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Major Requirements of the Ph.D. Program

1. Completion of seven graduate-level courses, of which 3-5 are considered to be 'core' or 'required' courses with the balance made up of elective courses tailored to your interests
2. Chemistry 251: Introduction to Research (does *not* count as one of the seven required courses)
3. Four quarters as a teaching assistant
4. Second-Year Exam
5. Advancement to Candidacy Exam
6. Completion and defense of a doctoral thesis

To Remain in Good Standing...

1. Earn a "B" or better in courses (a "B-" is a failing grade according to the graduate school)
 - A single "B-" can be petitioned as long as it is not in a core course
2. Keep your GPA above a 3.1 to qualify for TA positions

Other Responsibilities of Inorganic Graduate Students

1. Attend *all* Inorganic Seminars (Thursdays at 4pm)
2. Attend all Departmental Seminars, Colloquia, and Lectureships (i.e., Taft Lecture, Lee Lecture, etc.)
3. Meet with faculty members to discuss potential research projects
 - Inorganic faculty: Blum, Borovik, Evans, Heyduk, Law
 - Others of interest: Furche, Jarvo, Penner, Shea, Van Vranken, etc.

Coursework

You must sign up for 12-16 units every quarter to be considered a full-time student.

- a regular class is 4 units
- During Fall quarter, Chem 251: Introduction to Research is a 2 unit course
- During your first year, add 1 unit of Chem 290 (Inorganic Seminar #41374 with Prof. Blum) and 1-4 units of Chem 399 (University Teaching with Dr. Arasasingham) when you serve as a TA.
- After your first year, you still must register for 12-16 units: 2-12 units of Chem 280 (Research), 4 units of Chem 291 (Research Seminar), 1 unit of Chem 290 (Inorganic Seminar), and 1-4 units of Chem 399 (University Teaching)

Inorganic Core Courses

Chem 215 (Fall) *Inorganic Chemistry* Professor Heyduk

Chem 216 (Fall) *Organometallic Chemistry* Professor Blum

Chem 217 (Winter) *Physical Inorganic Chemistry* Professors Borovik and Evans

Bioinorganic Required Courses

Chem 215 (Fall) *Inorganic Chemistry* Professor Heyduk

Chem 217 (Winter) *Physical Inorganic Chemistry* Professors Borovik and Evans

Chem 218 (Spring) *Metallobiochemistry Chemistry* Professor Borovik

Chem 219 (Summer) *Chemical Biology* Professor Nowick

Chem 223 (Fall) *Biomacromolecules* Professor Luptak

Elective Courses Offered during 2009-2010

Chem 201 (Fall) *Organic Mechanisms I* Professor Van Vranken

Chem 231 (Fall) *Fundamentals of Quantum Mechanics* Professor Law

Chem 203 (Winter) *Organic Spectroscopy* Professor Rychnovsky

Chem 204 (Winter) *Organic Synthesis I* Professor Vanderwal

Chem 225 (Winter) *Polymer Chemistry* Professor Guan

Chem 243 (Winter) *Advanced Instrumental Analysis* Professor Corn

Chem 253 (Winter) *Solid-State Inorganic Materials Chemistry* Professor Law

Chem 202 (Spring) *Organic Mechanisms II* Professor Woerpel

Chem 205 (Winter) *Organic Synthesis II* Professor Van Vranken

Chem 213 (Spring) *Kinetics* Professor Ge

Chem 221a (Spring) *Biophysical Chemistry* Professor Potma

Chem 235 (Spring) *Molecular Quantum Mechanics* Professor Burke

Chem 249 (Spring) *Analytical Spectroscopy* Professor Corn

Mol Bio 204 (Fall) *Protein Structure and Function* MB&B Faculty

A Sample Inorganic Coursework Plan for Year 1

Fall 2009	4*	Chem 215: <i>Inorganic Chemistry</i>
	4*	Chem 216: <i>Organometallic Chemistry</i>
	4†	Chem 201: <i>Organic Mechanisms I</i> -or- ???
	2	Chem 251: <i>Introduction to Research</i>
	1	Chem 290: <i>Inorganic Seminar</i>
	1	Chem 399: <i>University Teaching</i>
<i>total</i>	12-16	
Winter 2010	4*	Chem 217: <i>Physical Inorganic Chemistry</i>
	4*	Chem 253: <i>Solid-State Inorganic Materials Chemistry</i>
	4†	Chem 203: <i>Organic Spectroscopy</i> -or- Chem 235: <i>Polymer Chemistry</i> -or- ???
	1	Chem 290: <i>Inorganic Seminar</i>
	1-3‡	Chem 399: <i>University Teaching</i>
<i>total</i>	12-14	
Spring 2010	4*	Chem 218: <i>Metallobiochemistry</i>
	4†	Chem 202: <i>Organic Mechanisms II</i> -or- Chem 249: <i>Analytical Spectroscopy</i> -or- ???
	1	Chem 290: <i>Inorganic Seminar</i>
	3	Chem 399: <i>University Teaching</i>
	0-4‡	Chem 280: <i>Research</i>
<i>total</i>	12	

This plan of study will allow you to finish all seven required courses in your first year of study. While it is possible to put one course off until you second year, it is highly inadvisable since you'll want to devote as much time as possible to research in preparation for your candidacy exam. Furthermore, front-loading your schedule by taking three courses during Fall and Winter quarters will free up your schedule for more research time during Spring of your first year.

