New Ag Chem Degree Requirements, QE, and More

Feel free to ask questions as we go along…

Cort Anastasio

Chair, Agricultural & Environmental Chemistry Graduate Group

Professor, Department of Land, Air & Water Resources

Degree Requirements: Background

- Most recent modifications to AGC degree requirements
  - Revised in 2000, 2007 and 2019
  - In this presentation I will discuss the 2019 requirements (i.e., the “new” requirements)
- Which degree requirements can you follow?
  - Continuing students: Can follow either 2007 or new degree requirements
    - I recommend 2019 version: requires 1 fewer Specialization course for PhD
  - New students: Must follow new degree requirements
- New degree requirements are on the AGC website
  - Please read them if you haven’t already
  - They contain details that I won’t cover here
  - Course checklists on website are for old requirements
  - I will make new checklists sometime this quarter

Prerequisites and Placement Exams

- Prerequisites
  - Physical chemistry: at least one semester (2 quarters)
  - Organic chemistry: at least one year
  - Two additional graded upper division courses in chemistry (new)
- If you are missing a prerequisite (or took it and received lower than a B), you have two options:
  - Take the UCD class(es) and earn a grade of B or better or
  - Pass the corresponding ACS Placement Exam at the 60th percentile
    - Placement exams available for p-chem, organic, inorganic
- ACS Placement Exam is not required if you received B or better in class as undergraduate (new)
  - However, if you want to TA for a class in Chemistry, you need to pass the General ACS Placement exam

Seminar Requirements

- In your first year (PhD and MS)
  - Fall: Fall research (AGC 290-001) and Meet the Faculty (AGC 290-002)
  - Winter: Colloquium (AGC 290-001) and Colloquium Prep (AGC 290-002)
  - Spring: Journal Club (AGC 290-002)
- In subsequent years, you (PhD and MS) are required to enroll/attend in
  - Fall research seminar (AGC 290-001) every fall you are registered
  - Winter colloquium (AGC 290-001) every winter you are registered
- Requirements for presenting
  - Winter colloquium
    - PhD students: present in years 2, 3, 4
    - MS students: present in year 2 and (if not finished) year 3
  - Fall research (PhD and MS)
    - Required Exit Seminar can be part of this series, or can be separate

PhD Requirements

- Core courses (7 – 8 units)
  - Either ETX 220 and 220L, or CHE 219 (and 219L strongly encouraged)
  - Either CHE 233 or CHE 226
- Statistics elective (3 – 5 units)
  - 1 course in statistics from list of approved courses
- Specialization electives (12 – 16 units)
  - 4 graded courses (new: previously ambiguous but ~5)
    - At least 3 of these must be graduate courses
    - 1 can be upper division undergraduate course after approval by Advisor
    - At least 3 of the courses must be focused on chemistry
    - See Appendix A in requirements for suggested elective courses
  - *Note: there is a typo in degree req'ts, which indicate only 3 courses req'd*
- Seminars as described on previous page (11 – 15 units)
- Units
  - ≥ 33 units of coursework from above categories
  - ≥ 16 units of graduate coursework, not including 290 or 299
  - Courses taken to fulfill prerequisite requirements do not count towards units

Waiving Courses for PhD Students (New)

Classes taken prior to the PhD program (e.g., as part of a prior graduate degree, including in AGC) can be used to waive required PhD coursework and the accompanying units if they meet five requirements:

(i) the class is essentially the same as a Core Course or is equivalent to a course that would be taken as an Elective Course,
(ii) the class was not taken to fulfill an undergraduate degree requirement,
(iii) you received a B grade or better in the class,
(iv) the class was taken within 7 years of starting in the AGC PhD program, and
(v) the request is approved by the student's Graduate Advisor and the Chair of the Graduate Group.

If the first four requirements above are met then you submit a written request to your Graduate Advisor explaining which qualified course(s) you took and which current requirements (courses and units) you are seeking to waive. Your request will then be considered by the Advisor and Chair.

There is no limit to the number of courses or units that can be waived, but you are expected to demonstrate strong knowledge of required coursework, including for waived courses, as part of your Qualifying Exam.

Other PhD Requirements (Mostly Unchanged)

- You are required to be TA for a 3-unit course or equivalent
- Qualifying Exam (QE)
  - Submit QE Application to Grad Studies at least 4 wks before oral exam date
  - 5-member QE committee: ≥ 3 from AGC, ≥ 1 from outside AGC
    - Major Professor is not part of QE committee
    - Graduate Studies has additional requirements; see their website
  - Write 5-10 page prospectus in your own words. Due ≥ 10 d before oral exam.
  - Oral exam is typically 3 hr, with questions on prospectus, coursework, other
  - Finish QE by 7th quarter if possible; no later than 9th quarter
- From QE to Dissertation Committee
  - After passing QE, QE Chair will file Report on QE form to Grad Studies
  - Work with Major Professor to assemble 3-member Dissertation Committee
    - Major Professor is chair. At least one other member must be from AGC
  - You must submit form to advance to candidacy & form Dissertation Committee
- Exit seminar
  - Required to give 50-min seminar to group; not a defense
  - Can be part of Fall seminar series or as a separate seminar
  - If the latter, you are responsible for booking room and advertising

MS Plan I (Thesis) Requirements

(Essentially Unchanged)

