students should consider fellowship options in their area. Application deadlines are usually in the fall of the year before the final year of graduate study. For more information see http://www.unl.edu/gradstudies/current/funding/external.

Supervisory Committee: Graduation year

☐: **Forms to file:** The following forms are all available at http://www.unl.edu/gradstudies/current/degrees/doctoral. All forms should be submitted to the Math Grad Programs Coordinator.

- ◯: **Admission to Candidacy:** If this hasn't already been completed: File by early **September** - this form must be submitted by the supervisory committee chair to the Math Grad Programs Coordinator at least 7 months before the dissertation defense (and after the Comprehensive exams are finished).
- ◯: **Application for Degree:** File by mid-**January** for a May degree. (This form is in MyRED.)
- ◯: **Application for Final Oral Examination:** File at least 3 weeks before the dissertation defense.
- ◯: **Report on Completion of the Doctoral Degree and Signature Page:** These should be brought by the student to the dissertation defense, and filled out by the supervisory committee.

☐: **Program of Studies:** The student should complete any remaining coursework on the Program of Studies.

☐: **Dissertation:** Several iterations of proofreading the thesis are often needed, and students may need advice on the amount of time writing will take, and on writing as early as possible. In the final semester, the Readers in the supervisory committee should be given a complete draft of the thesis at least a month before the dissertation defense, in order to have adequate time to check the work and give feedback.

☐: **Job search:**

- ◯: **Job search seminar:** Students in their final year should participate in the department's Job Search seminar. This usually runs every 2 weeks or so in the fall semester. Students are advised by a departmental faculty member on writing up their application materials (eg CV, research and teaching statements, or resumé), finding open positions, sending out applications, and interviewing. Although more emphasis is on an academic job search, discussions of putting together resumés, handling interviews, etc., are also of use for students applying for nonacademic jobs.
- ◯: **Employment search advising:** In addition to the seminar above, other things to consider: Advice from the supervisory chairs/committee on job application materials. Contacting non-UNL researcher(s) to introduce the student's dissertation work and obtain an outside letter(s) of recommendation. Making the student aware of the Employment Center at the Joint Mathematics Meetings, as well as frequency of informal interviews for academic and nonacademic posts at the JMM; possibly encouraging the student to speak at the JMM. Keeping aware of other (possibly more) suitable conferences in their area, and encouraging students to give talks on their dissertation research. Suggesting names of specific researchers in the area at institutions with open positions, for targeted introductory emails from the student (or advisor) in addition to the application. Practice/dry runs of interview talks, and of possible interview questions/discussions. Etc.