* These are core (or effectively core) classes for both the inorganic and bio-inorganic curricula. It is highly recommended that you take these courses to be fully prepared for your Advancement Exam in the spring of your second year.

† You must take an elective course in two of the three quarters to bring your course total to seven. It is permissible for one of these courses to be an upper-division undergraduate-level course.

‡ Use this course to adjust the total number of units to fall within the 12-16 credits range.

A Sample Bioinorganic Coursework Plan for Year 1

Fall 2008	4*	Chem 215: <i>Inorganic Chemistry</i>
	4 [§]	Chem 216: <i>Organometallic Chemistry</i>
	4*	Chem 219: <i>Introduction to Chemical Biology</i> (taken Summer 2008)
	4*	Chem 223: <i>Biomacromolecules</i>
	2	Chem 251: <i>Introduction to Research</i>
	1	Chem 290: <i>Inorganic Seminar</i>
	1	Chem 399: <i>University Teaching</i>
<i>total</i>	20 [*]	
Winter 2009	4*	Chem 217: <i>Physical Inorganic Chemistry</i>
	4*	Chem 253: <i>Solid-State Materials Chemistry</i>
	4 [†]	Chem 203: <i>Organic Spectroscopy</i> -or- Chem 235: <i>Polymer Chemistry</i> -or- ???
	1	Chem 290: <i>Inorganic Seminar</i>
	1-3 [‡]	Chem 399: <i>University Teaching</i>
<i>total</i>	12-14	
Spring 2009	4*	Chem 218: <i>Metallobiochemistry</i>
	4 [†]	Chem 202: <i>Organic Mechanisms II</i> -or- Chem 249: <i>Analytical Spectroscopy</i> -or- ???
	1	Chem 290: <i>Inorganic Seminar</i>
	3	Chem 399: <i>University Teaching</i>
	0-4 [‡]	Chem 280: <i>Research</i>
<i>total</i>	12	

This plan of study will allow you to finish all seven required courses in your first year of study. While it is possible to put one course off until you second year, it is highly inadvisable since you'll want to devote as much time as possible to research in preparation for your candidacy exam. Furthermore, front-loading your schedule by taking three courses during Fall and Winter quarters will free up your schedule for more research time during Spring of your first year.

* These are core (or effectively core) classes for both the inorganic and bioinorganic curricula. It is highly recommended that you take these courses to be fully prepared for your Advancement Exam in the spring of your second year.

[§] It is possible to substitute Mol Bio 204 here. Please discuss this with me before registering for one of these classes.

[†] You must take an elective course in one of the two remaining quarters to bring your course total to seven. It is permissible for one of these courses to be an upper-division undergraduate-level course.

[‡] Use this course to adjust the total number of units to fall within the 12-16 credits range.

^{*} Because this course plan exceeds 20 hrs, please see Jaime Albano to authorize the course overload.

A General Timeline for your Ph.D.

Year One

- Fall 2009** 2-3 classes
Teaching (12-18 hrs/week)
Find a research advisor
- After finals make sure you get into the lab! Learn where things are stored. Find background reading material on your project. Get to know your new group members and learn about their research projects.
- Winter 2010** 2-3 classes
Teaching (12-18 hrs/week)
- Spend some time in the lab. Work at your desk so you can get to know your labmates. Continue to read up on your project and learn about the instruments and techniques that you'll need for your project.
- Spring 2010** 1-2 classes
Teaching (12-18 hrs/week)
- Get in the lab. You should be getting up to speed on your project. Make starting materials and new compounds so that you're running at full speed when summer arrives.
- Summer 2010** Research, research research!

Year Two (you will need at least one quarter of teaching in years 2-5 to fulfill the 4 quarter requirement)

- Fall 2010** Research, research research!
- Winter 2011** *Second-Year Exam:* A written report on your research progress will be due around the beginning of Winter Quarter, followed by a short oral exam in front of the inorganic faculty. The goal of this exercise is to make sure you're on track with your research program and to help you prepare for your candidacy exam in the spring.
- Spring - Summer 2011** Research, research research!

Year Three and Beyond

- Fall 2010** *Advancement to Candidacy Exam:* Another written report on your research progress and a written original research proposal will be due during Fall Quarter of your third year. You will be required to defend both your research and your original proposal in front of a faculty committee. The exam is a comprehensive evaluation of your chemistry knowledge.
- Winter 2011-Spring 2013** Research, research research!
Think about what you want to do after graduation.
Interview for jobs, apply for postdocs, attend ACS and/or GRC conferences.
GET OUT! Go show the world that you've become a great chemist!