



**Department of
Mathematics**



**Changes to
PhD-Program Requirements**
April 4, 2014

Background

External Review in Spring 2013:

- Major performance review that identifies needs for structural changes, allocations of resources ..
- Serves for negotiations with college.

PhD Program:

Only one factor was singled out to work on:

Time to Degree:

- Currently 6.5+ years
- Funding limit of 6 years was urged.
- Nominal “expectation” 6 years already.
- Was already addressed in 2005 external report.

Background

❧ **Strategic Plan Response:**

- Required from us by college & university.
- No way around addressing the time issue.

❧ **Opportunity:**

- Incentive to improve program.
- Argue for added funding for teaching relief.

Overview

☞ **Funding Limit:**

- Limit to six years – adaption of other times limits.
- Phase-in and probationary extension.

☞ **Candidacy Exam:**

- Research oriented – instead of course based.

☞ **Qualifying Requirement:**

- Focus on doctoral (6000) level analysis & algebra.
- Mainly course based – but with exam options.

☞ **Miscellaneous:**

- Invitations – exposure to research.
- Better informed preliminary advising.

Time Limit

☞ **Six Year Limit:**

- No standard GA appointment beyond year six from entry into program.
- A-priori does not affect student status.
- Exceptions rare (e.g., maternal leave)

☞ **Self-supported Continuation:**

- Student status still subject to GSC review.
- Liable for tuition (may be out of state), health insurance etc.
- Continuous enrollment policy (university).

Time Limit

☞ Probationary Extension:

- Only for year 7. (No extensions into year 8)
- Subject to GSC approval:
by semester & by petition w/advisor support.
- At O-Level (\$1500/mo).

☞ Phase-In:

- For 2008 admitted cohort AU 2014 last regular
(and AU 2015 last probationary) semester.
- For later admitted cohorts above rules apply.

Candidacy Examination

∞ Time Limit:

- By end of summer following third year (that is, before fall of fourth year).
- Should find advisor by autumn of third year.
- Should already have idea of research topic.
- No "Phase-In". Effective AU 2014.

∞ Written Portion:

- 10-15 page Manuscript on research topic.
- Background material, and possible questions.
- Literature overview + references.
- Type-set (LaTeX).
- Within 4 week period of oral – at least formally.

Candidacy Examination

∞ Oral Portion:

- After written portion is approved – turn in at least 3-4 days before oral exam.
- 30 min presentation to committee. Not part of official examination – but part of program requirement.
- Two hour official examination. Focus on write-up but may also have more general questions.

∞ Goals:

- Be ready to engage in research immediately.
- First exposure to scientific communication in written and oral form.
- Connect with research topic to other faculty in department.

Qualifying Requirement

∞ Subject Content:

- Abstract Algebra: Math 6111-6112
- Real Analysis: Math 6211-6212
- Total of 4 “requirements” (one for each semester)
- Content under review – to adapt to broader audience.

∞ Fulfillment by Courses:

- Complete both course sequences in *first* year.
- A requirement is considered *passed* if the grade for the course is an A or A-.
- If the grade is a B+ the respective requirement is considered *provisionally passed*.
- It is *failed* for lower grades.

Qualifying Requirement

☞ Examination:

- Offered annually, just before start of Autumn semester.
- There are four examinations – one in each semester course (requirement).
- Each exam probably about 2 hours long.
- Similar in style to final examination of course, but may have additional difficulties.
- Graded by faculty committee.
- Outcomes for each requirement may be *pass*, *provisional pass*, or *fail*.
- Can be taken twice:
 - At start of first year or at start of second year.

Qualifying Requirement

☞ Unconditional Passing Options:

- The pass level of each single qualifying requirement is the highest result of the following three:
 - First attempt at exam (summer of entry)
 - Course grade (first year)
 - Second attempt at exam (summer before 2nd year)
- A student has passed the entire requirement if he/she has received a pass in all four requirements.
- The examinations are optional.
- The course is mandatory – unless a student passes the first examination.

Qualifying Requirement

∞ Provisional Passes:

- Students with a pass or provisional pass in each of the four requirements will be reviewed by the GSC before or at the beginning of the second year.
- Additional materials may be submitted by the student for this review.
- As a result a student may be allowed to continue pursuing a PhD degree on a “provisional basis” – subject to certain conditions.
- Conditions may include taking additional course sequences with minimum grades – and will be verified by the end of the second year.
- Typically at least two (of four) passes are required.

Qualifying Requirement

∞ **Fails:**

- Students who do not receive at least a provisional pass in *each* requirement are normally not allowed to continue pursuing a PhD degree.
- The GSC may allow continuation of support in order to pursue an MS degree subject to academic performance and required time.

Qualifying Requirement

∞ Transition Policy:

- Applicable only to 2013 admitted cohort.
(current first year students)
- A requirement can be passed in the following ways
 - Course in first year with A- or better.
 - Course in second year with A- or better.
 - Passing old-style qualifying exam in first year
(would cover both requirements in one subject)
 - Pass new examination at before beginning of
second year.
 - Pass a special old-style qualifying examination at
the beginning of Autumn 2014.

Other Requirements

∞ **Breadth Requirements:**

- Must be completed by end of second year.
- The 6000-level algebra and analysis courses do count towards breadth requirements (even if also used for qualifying requirement).
- Passing an examination does not count as course.

∞ **Invitation Requirement:**

- From entry to submitting advisor change form, every semester. (already implemented).

∞ **Language Requirement:**

- Essentially unchanged.