- Core courses (7 – 8 units)
  - Either ETX 220 and 220L, or CHE 219 (and 219L strongly encouraged)
  - Either CHE 233 or CHE 226
- Statistics elective (3 – 5 units)
  - 1 course in statistics from list of approved courses
- Specialization electives (9 – 12 units)
  - 3 graded courses
    - At least 2 of these must be graduate courses
    - 1 can be upper division undergraduate course after approval by Advisor
    - At least 2 of the courses must be focused on chemistry
- Seminars as described on previous page (7 – 9 units)
- Units
  - ≥ 30 units of coursework from above categories
  - ≥ 12 units of graduate coursework, not including 290 or 299
  - Courses taken to fulfill prerequisite requirements do not count towards units
- Thesis
  - 3-member thesis committee and public exit seminar

MS Plan II (Exam) Requirements (New)

- 1-year, self-funded, coursework degree in Environmental Chemistry
- Core courses (8 – 9 units)
  - Either ETX 220 and 220L, or CHE 219 (and 219L strongly encouraged)
  - ETX 102A, Environmental Fate of Toxicants
- Electives (30 – 31 units). See requirements for details.
  - 1 course in Statistics
  - 3 courses in Environmental Chemistry
  - Up to 1 course in Other Chemistry; up to 1 course in Env Science/Policy
  - Seminars; 2 Professional Development activities
  - Up to 3 units of Research; Summer Internship or Research
- Units
  - 39 units of coursework from above categories
  - Courses taken to fulfill prerequisite requirements do not count towards units
- Capstone Experience: Written examination based on coursework
- It is possible to get Plan II MS on way to PhD
  - Feasible because of new PhD course waiver policy
  - Will require some additional work beyond PhD requirements (courses, exam)

Your Qualifying Exam

Feel free to ask questions as we go along…

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Timeline to the PhD

	Fall	Winter	Spring	Summer
Year 1	ETX 200 & 220L, Analysis of toxicants	STA 1xx or other approved statistics	200-level course	Research
	CHE 233, Physical-Organic Chemistry	200-level course	200-level course	
	XXX 299, Research	XXX 299, Research	XXX 299, Research	
	AGC 290-001, Research seminar	AGC 290-001, Winter Colloquium	AGC 290-002, Journal Club	
	AGC 290-002, Meet the Faculty Seminar	AGC 290-002, Presenting a Seminar		
Year 2	XXX 299, Research	XXX 299, Research	XXX 299, Research	Research
	200-level course	AGC 290-001, Winter Colloquium (including presentation)		
	AGC 290-001, Research seminar			
	[Qualifying Exam Preparation]	[Qualifying Exam Preparation]	[Qualifying Exam] [Advancement to PhD Candidacy]	
Years 3 - 6	XXX 299, Research	XXX 299, Research	XXX 299, Research	Research
	AGC 290-001, Research seminar	AGC 290-001, Winter Colloquium (including presentations in years 3 and 4)		
	Exit Seminar			
	Complete Dissertation			

- 1st year: take courses, do rotations, find major professor
- 2nd year: finish courses, switch focus to research, prepare for QE
- QE taken once all required coursework is complete
  - Generally at end of Year 2, but can be in Year 3
  - Passing QE increases your salary and removes NRST for international students

Ideal Timeline for QE

- Year 1
  - Complete most of your classes
  - Find Major Professor (MP) and start on research
- Year 2, Fall
  - Pivot to spend most of your time on research
  - Meet with MP to discuss research goals, QE committee, and QE timing
- Year 2, Winter
  - Ask faculty to serve on QE committee.
  - Poll committee to find date that works for exam. Reserve room.
  - Write drafts of prospectus. Get feedback from Major Professor.
  - Start studying for QE. Talk with Chair and committee about expectations.
- Year 2, Spring
  - Submit QE Application form at least 4 weeks before oral exam
  - Most of time will be spent on QE studying and preparation
  - Continue to polish prospectus. Send to committee at least 10 d before exam.
  - Have at least two practice exams
- Year 2 Spring or Summer
  - Take QE. Chair will submit form to report on QE.
  - Talk with MP about Dissertation Committee. Submit form to Advance to Candidacy and form Dissertation Committee.

QE Notes

- Research expectations
  - You should have done enough research that you can show significant results
  - But no need to have completed enough for a paper
- Practice exams
  - Set up 2 dates to give your presentation and get questions
  - Invite AGC students as well as people from your lab. Snacks are a good idea.
- QE format
  - General format
    - 3 hour exam
    - In 1st half you will present your prospectus/research
    - Plan for a 20-30 min presentation. Other 60-70 min will be questions
    - 2nd half is generally questions about classes, prospectus, research
  - Specific format (e.g., whether you can use PowerPoint or just blackboard) depends on your Chair, so ask him/her early in the process
- Food and drinks during QE
  - Bring whatever you want for yourself
  - But don't bring food or drinks for your committee. It's like a zoo…

Some QE Resources

- Graduate Studies: PhD timeline and forms required
  - https://grad.ucdavis.edu/resources/graduate-student-resources/academic-information-and-services/degree-requirements/doctoral
- Graduate Studies: Acing your QE
  - https://grad.ucdavis.edu/resources/graduate-student-resources/academic-information-and-services/acing-your-qualifying-exam
- AGC website
  - Degree requirements have information about QE
  - I will ask Veronica to post this presentation on the site
- Fellow AGC students, who can help you with…
  - Suggestions about committee members
  - How to study
  - Attending your practice QEs
- Let's do a QE Q & A…
  - Pre-QE students: what questions do you have?
  - Post-QE students: what tips do you have?

Final Piece

Let's take a group picture

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